(1)

Stiofan Schmeitz

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The EPA
P.O. Box 3000
Johnstown Castle Estate
Co Wexford

ENVIRONMENTAL PROTECTION AGENCY
09 MAR 2012

05.03.2012

G0469-01, Reference No B/IE/12/01

A Chara,

I wish to express my deep concerns about Teagasc's plans to release GM potatoes into the environment because:

- **Genes can end up in unexpected places:** Through "gene escape" they can pass on to other members of the same species and perhaps other species. Problems could result if, for example, herbicide-resistance genes got into weeds. There is scientific consensus that once widely released, recalling transgenes or foreign DNA sequences, whose safety is still subject to scientific debate, will not be feasible.

- **Genes can mutate with harmful effect:** It is not yet known whether artificial insertion of genes could destabilize an organism, encouraging mutations, or whether the inserted gene itself will keep stable in the plant over generations. There is no conclusive data on this issue.

- **"Sleeper" genes could be accidentally switched on and active genes could become "silent":** Organisms contain genes that are activated under certain conditions - for example, under attack from pathogens or severe weather. When a new gene is inserted, a "promoter" gene is also inserted to switch it on. This could activate a "sleeper" gene in inappropriate circumstances.

- **Interaction with wild and native populations:** GM crops could compete with and substitute traditional farmers' varieties and wild relatives that have been bred, or evolved, to cope with local stresses. For example, local varieties in Latin America permitted the recovery from the catastrophic potato blight in Ireland in the 1840s. Today such plants often help improve climate tolerance and disease resistance. If genetically modified crop varieties substitute them, they could be lost.

- **Impact on birds, insects and soil biota:** Nobody quite knows the impact of horizontal flow of GM pollen to bees' gut or of novel gene sequences in plants to fungi and soil and rumen bacteria. Besides, it is feared that widespread use of GM crops could lead to the development of resistance in insect populations exposed to the GM crops.

- **Transfer of allergenic genes:** These could be accidentally transferred to other species, causing dangerous reactions in people with allergies. For example, an allergenic Brazil-nut gene was transferred into a transgenic soybean variety.

- **Loss of farmers' access to plant material:** Biotechnology research is carried out predominantly by the private sector and there are concerns about market dominance in the agricultural sector by a few powerful companies. This could have a negative impact on small-scale farmers.

- **Impact of "terminator" technologies:** Although these are still under development and have not yet been commercialized, they would, if applied, prevent a crop from being grown the following year from its own seed. This means that farmers could not save seeds for planting the next season.

(source Food and Agriculture Organization of the United Nations: www.fao.org/english/newsroom/focus/2003/gmo8.htm)

In their application Teagasc state under H.3.: "There is no risk of successful gene transfer [...] In the unlikely event that cisgenic pollen reaches conventional varieties, the consequences of such an event are negligible, as the transfer of the cisgene does not confer a selective advantage or disadvantage", which is contradicting .

Teagasc's statement under H.6.: "The cisgenic line A15-031 is equivalent to the conventional potato cultivar Desiree with the exception of the presence of the Rpi-vnt1.1 gene. Conventional potatoes already possess Rpi genes that have been overcome by the pathogen. The Rpi-vnt1.1 is derived from the wild potato species *S. venturii* and there is no evidence to suggest that this cisgene, or any other Rpi genes that exist in conventional potato varieties exert any toxic or allergenic effects to human health. The impact on human health is therefore negligible." is preposterous as there is no scientific evidence whatsoever about potential negative effects.

In 1956 German authorities allow the medicine Contergan to be released to the public causing thousands of children to die or being born with severe defects. Only 5 years later it was withdrawn form the market with great reluctance.

Asbesthos was used in building from the 19th century until the late 20th century. Although it's lethal potential became known as early as 1906 it was banned only as late as 2003. Millions of people worldwide have died as a result of exposure to asbesthos.

DO NOT allow such display of using the public as trial ground for science to be repeated.

Mise le meas

Stiofán Schmeltz

Cheque for 10 EUR enclosed

(2)

Ref: Pt 2 GMO deliberate release regulations SI 500 of 2003

40 O'Hogan Rd

Ballyfermot

Dublin 10

March 7th 2012

We believe that GM food is a step too far beyond our understanding of how the earth works. GM crops growing in fields produce pollen and seeds that blow about, or are carried about by pollinator insects, and so GM crops in the open-air are uncontrollable. We just don't know enough about the effects of GM crops and food on soil, on other plants, on soil-related microbes, on insects, on other animals, or on humans (including all our grandchildren). But we know that once introduced, GM crops cannot be recalled. We should not allow GM crops or food to be grown in Ireland until we (and the scientists) know enough to make good decisions about GM food technology.

We strongly object to any trials on GM crops in Ireland under any circumstances until research has shown without ANY shadow of a doubt that it is safe for our environment and for human consumption. For now we urge the Irish Govt to follow the precautionary principal and safe guard both the environment and the population.

Regards

Jayne & Kieron Byrne

Jayne Byrne

(3)

Date: March 13, 2012

To EPA
PO Box 3000
Johnstown Castle Estate
County Wexford

From: Be the Change Group Sligo

We are a group of concerned citizens called Be the Change Sligo. We are writing to protest the Teagasc application to grow genetically modified potatoes. We object to this experiment on the following grounds:

1. Ireland's agri-food industry is the preeminent industry of our country. Our food products are known and prized for their organic, wholesome, and natural qualities. The introduction of genetically modified products will damage this reputation and compromise our status as a GMO free crop zone.

2. Taking this step and beginning the four year field trial with only one month's notice from the Teagasc is not responsible or ethical. There needs to be much greater public awareness and discourse surrounding the proposal.

3. There is a lack of knowledge about changing genes. Therefore, until the human and environmental impact is clearly identified and defined (including making public evidence of health dangers, reduced yields, GM super weeds, crop failures, widespread contamination, patent infringement lawsuits, product recalls, etc.) it is wrong to move forward with this trial.

4. The Irish people desire food that is safe and natural; we do not believe there is a market for scientifically altered food.

We are convinced that a moratorium on the use of genetically modified food is the only acceptable position for our country. We currently have the most credible GMO-free food label in Europe. This is our unique selling point and we are proud of our traditional agriculture. We are worried about the potential economic, health, and environmental impacts this scientific experiment might create.

Thank you for your consideration.

Kind regards,

Kathleen Glennon

Aine McGarty.
Mary Forde
Miriam OBrien
Geraldine Fitzpatrick
Margaret Harris
Kathleen Connealy.

P. S.
We are sending the GIO but object strongly to have to pay to be loucened citizens.

(4)

The **EPA, P.O. Box 3000, Johnstown Castle Estate, Co Wexford.**

Re: notification (G0469-01, Reference No B/IE/12/01) on 27/02/2012 from Teagasc, Oak Park, Carlow for the proposed deliberate release of GM potatoes into the environment for purposes other than placing on the market i.e. to perform a field trial.

I object to this application. Please do not allow the clean image of Ireland to be destroyed forever.

Vivian van standen
The old schoolhouse
Murmod
Virginia
Co. cavan.

I enclose m,y €10 euro fee. May you spend it well.

GC469-01 Rep. No. 5

Rathbeg Cottage,

Stonebridge Lane,

Shankill,

Co.Dublin

14th March 2012

The EPA

P.O. box 3000'

Johnstown Castle Estate,

CO.Wexford

Dear Sir or Madam,

I am appalled that Teageasc has applied for a licence to conduct a trial of genetically modified potatoes.

Blight has been with us since the famine, and we have been applying copper fungicide to the crops since then. More recently blight resistant potatoes have been developed and are widely grown. We do not need to develop GM potatoes.

There is a danger that by conducting these trials, that we will lose our reputation for safe food and non- GM food. This is surely far more important than the small commercial gain that could be had from developing a GM blight resistant potato.

The value of our GM status belongs to the Irish people, its gardeners, farmers and consumers. It is not justifiable that one section of society, Teageasc, can destroy this status.

It is reprehensible that the Minister Shane McEntee has stated that the responsibility for food safety lies primarily with the food producers. We have seen the terrible results from contaminated animal feed, and the shaming of Ireland's reputation. The responsibility of government is to enhance our reputation for safe food.

We have to hope that the EPA will protect us from this threat to our reputation and danger for our GM free potatoes.

Yours sincerely,

Willie Morrogh

Willie Morrogh

Williammorrogh1@eircom.net

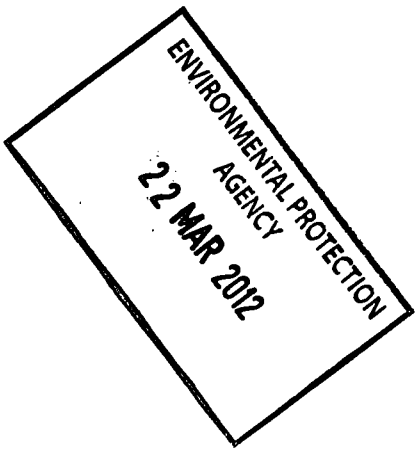
I enclose a cheque of €10

(6)

Carrickasedge

Carrickmacross

Co Monagahan



17 March 2012

EPA Headquarters

PO Box 3000

Johnstown Castle Estate

Co Wexford

Re:- Proposed deliberate release of a genetically modified organism (GMO)

Dear Sir/Madam

In accordance with sub-article 16(1) of S.I. No.500 of 2003 and including payment of €10 as specified in article 48 of S.I. no. 500 of 2003 I am making the following representation to the EPA regarding the proposed deliberate release of a GMO.

I wish to object to such a release on the following grounds:-

- It will be impossible to confine the GMO plant to one area and cross contamination with nearby crops will occur, as pollen from potato flowers will travel through the air and by insects;
- We are currently a GM free country which is a very important status for our food production and the marketing and selling of all food produce;
- The vast majority of potato varieties are pollinated by insects which include our declining and very important bee insects. Any beekeepers with colonies within 3 miles (or even more) could end up with GM pollen in their honey. Beekeepers in the area therefore would have to undergo very expensive procedure of having their honey tested to prove it contains no GM-positive DNA and put the honey through the expensive process of ultrafiltration to remove all pollen and then label the honey 'may contain traces of pollen from a genetically modified organism. This is required under a recent EU court ruling (see attached) and would make honey in the area virtually unsaleable and too expensive to produce. As you may be

aware Irish honey is a prised product and in decline. Hence the recent robbery of beehives in neighbouring Carlow. There is also the risk of the effect of such GM plants on the bee. It has been said that if the bee dies out so will a third of the world crops.

- The debate on GMO's is vast and wide ranging. Our Country is currently GM free and as a citizen I feel that this status is very important. As a citizen I would like to see more debate and choice in this area for all involved as this is a very serious decision and to my mind cannot be given to but a few.
- I can understand why Teagasc and potato farmers want to run such a trial as if successful if could produce increased yields and more money. However what are the consequences and once introduced there is no returning to normality. GMO produce could mean the loss of organic farming, wiping out choice for consumers in the long-term. It is known to cause super weeds and will cross-contaminate with other plants, through insects. It can also negatively effect unsuspecting insects who come accross these GM plants.

I also attach €10, as required .

Kind Regards

Louise Byrne

Court of Justice of the European Union
PRESS RELEASE No 79/11
Luxembourg, 6 September 2011

Press and Information

Judgment in Case C-442/09
Karl Heinz Bablok and Others v Freistaat Bayern

Honey and food supplements containing pollen derived from a GMO are foodstuffs produced from GMOs which cannot be marketed without prior authorisation

That pollen is itself no longer a GMO when it has lost its ability to reproduce and is totally incapable of transferring genetic material

The directive on genetically modified organisms (GMOs)[1] provides that such organisms may be released deliberately into the environment or placed on the market only when prior authorisation has been given.

Moreover, the regulation on genetically modified food[2] provides that GMOs for food use, foodstuffs containing or consisting of GMOs, or foodstuffs produced from ingredients produced using or containing GMOs must be authorised before being placed on the market.

In 1998 Monsanto obtained marketing for the genetically modified MON 810 maize. This contains the gene of a bacterium producing toxins which destroy the larvae of a parasitic butterfly, infestation with which constitutes a danger for the development of the maize plant.

A dispute has arisen between Mr Bablok, an amateur beekeeper, and Freistaat Bayern (State of Bavaria, Germany), which owns a number of plots of land on which MON 810 maize has been cultivated for research purposes in recent years. In the vicinity of those plots of land, Mr Bablok produces honey both for sale and for his own personal consumption. Up to 2005, he also produced pollen for sale as a foodstuff in the form of a food supplement. In 2005, MON 810 maize DNA and genetically modified proteins were detected in the maize pollen harvested by Mr Bablok in beehives situated 500 metres from the plots of land belonging to Freistaat Bayern. Very small amounts of MON 810 maize DNA were also detected in a number of samples of Mr Bablok's honey.

As he took the view that the presence of residues of genetically modified maize made his products unsuitable for marketing and for consumption, Mr Bablok brought legal proceedings against Freistaat Bayern before the German courts, in which four other amateur beekeepers joined.

The Bayerischer Verwaltungsgerichtshof (Bavarian Higher Administrative Court, Germany) observed that, once the disputed pollen is incorporated into the honey or pollen-based food supplements, it loses its capability to fertilise. That court seeks clarification as to the consequences of that loss. It has asked the Court of Justice, primarily, whether the mere presence, in the apicultural products in question, of genetically modified maize pollen which has lost its ability to reproduce has the consequence that those products may not be placed on the market without authorisation.

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[1] Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EEC (OJ 2001 L 106, p. 1), as amended by Regulation No 1829/2003 and by Regulation (EC) No 1830/2003 of the European Parliament and of the Council of 22 September 2003 (OJ 2003 L 268, p. 24).

[2] Regulation (EC) No 1829/2003 of the European Parliament and of the Council of 22 September 2003 on genetically modified food and feed (OJ 2003 L 268, p. 1).

In its judgment delivered today, the Court observes, first, that the pollen in question may be classified as a GMO only if it is an 'organism' within the meaning of the directive and the regulation, that is to say, if it is a 'biological entity capable' either of 'replication' or of 'transferring genetic material'. It holds in that regard that, since it is common ground that the pollen in question has lost all specific and individual ability to reproduce, it is for the referring court to determine whether that pollen is otherwise capable of 'transferring genetic material', taking due account of the scientific data available and considering all forms of scientifically established transfer of genetic material.

The Court concludes that a substance such as **pollen derived from a variety of genetically modified maize, which has lost its ability to reproduce and is totally incapable of transferring the genetic material** which it contains**, no longer comes within the scope of that concept.**

The Court goes on to hold that, nevertheless, **products such as honey and food supplements containing such pollen constitute foodstuffs which contain ingredients produced from GMOs within the meaning of the regulation**. In that regard, it finds that the pollen in issue is 'produced from GMOs' and that it constitutes an 'ingredient' of the honey and pollen-based food supplements. As regards the honey, the Court observes that pollen is not a foreign substance or an impurity, but rather a normal component of honey, with the result that it must indeed be classified as an 'ingredient'. The pollen in question consequently comes within the scope of the regulation and must be subject to the authorisation scheme provided for thereunder before being placed on the market.

The Court observes that that authorisation scheme for foodstuffs containing ingredients produced from GMOs applies irrespective of whether the pollen is introduced intentionally or adventitiously into the honey.

Lastly, the Court holds that the authorisation obligation exists irrespective of the proportion of genetically modified material contained in the product in question.

NOTE: A reference for a preliminary ruling allows the courts and tribunals of the Member States, in disputes which have been brought before them, to refer questions to the Court of Justice about the interpretation of European Union law or the validity of a European Union act. The Court of Justice does not decide the dispute itself. It is for the national court or tribunal to dispose of the case in accordance with the Court's decision, which is similarly binding on other national courts or tribunals before which a similar issue is raised.

Press contact: Christopher Fretwell ☎ (+352) 4303 3355

(7)

IRISH SEED SAVERS ASSOCIATION

Irish Seedsavers Association Ltd. (ISSA) – *Actively supporting the use of our Plant Genetic Resources*

Licencing Unit
Environmental Protection Agency
EPA Headquarters
PO Box 3000
Johnstown Castle Estate
Johnstown
Co. Wexford

22nd March 2012

AT THE CROSSROADS

Submission Document: Irish Seed Savers Association Re Genetically Modified Crops

The Irish Seedsavers Association is the leading Irish NGO in the preservation of open pollinated agricultural varieties; as such we have a deep concern with the proposed planting of Transgenic potatoes by Teagasc.

Food security is the critical issue of our time. How we face it will have a huge impact for generations to come. We must choose between two diverging paths:

Biodiversity and sustainable agriculture - this works with breeding seed for local conditions; using healthy crop inputs and complex plant nutrition which supports healthy soil and microbial life, the key element in the production of nutritious food. This approach allows for crop and seed adaptation to the environment, for selective breeding by farmers and for scientific research into new varieties. This has been acknowledged as the most environmentally sustainable and economically viable approach for the majority of the world's farmers. Long term sustainability is the core of this approach, as well as the stewardship of the land for future use. Those that follow us have a right to inherit productive land and a healthy environment.

The International Assessment of Agriculture Knowledge, Science and Technology for Development (IAASTD) is the most comprehensive, vigorous and credible global assessment of the future of agriculture, authored by over 400 scientists and development experts from over 80 countries and approved by 58 governments. It firmly concludes that business as usual is not an option, and that reliance on industrial agricultural technologies such as chemical pesticides and GMOs is unlikely to reduce global hunger and poverty. The IAASTD highlighted the urgent need to support small scale farmers, invest in agroecological farming, and undertake radical shifts in governance, trade and development policies to achieve social equity and control corporate actions. *www.agassessment.org/docs/SR/Exec.Sum.210408_Final.htlm*

Genetic engineering is now being heavily promoted as the ONLY way forward for food security. We must examine these claims very thoughtfully. This global solution for our food crisis by the monocultural planting of singular patented varieties is a very short term solution to a long term problem.

The issue of patented seeds that have to be purchased on an annual basis by the world's farmer's is of deep concern to many people worldwide. The GM industry is dominated by 3 large chemical companies who control over 50% of the worlds commercial crop-seed markets (Monsanto, Bayer and Dupont). Are we actually to believe that these corporate giants are acting in our interest by creating seeds for which we could become completely dependent upon them to produce? Seeds that are under their exclusive ownership and cannot be used by the world's farmers without an annual payment to the company?

To date, genetic modification utilizes processes to implant into the seed specific characteristics that would NEVER occur naturally and thus is fundamentally different from any form of conventional breeding.

Genetic modification creates a novel living organism that is then released into a complex and dynamic living system and we can have no definitive knowledge of how it will evolve in the natural environment over generations. We have no control over the route evolution will take, with novel inputs that could never have been introduced into the natural environment before.

The proposed Teagasc study intends to insert blight resistance of a naturally incompatible wild potato relative and they are thus creating a novel crop. Although they state there is no commercial interest at stake here, we would submit that this is pre market research. While there is good work being done on conventional breeding in this country and others, the siren call of the quick fix solution to the world's food shortage is based on unproven science.

During the famine, when so many perished when their Lumper potatoes uniformly succumbed to blight, a small community in coastal Kerry was growing the Bute potato, and these fields remained productive. This historically important potato, which still after 150 years exhibits moderate blight resistance, would have been lost forever had it not been maintained by locals in Kilmore, Co. Kerry and then sent on to Irish Seed Savers Association where it is now part of our living gene bank. There have been successful blight resistant potatoes bred through conventional methods. Blight is constantly evolving, and the susceptibility to it can occur with all varieties over time, including GM varieties.

The huge majority of GM crops produced on millions of acres are soy, corn, canola and cotton, which are then traded on the commodity exchange. After years and years of reassurance about the safety of Roundup, the herbicide integral to the production of these crops and for which the seed was engineered, recent research by the US Geological Survey suggests that the reality is quite different. Their surveys found that rivers, rain and air of the huge agricultural areas of the Mississippi River basin were contaminated with Roundup and that this contamination persisted throughout the entire growing season.
www.usgs.gov/newsroom/article.asp?ID=2909

Where does the future lie for Ireland?

These two paths are completely incompatible, we can only travel one.

One of the most positive stories in this difficult time has been the increasing demand for high quality Irish foods. Our reputation for pure clean food, is one of our most valuable and lasting assets, is easily destroyed.

It is important to protect it.

Chrys Dardenne, Manager

pp ***Chair***
Irish Seed Savers Association

Enc. *Postal order €10.00*

CORK
FREE CHOICE
CONSUMER GROUP

Parkmore, Templemartin, Bandon, Co.Cork
Carolinerobinson@eircom.net Tel. 021 7330178

(8)

22nd March 2012

Submission re proposed Gm potato trials by Teagasc

The Cork Free Choice Consumer Group would like to object to the proposed GM potato trials by Teagasc for the following reasons;

1. It will put Ireland's GM-free status at risk which would jeopardise Ireland's strongest marketing tool for the future.
2. Our concerns about growing GM crops include contamination of organic crops and the environment, potential destruction of biodiversity and local agriculture, excessive use of pesticides and the as-yet-unknown effects of GM food on public health, as well as the way in which a small number of patent-holding companies would control the food chain.
3. In previous GM potato trials the GM potatoes lost their blight resistance capabilities after about 5 years so it seems illogical for Teagasc to take all the risks for such short term gains.
4. The trials are going to use the variety Desiree which is not popular with the Irish consumer as it's not so floury.
5. There are plenty of blight-resistant varieties of potatoes being grown and marketed successfully by Irish organic and hobby growers. Sarpo Mira is perhaps the most popular. The secret of these varieties is that they bulk up quickly before the end of August so the green leaves can be mown down then. Farmers pack the ridges during the growing so that any blight can't get down into the tubers.
6. This is not a good time to conduct GM trials in Ireland. Last month BASF and Monsanto closed down their research facilities throughout Europe citing the fact that after 20 years of trying to sell GM technology, there is clearly no market for it.
7. Ireland is a small island and like any small business it should try to be different to the bigger entities. Marketing itself as a GM-free island is the logical way to go. The future for Irish farming should be based on top quality products targeting the highest priced markets.

Caroline Robinson, Secretary

Caroline Robinson

(9)

SUBMISSION TO THE E.P.A. REGARDING THE TEAGASC APPLICATION TO GROW GENETICALLY MODIFIED POTATOES IN IRISH FIELD TRIALS.

Tony Adams,
Teeraveen,
Lissarda,
Co. Cork

21st March 2012

I ask that the EPA reject this application taking note of the concerns outlined in this submission.

On hearing of these proposed trials I accessed the Teagasc website for further information, typing "GM Potato Trials" into their search-engine. This yielded no relevant results. It is in the context of Teagasc's apparent reluctance to make public details of their proposed trials, (beyond what is already available on the EPA's own website), that I make this submission. For this reason I am unable to ascertain exactly what trials are proposed, or what their scope and methodology might be, which hampers due process from taking place in an informed way. However, the fact that these plans fall under a research programme titled "Assessing and Monitoring the Impacts of Genetically Modified Plants on Agro-ecosystems" suggests to me that these trials may subsequently be deemed to constitute an Environmental Impact Assessment, an assumption I would question the legitimacy of.

In the context of numerous precedents from around the world it would be reasonable to assume that these Teagasc trials will not be genuinely objective or impartial. In the current circumstances the pressure on Teagasc to continue to maintain a favourable climate in which the biotechnology industry can develop in Ireland could easily trump any concerns over potential problems with this GM potato. I suggest that potential problems will not be searched for as scrupulously as would be the case if considerations such as human, animal and ecosystem health impacts, sustainability of alternative, (non-GM), food supplies including organic standards, and the legal implications of GM crop patenting were to be given appropriate importance.

Inadequacies in testing procedure have been routine in other countries, undermining the scientific validity of the results obtained, and suggesting that these trials may well be equally flawed. There are many ways to frame a trial in order to test for certain anticipated attributes without looking for or recording unexpected or unwanted results, which fails to give a true picture of the full impact the release of such a crop may have. Trials may be based on unsupported assumptions, for example that the GM crop is equivalent to its non-GM counterpart – which is a bit like assuming a nuclear bomb to be equivalent to a conventional bomb of the same size. It has also been commonplace for trials yielding unfavourable results to be wholly or partly suppressed, and for favourable results to be published without detailing the methodology used which might subsequently be shown to be flawed. For example, many GM trials carried out in the past have been insufficient in size and scale, having used unsound statistical methods and having been limited to too short a time-scale to expose possible long-term health impacts. Teagasc's reticence in making public their plans means that I do not even know whether the trials will include looking for health impacts or be limited to testing for effectiveness in providing resistance to late blight. You might call this "hobbling the opposition before you start".

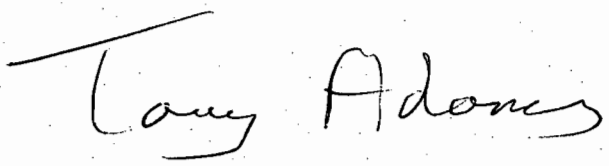
It particularly concerns me how testing authorities and individual scientists who have arrived at and made public unfavourable results have been treated, including the withdrawal of co-operation of the biotechnology company by refusing to supply further GM material for testing; the threat or actual practice of cutting funding; the threat or actual practice of legal action to gag the scientists involved; the removal of facilities; the breaking up of research teams; the re-assignment of scientists to different projects; even the threat or actual practice of termination of contract. The case of Dr.Pusztai in the UK is relevant in this instance. As one of the World's foremost scientists involved in the testing of GM foods, (and personally pro-GM), he became alarmed both by the health problems he found to be associated with the GM potatoes he was testing and by the wholly inadequate trials already carried out by the industry. When he went public with his concerns, drawing a lot of attention in the UK media at that time, he was thrown out of his job (after 35 years), silenced with threats of a law-suit, his research team was disbanded and the project was terminated; *(see appendix 1, taken from 'Genetic Roulette' by Jeffrey M. Smith)*. I am told that he was subsequently deported. If this is what happened to the UK's leading GM research scientist when he stepped on the toes of the biotechnology industry, would it be rash to assume that someone within the Teagasc research team, (who are not even bold enough to advertise their GM trials clearly on their website), would have the level of scientific integrity necessary to make public any concerns they might find regarding the methodology or results of these trials?

The onus, it seems, is upon those sceptical of this technology to 'prove' its inherent dangers rather than on the biotechnology industry to prove its safety. The Precautionary Principle it seems is given no more bite than the tooth-fairy.

GM technology seems to be built upon the assumption that genes act essentially like lines of computer code – we even call it "genetic code". The assumption is that each gene has a single, identifiable effect, such as turning blight resistance on or off. This is a dangerously simplistic way of approaching the genetic mechanism of living things, and even though it is now widely accepted that this model is obsolete it still forms the founding principle on which genetic engineering is based. Just as it has proved difficult to produce pharmaceutical drugs which have just the one, desired effect, so manipulated genes will give rise to various unpredicted side-effects. Just suppose that one of these side-effects is to cause an increased incidence of cancer in humans. The chances of this showing up in a typical LD50 test, for example, (of the type: "30 white mice were taken, divided into two groups, one of which was fed GM potatoes, the other non-GM potatoes..."), which counts how many mice die within a set period is quite small. More likely the test proves "inconclusive", which means that there is "no reason" to find a problem with the modified potato, (the Precautionary Principle having already gone out the window), and it duly proceeds to the supermarket and the local chipper. So then let's just suppose that a few years down the line a rise in cancer rates is noticed within the population. Who is going to link this with the GM potato entering the food-chain? But let's suppose that the GM potato *is* suspected: Who is going to pay for trials to prove this link, when doing so would be financiallty catastrophic for the biotechnology company involved? More likely, I suggest, that another branch of the same biotechnology company comes up with some new cancer drug, the money keeps rolling in, the population are kept ignorant by a compliant media and the regulatory authorities prove too poorly funded or spineless or corrupted to do their job properly and act in the interests of public health.

The contamination of non-GM by GM seed and non-GM by GM produce appears to be the mechanism by which the biotechnology companies have pushed their products onto a wary population. There are well-documented cases of farmers being threatened with legal action and having large sums of money extorted from them because, unknown to them, unlicensed GM crops have been found growing on their land; *(see appendix 2, a sample threatening letter to a Canadian farmer)*. The Canadian farmer Percy Schmeiser was one brave enough to stand up to the threats and speak out: GM corn had fallen from trucks passing on the highway onto his land and was found by Monsanto agents growing along the roadside there; (*see appendix 3*). With these Teagasc trials the concern is that GM potatoes will be deliberately or accidentally released beyond the bounds of the trial and will subsequently turn up within the non-GM seed potato stock. Then what will stand between Irish farmers and the type of threat faced by Percy Schmeiser, amongst dozens of Canadian and US farmers? An EPA indemnified by the Irish taxpayer?

I make this submission enclosing the requisite fee of 10 Euros.



Tony Adams

Appendix 1

In 1996, the UK government embarked on a plan to require long-term safety tests for all GM foods. A £1.6 million grant was awarded to a team of researchers to develop the testing protocol. Led by Arpad Pusztai of the prestigious Rowett Institute, the team developed a GM potato to use as the first "subject" for their studies. The potatoes were engineered with a gene from the snowdrop plant, which produces an insecticide called the GNA lectin.

Pusztai and his colleagues had conducted extensive research on the GNA lectin for nearly seven years and found it to be harmless to rats. Researchers anticipated that the potato engineered to produce the lectin would similarly be harmless. In fact, the UK government and the Rowett Institute were planning to commercialize the GNA potato and had contracts specifying how the royalties were to be divided.

To test the GM potato, six male rats were assigned to each diet category containing natural potato, natural potato with the lectin added, or GM potato. All three tests were repeated with raw, boiled, and baked potatoes, and rat diets were all supplemented to be complete and balanced. Rats were sacrificed at 10 or 110 days. This protocol had been approved in advance by the office that awarded the grant and similar designs had been used in more than 50 studies conducted at the institute. A 2003 article in *Nutrition and Health* described it as "remarkable in that the experimental conditions were varied and several ways were found by which to demonstrate possible health effects of GM-foods."[3]

The GM potatoes adversely affected virtually every organ system of young rats—with most changes found after just 10 days. Their brains, livers, and testicles were generally smaller, suggesting disruption of normal growth processes due to either malabsorption of nutrients or unknown toxins. White blood cells responded to a challenge more slowly, indicating immune system damage; and organs related to the immune system, including the thymus and the spleen, also showed changes. The animals had enlarged pancreases and intestines, and partial atrophy of the liver.[4] And in all cases, the GM potato created proliferative cell growth in the stomach and small and large intestines; the lining was significantly thicker than controls (see photo left).[5] Although no tumors were detected, such growth can indicate a precancerous condition.

By contrast, rats fed non-GM potatoes spiked with the lectin were relatively unaffected. Even when rats were fed more than 700 times the amount of the GNA lectin that the GM potato produced (in an earlier study), the impact did not approach that of the GM potatoes.[6] Thus, the damage to the rats was not caused by the lectin, but apparently by "the genetic modification process itself."[7] This includes disruptions in the potato genome as well as unpredicted effects from additional genetic material inserted with the lectin gene (see section 2). **The study raised serious questions about the safety of *all* GM products on the market,** most of which were created with the same process and the same accompanying genetic material. Under normal circumstances, the disturbing results would be followed up to identify the cause of the problems, evaluate effects on female rats and test GM foods on the market to see if they were creating similar effects. It didn't happen.

Research stopped, scientists gagged

Pusztai was invited to speak on television about GM food. With permission from his director, he was interviewed and spoke generally about his research—without sharing details in advance of publication. For about two days he was a hero at his institute, which was besieged with press. Then, allegedly two phone calls were placed from the UK prime minister's office, forwarded through the receptionist to the director. The next morning, Pusztai was released from his job after 35 years and silenced with threats of a lawsuit, the 20-member research team was disbanded, and the project terminated. A part of the results was eventually published in the *Lancet*. In spite of the preliminary nature of the evidence, it remains the most in-depth GMO feeding study ever published.

Problems may be common in GM crops

It is sobering that these potatoes would have passed the tests used to get other GM crops approved. Stanley Ewen, who identified the proliferative cell growth in the rats, says that if GM foods create such effects in humans, they might increase the incidence of digestive system ailments such as Barrett's esophagus and stomach and colorectal cancer. We don't know if commercialized GM crops have this effect (although a rat study on experimental GM peas did show "significantly enlarged"[8] small and large intestines that might have resulted from excessive cell growth). Consumers in the United States and elsewhere are exposed to GM ingredients everyday, but usually in smaller doses and in more processed formats than was used in this potato study.

Appendix Z

MONSANTO
Food · Health · Hope

MONSANTO CANADA INC.
3333 ARGENTIA ROAD
4TH FLOOR
MISSISSAUGA, ONTARIO L5
PHONE (905) 819 6626
FAX (905) 819-9003

By Registered Mail

November 12, 1998

Mr. Edward Zielinski
P.O. Box 1226
Danora (Makado), Saskatchewan

Dear Mr. Zielinski:

As you know on July 22, 1998, Monsanto with the assistance of Robinson Investigation Ltd. conducted an investigation (Investigation) to determine whether you had improperly planted Roundup Ready® Canola in 1998 without being licensed from Monsanto Canada Inc. A copy of our standard 1998 License Agreement (TUA) is attached for your review.

We have completed our Investigation and have very good evidence to believe that Roundup Ready canola was planted on approximately 250 acres of land identified as SE 28-30-2, NE 28-30-2 and SE 19-30-2 in violation of Monsanto's proprietary rights.

The planting of Roundup Ready Canola without a license is a serious violation of Monsanto's proprietary rights.

Prior to making any final decision as to what steps we will be taking, and in an attempt to resolve this issue in a timely and economical manner, we are prepared to refrain from commencing any legal proceedings against you subject to the following:

1. You forthwith pay to Monsanto the following sum: 250A x $115/A = $28,750.00

2. You acknowledge Monsanto has the right to take samples from all of your owned or leased land and storage bins for three years from the date of this letter.

3. You agree not to disclose the specific terms and conditions of this Settlement Agreement to any third party.

You agree that Monsanto shall at its sole discretion have the right to disclose the facts and settlement terms associated with the Investigation and this Settlement Agreement.

Acceptance of this offer will be acknowledged by forwarding to Monsanto a certified cheque for $28,750.00 and a duplicate signed copy of this letter by December 14, 1998.

Yours truly,

MONSANTO CANADA INC.

Keith A. MacMillan
Director, Legal Affairs

READ AND AGREED TO THIS _____ DAY OF _____, 1998.

SIGNED: _____

NAME: _____.

Zielinski

Appendix 3

PROCEEDINGS OF THE GREEN IRELAND CONFERENCE

Kilkenny Castle, 16-18 June 2006

Full proceedings may be found at
www.gmfreeireland.org/conference

PERCY SCHMEISER • Keynote address

Former Member of the Legislative Assembly (Parliament), Province of Saskatchewan, Canada.

Member, World Commission on the Future of Food and Agriculture.

Percy Schmeiser is a 75-year old Canadian farmer who faced a patent infringement lawsuit from Monsanto after his fields became contaminated by their patented GMO seeds in 1996 - 1998.

Monsanto wanted the profits from his entire crop, patent licensing fees, and a million dollars in court costs. Unlike many other contaminated farmers who were similarly intimidated, Percy stood up for his rights to use his own seeds. After a protracted legal battle, the Supreme Court of Canada dismissed Monsanto's financial claims but ruled that Percy's crops belong to Monsanto.

This ruling triggered class action and liability lawsuits currently underway against Monsanto in the USA and Canada for losing control of its patented crops.

In May 2006, Percy filed a complaint against the Government of Canada at the United Nations Council for Human Rights for violating the rights of farmers, consumers and future generations.

This is the complete transcript of a video recording of Percy's keynote address to the Green Ireland conference on 16 June 2006, slightly edited for clarity.

The various Monsanto documents which Percy refers to may be downloaded by following the footnote links on page 8.

An earlier interview of Percy Schmeiser by GM-free Ireland at the Terra Madre Festival hosted by Slow Food in 2004 may be found at www.gmfreeireland.org/interviews/schmeiser.php

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Thanks very much Michael. It's really indeed a pleasure to be here because it's the first time that I have been able to visit Ireland, so I am really grateful for the invitation.

As mentioned, I come from Western Canada, in the heart of the grain-growing area. My wife and I were seed developers in rapeseed - or Canola as we call it there – since around 1947. Besides being a farmer, I was also involved in other different types of occupations: I was a Member of Parliament, and in that position I was on many agricultural committees, both at the provincial and federal level dealing with rules, laws and regulations which I always thought would benefit farmers. So basically, I have been dealing with agriculture all my life – both practically and in law-making.

The whole issue of GMOs – genetically modified organisms – to me can be basically divided into three main categories. First of all the property rights of people and farmers and the intellectual property rights of corporations; the health and food issues; and the environmental issues.

Now in North America we are really involved with the Terminator gene, the Cheater gene [also known as the Traitor gene], and with Pharma plants – prescription-type drugs now being produced by plants in the wild or in the open as we say.

I'd like to go back to 1996, when regulatory approval was given in North America for four principal GMO crops: soybeans, corn or maize, cotton, and – in Canada – Canola or oilseed rape.

In 1998 Monsanto laid a patent infringement lawsuit against my wife and myself, in which they said we were growing their GMO rapeseed without a license from them. Up to that point we had never bought Monsanto seed, we had never gone to a Monsanto meeting, we didn't even know anybody from Monsanto. So that was a real surprise to us. Especially since we were seed developers in rapeseed, we realized there was a possibility that all of what we had developed over the past fifty years might now be contaminated with GMOs. And indeed later on we found out that this was the case. There were some other items in that lawsuit: that we had somehow illegally obtained their seed, even stole it, and so on.

Patent laws generally come under Federal jurisdiction in most countries of the world, including Canada. So this became a Federal Court issue.

So we stood up to Monsanto and said "if you have any of your GMOs in the crops that we have developed, you should be liable and there should be a liability lawsuit laid against you."

The case went to the Federal Court of Canada with one judge. But in the pre-trial period, which lasted almost two years, Monsanto withdrew all its allegations that we had ever obtained their seed illegally, because they knew at that time who they had sold their seed to and there were only three farmers in the whole of our region who had grown GMO canola in 1996 and 1997.

After two-and-a-half weeks of trial in June 2000, the decision of the trial judge made my case known around the world almost immediately when people realized that they could lose the rights to their seeds and crops almost overnight if they were contaminated. As I mentioned, Monsanto had withdrawn all its allegations, but the judge said it doesn't matter how their GMOs get in to any farmers field.

People realised that they could lose the rights to their seeds and crops almost overnight if they were contaminated.

This is primarily what the judge ruled: he said it does not matter how Monsanto's GMOs get in to any farmers fields or seed supply. And he mentioned how this could happen: direct seed movement by wind, by birds, by bees etc and also through cross-pollination. Back in 1997 and 1998 there was very little cross-pollination, so cross contamination at that time was mainly by direct seed movement, but there was some cross-pollination.

And if that happens to any farmer – whether you're an organic farmer or a conventional farmer like myself – you no longer own your seeds and plants: they become owned by a corporation, in this case Monsanto. The level of contamination does not matter. If it's only 1% or 2% or 8% - as it was shown later on by tests on our fields - you no longer own your seeds or plants.

The judge also ruled that Monsanto owned all of what we had developed in Canola or rapeseed in the last fifty years, because their gene was now to some degree in our crops, and also that we were not allowed to used our seeds and plants again.

And all our profit – we had about 1,030 acres seeded to rapeseed in 1998 – all the profit from all the fields goes to Monsanto, even from our fields that had no contamination in them, because he ruled that since we were seed developers using our own seeds from year to year, there was a probability there could be some of their genes in the rest of those fields.

So that is what the ruling was, and that is what made our case become internationally known.

We then took it to the Federal Court of Appeal, where you primarily discuss facts of law, points of law, or where the trial judge erred in law. And the Federal Court of Appeal ruled that they did not agree with all of the trial judge's decision, but they still upheld it on the issue of the patenting of genes.

After close to five years of battle spending around $ 300,000 fighting Monsanto through the courts, we then applied to the Supreme Court of Canada. And it was really a relief for my wife and me when the Supreme Court of Canada decided to hear the case.

Now we had an opportunity to bring other items in, besides the issue of patent infringement.

Some of these issues were: can living organisms - seeds, plants, genes and human organs - be owned and protected by corporate patents on intellectual property? Can farmers' rights to grow conventional or organic crops be protected? Can farmers keep their ancient right to save and use their seed from year to year?

Another issue, which was very important to my wife and myself, was who owns life? Can you patent life? This became a very important moral and ethical issue to us.

What a lot of people don't know that in the time of the patent infringement claim, Monsanto had also laid another lawsuit against us for a million dollars for their court costs up to a certain period. They said we were stubborn, we were arrogant, and we didn't do what Monsanto wanted – so we had this other million-dollar lawsuit to fight. All of these issues then came before the Supreme Court.

And the Supreme Court ruled in our favour: they said that we didn't have to pay Monsanto anything. But what was not fair, was the Court ruling that we would have to pay our legal costs, which by that time were over $400,000, and Monsanto would pay theirs which were about $ 2 million. It's a lot easier for a corporation on a test case to pay their legal costs versus a farmer fighting for his rights for $ 400,000. So that was a major victory for us.

The Supreme Court ruled that whenever Monsanto's GMO genes arrive into any higher life form, Monsanto owns and controls that life form.

But what about the issue of patenting life? This is the exact ruling from the Supreme Court. They said Monsanto's patent on a gene is valid. And whenever that gene arrives into any higher life form, by whatever means – and I mentioned some of those before: cross pollination, direct seed movement – Monsanto owns and controls that life form. So where does it stop now? Does it stop with seeds, plants, birds, bees, animals, or ultimately with a human being because of that ruling?

The Supreme Court also said it really has to go back to the Parliament and people of Canada to decide who owns life. So now there are actually more questions than answers with that ruling. And I'm sure that eventually within the next two years it will become before the Parliament of Canada to address the whole issue of patent law in regards to the patenting of life.

You are fortunate here in Ireland because you still have a choice. We no longer have a choice in Canada in regards to two major crops – soybeans and rapeseed - because all our seed supply is now contaminated. We no longer have any pure Canola seed or soybean seed left. It's all contaminated with GMOs.

You are fortunate here in Ireland because you still have a choice.

So you have that choice. In 1996 when GMOs were introduced in Canada, we didn't have anybody to come and tell us what could happen. This is what the farmers were basically told in 1996: GMOs would increase yields, make crops more nutritious, and most importantly, reduce the use of chemicals. There were other buzzwords; we would now be able to feed a hungry world, we would always have sustainable agriculture, and I know you are hearing that in Europe now. That's what farmers were told.

But what happened within one or two years? Number one, the yields went down, especially in rapeseed and soybeans - at least 15% in soybeans. And the nutritional value went down, sometimes by 50%.

But worst of all is the massive increased used of chemicals – at least three times more than ever – because already a regular conventional rapeseed plant has developed into a new superweed which we never ever had before on our prairies or on the northern plains of the US. And that new superweed is in every field now. It's in wheat fields, barley, oats and so on, and takes a massive new use of more powerful highly toxic chemicals to control. And it's not only in our fields; it's also in our cities, our towns, cemeteries, golf courses. So it's a new expense to control this new superweed.

Everything that the corporations told us back in 1996 has turned out to be exactly the opposite. The economic issue has been devastating to our farmers. We cannot sell rapeseed to many countries in the world including the European Union. And so the prices have dropped. Our honey industry has basically been destroyed because our honey has been contaminated with GMOs. A bee doesn't know which flower is a GMO and which flower is not.

These are some of the results of the introduction of GMOs. But there is a whole other side to it. And that is the issue of control, the culture of fear that has also developed as a consequence. And I think it's very important for me to bring you this message here this morning.

Here is a contract from Monsanto [1]. This is a Canadian one, and I also have an American one, but basically they are the same. Number one, a farmer never can use his own seeds; he must always buy the seeds from Monsanto and buy the chemicals from Monsanto. He must pay Monsanto a license fee of about $40 per hectare per year. He must also sign a non-disclosure statement where if you commit some violation you can never talk to your neighbours or to the press about what Monsanto has done to you. So your freedom of speech and expression is taken away. Another clause in the contract says you must permit Monsanto's police force to come onto your land for three years after you sign this contract, and they can go through your fields, your tax records, your granary, to check on you. Another clause for this year is that a farmer gives up his rights for the rest of his life to take Monsanto to court for any violation. So you give up your rights of even taking Monsanto to court.

That is the contract they get farmers to sign. But if you are contaminated against your wishes like we were, you fall under the same provisions through the Patent Act on the gene as if you had signed the contract.

This year they have another policy where they don't have to mess around with contracts or anything like that. They now have on the seed bag – and here's a copy which I just got from a

farmer three weeks ago [2] - a statement that by opening up the seed bag, you agree to all the terms and conditions of Monsanto. So that is how they get total control over farmers.

This is another document form Monsanto which they call "information" [3]. This states that if you think your neighbour is growing GMOs without a license you should inform on him to Monsanto. And if one farmer does that to his fellow-farmer or neighbour, you get a free gift from Monsanto such as a leather jacket or free chemicals. But it's pretty serious, and I think it's one of the worst things that could happen, because when Monsanto gets that information they immediately send round two of their police. They have their own very large police force in Canada – former Royal Canadian Mounted Police – and in the US they hire Pinkerton Investigation Services. And immediately they send two of these police officers to a farmer's home and say to him or his wife "we have this information or tip or rumour that you are growing GMOs without a license from us" and a farmer will say "I'm an organic farmer or a conventional farmer, I had nothing to do with you people" and then Monsanto's police will say "you're lying, if you don't confess we'll take you to court and you won't have a farm left".

Now that's one method. Another method is when they can't find a farmer at home, they will send what farmers call extortion letters [4]. We don't know how many thousands of these have been sent out to farmers. But basically it states "We have reason to believe that you might be growing Monsanto's GMOs without a license. We estimate you have a hundred hectares or two hundred hectares. Send us $100,000 or $200,000 in two weeks time or whatever and we may or may not take you to court."

Can you imagine the fear in the farm family when they get a letter like this from a multi-billion dollar corporation? "Send us $100,000 by a certain date because we think you might be growing our GMOs". So that's the whole new fear culture which Monsanto has been able to exercise over our people. We never thought this could happen to us in Canada. But it has happened, is happening, and continues to happen.

I should also say that in this letter, there is a clause stating you are not allowed to show this letter to anyone or we will fine you.

I have another letter I got from a farmer where they state to the farmer "it will be in your best interests to settle with us if you want to continue to farm in the future".

So that is what I'm talking about, this whole new culture of fear.

What about our rural social fabric? I'm sure you don't want this to happen to you people here in Ireland, to your farmers. When these police leave a farmer's home, what do you think goes through his mind or that of his wife? Was it this neighour, or that neighbour, or the other neighbour down the road who has caused me this trouble? And now you have suspicion, you have farmers not talking together, farmers scared to talk together. In my case farmers were scared to even associate with us or talk to us because they were scared that Monsanto might find out and they also would be intimidated and harassed.

One of the worst things that happens with the introduction of GMOs is the breakdown of our rural social fabric and a whole new issue of fear.

So now you have that breakdown of our rural social fabric. And I think that is one of the worst things that could happen with the introduction of GMOs – the breakdown of our rural social fabric and culture. This is a whole new issue of fear. Put fear into people to be subject to Monsanto's patent on the gene.

I should say this. In Canada we do have a Federal law where you cannot patent a seed or plant. But the court ruled that if Monsanto's patent on a gene is valid, and that gene gets into any higher life form, they own and control that higher life form. So they don't need a patent on a seed or plant just by the fact of having a patent on a gene.

I think there are two important things that you really have to remember if you ever introduce GMOs into Ireland besides the patent issues and the fact that production and nutritional values go down.

The first issue is "co-existence" or containment. Once you introduce a new life-form like a GMO into the environment you can never contain it. You can not contain the wind or cross-pollination. You can't build a wall big enough! And I heard that sometimes in Europe here they said all you need is three meters [for a buffer zone or crop separation distance between GMO and conventional or organic crops].

Once you introduce a new life-form like a GMO into the environment you can never contain it. You can not contain the wind or cross-pollination. You can't build a wall big enough! There is no such thing as "co-existence" of GM with conventional and organic crops.

We know from experiments done by scientists at the University of Winnipeg at Manitoba that there is no safe distance! The studies related to how long pollen will stay in the air and wind speeds. So you can not contain it.

The second issue is that if you can not contain it, you can not – believe me – you can not have "co-existence." If you introduce GMOs, eventually as by us in three or four years, it became all GMOs. So there is no such thing as "co-existence"! I've heard that again in Germany, Switzerland and Austria when I was there during the last three months.

They say you can have "co-existence", that farmers have choice. There is no more choice! Your choice is gone. So it's a point of no return. Once you introduce it, it's over and it's over! And many times we are asked, can it ever be called back from the environment? As far as we know up to today, once you introduce a new life-form into the environment, there is no calling it back. What would you call back? In the case of rapeseed, it has very close cousins. It comes from the Brassica family – broccoli, brussel sprouts, cabbage, cauliflower, collards, kale, kohlrabi, mustard, and turnip including distant cousins like wild mustard. Back in Canada it is already cross-pollinating into these close cousins including radishes, turnip, cauliflower – making more crops organic farmers no longer can raise. It keeps destroying one industry after another.

But you still have the choice here in Ireland. I have not come here to Ireland to tell you what to do. I'm here to tell you what has happened to us. And you can benefit from our experience.

In the last ten years there have been no new GMOs introduced into Canada. Just the four principal ones in 1996 – Monsanto wanted to introduce GMO wheat, GMO alfalfa, GMO flax, and GMO rice. And they have not been allowed or given regulatory approval to do so because farmers have seen what has happened with the introduction of those four GMO crops back in 1996.

My case has now been taken before the United Nations Commission on Human Rights [since renamed the UN Council on Human Rights] in May of this year [2006]. The Government of Canada is charged with drastic violations of human rights with the introduction of GMOs – human rights in regards to people and consumers. We don't have GMO labeling. We don't know what we're eating, what's in our food. We don't know what we're feeding our children and our grandchildren. That's a drastic violation of our human rights. Farmers' choice has been taken away. Organic farmers' choice has been taken away... a drastic violation of human rights.

Another issue is that in our academic field, in our universities, and in our government research stations, scientists are muzzled because most of their funding now comes from the private sector instead of the public purse. And they are not allowed to speak out on their findings. That is a drastic violation of our academic community.

So this has gone before the United Nations last month [May 2006] in Geneva, and what the results will be from that we do not know. But that is another issue that my case has brought forward, the violation of human rights.

Those are some of the issues that have happened with the introduction of GMOs. But one of the greatest curses is the two new issues that I mentioned before: the Terminator gene and the Cheater gene [also known as the Traitor gene] and now the introduction of Pharma plants through which pharmaceutical drugs are produced by plants.

The Terminator gene is the greatest assault on human life that we have ever seen on this planet.

I will go into the Terminator gene first. Basically it's a gene put into a seed so that the seeds produced from that plant are sterile. It's a termination of life. What's very important about that is that it can cross-pollinate into your neighbour's crop and render his seeds also sterile. Now where does it stop?

A Terminator gene can be put into any higher life-form. And when I use the term "higher life-form" I mean anything that basically comes from a seed. So again, where does it stop? Birds, bees, animals, and what about human beings? A big article in a Canadian newspaper about three weeks ago asked if this is a new form of life control. Think about it! So when these corporations call themselves "life sciences", it's basically death science when they introduce something into the environment that will destroy life. To me it's the greatest assault on human life that we have ever seen on this planet. Imagine introducing something that can terminate life in all higher life-forms!

The other issue I mentioned is the Cheater [or Traitor] gene, which would then give corporations total control over the seed supply and the food supply. The Cheater gene and the Terminator gene can both be put into a seed and when the seed is planted and grows into a plant, it will not produce a seed unless you spray a chemical on it. When you spray the chemical on it the plant produces a seed but the Terminator gene kicks in and renders the seed sterile.

That will give them total control of the seed supply and food supply. And this is what it's all about. Control of the seed supply and food supply, and also the massive increased use of chemicals.

Pharma plants we think are absolutely criminal. Both the US and Canadian governments have allowed prescription-type plants to be grown in the wild and in the open. Six major drugs are being produced by plants right now in North America – in the open! I will try and remember them: industrial enzymes, contraceptive drugs, growth hormones, blood thinners, blood clotters are now being produced by plants. Now you say why are they doing it? It's a lot cheaper to produce a drug in a plant than it is in a lab. We don't have labeling in North America, so we don't know what we're eating. Now we could be eating foods that not only contain GMOs but also contain drugs. Not long ago I was at a meeting in California, and there was a doctor there from Oregon where they have done a lot of testing on these pharma plants. And he gave some examples. If a person has major surgery and then goes home and eats a food with blood thinner, what will the results be? Another example he gave: if a woman is pregnant, and eats food with a contraceptive drug in it, what will the results be?

This is what's going on now with the introduction of GMOs, and I'm sure you don't want this to happen here in Ireland. But this is what has happened to us in Canada and the United States.

I won't go into the environmental issues, and the other dangers of eating GMOs, and the massive use of chemicals. And believe me, I was there in 1947 when chemicals were first introduced in Canada after the Second World War. We've seen the harm the massive use of chemicals has done to our environment and to human health. Now we have the massive use of GMOs.

Why did my wife and I stand up to Monsanto? Sure, we lost fifty years of development, we had two lawsuits against us, but we felt that farmers should never ever lose their right to use their own seeds and plants. First of all, the development by farmers of seeds and plants that are suitable for their own climatic and soil conditions. Even though we were developing a new rapeseed for our region around Saskatoon in the central part of Saskatchewan, it may not have done as well two hundred miles away where soil and climatic conditions are different. One glove does not fit all in the seed industry. And the other issue is that if you get down to one or two varieties of any species of seed or plant, and you have some disease, some blight, some disaster, you've got nothing to fall back on. That's what's happening in Mexico in the states of Pueblo and Oaxaca, where half of the ten thousand varieties of maize are now contaminated with GMOs through American food aid given in the form of corn or maize. So what will happen if you ever lose that [biodiversity]? You have nothing more to fall back on.

Another reason is that my wife and I have five children, fifteen grandchildren, and a great-grandchild on the way. Do we want to leave a legacy of an environment full of poisons - our land, our soil, our air and our water full of poisons? We've seen with fifty years of experience what has happened. I don't think any of us want to leave that kind of legacy!

That's one of the reasons I am here in Ireland today – to bring you that message about what can happen with the introduction of GMOs and the massive increased use of chemicals. We feel it is so important to provide an environment for future generations with safe food, and air, and water. And we have to do it now!

Fifteen years from now one of my grandkids may say to me, "Grandpa, you had a chance to do something about it. And you didn't do anything about it."

My wife and I are here to bring you that message. We are so concerned about future generations. Farmers should never ever give up their rights to plant their own seeds and plants. And if they do, you're back to the feudal system and you become serfs of the land. That's what's happening in Canada right now, where the control is no longer by governments, it's by corporations.

And believe me, so long as my wife and I have life in us, we're going to go down fighting for the rights of people and of farmers especially always to be able to use their own seeds from year to year.

It's a pleasure to come to Ireland. Thank you, Michael, for the invitation, and I hope some day to come back. Thank you very much.

NOTES:

Copies of Monsanto documents referred to in the text may be found on the web (along with printer-friendly PDF versions) as follows:

1. Monsanto contract: www.gmfreeireland.org/conference/trans/exhibits/A.php

2. Monsanto GMO seed bag label: www.gmfreeireland.org/conference/trans/exhibits/B.php

3. Monsanto flyer encouraging farmers to denounce their contaminated neighbours: www.gmfreeireland.org/conference/trans/exhibits/C.php

4. Monsanto "extortion letter": www.gmfreeireland.org/conference/trans/exhibits/D.php

(10)

The mews,
Clonmoyle,
Rathangan,
Co. Kildare
22/03/2012

To whom it may concern,

This is my representation to the EPA regarding the Teagasc notification (G046901 ref. No. B/IE/12/01) ON THE 27/02/2012 FROM Teagasc, oak park, Carlow, for the proposed deliberate release of GM potatoes into the enviroment for purposes other than placing on the market i.e to preform a field trial.

The reason for this representation is because i feel that 28 days for responding to a 35-page technical document is too little, especially for people who are not familiar with the topic and who therefore need additional research time. Also the time span is much to short for any organisation who wishes to engage in meaningful consultation with its members.

Under the Aarhus Convention on Access to Information Public Participation in Decision-making and Access to Justice in Environmental Matters, people in Ireland have a legal right to information and input into decisions affecting their environment or their health when affected by the environment. The Aarhus Convention, having been ratified by the EU, obliges the Irish government via the Treaty of Rome to ensure those legal rights are upheld.

I feel over all, there has been negligible public participation in decision-making regarding GM crop, GM food or GM feed policies in Ireland since GM crops were first commercialised. An invitation to respond within 28 days to a licence application for a GM trial, in one discrete part of a GM policy and regulatory system, does not fulfill the information and input rights specified in the Aarhus Convention.

The application states (F.1) "the purpose of this release is to" and then describes 3, the third of which states:
"employ the project's resources as a tool for education and demonstration in order to proactively engage and discuss the issues that most concern stakeholders and the public at large in regards to the cultivation of GM crops in Ireland".

In other words, one purpose of the trial is to enlighten people in Ireland AFTER the GM pototoes have been planted. These plants by their nature can reproduce themselves (potatoes do so both vegetatively and sexually, by tuber and seed) and therefore can spread uncontrollably so that they are un-recallable if later problems arise. Ihope that you will take our view (the people of Ireland) into consideration while deciding on this application.

yours sincerely,
Julie Smyth

Julie Smyth.

(11)

TRANSITION KERRY FOOD SECURITY GROUP

SUBMISSION TO THE EPA

RE:

NOTIFICATION (G0469-01, REFERENCE NO B/IE/12/01) ON 27/2/2012 FROM TEAGASC, OAKPARK, CARLOW

FOR THE PROPOSED DELIBERATE RELEASE OF GM POTATOES INTO THE ENVIRONMENT FOR PURPOSES OTHER THAN PLACING ON THE MARKET IE; TO PERFORM A FIELD TRIAL

For the attention of:
The Director
Environmental Protection Agency
EPA Headquarters
PO Box 3000
Johnstown Castle Estate
Co. Wexford

We want to express our very serious concerns about the many economic and environmental problems with the proposed GM Potato trails that Teagasc is seeking permission to carry out in Ireland. GM Potato trials were rejected by Ireland in 2006, they should be rejected again in 2012.

We are not against biotechnology; we are against ill-considered biotechnology. There are several other plant biotechnologies available that are more effective, cheaper and less risky than GM. Such as:

- Participatary Plant Breeding Programmes (PPB) on farm with farmers and growers.
- Marker Assisted Selection (MAS), which is also known as Smart Breeding

We support these technologies, not only because they don't pose the health and environmental risks of GM crops, and also because they are cheaper, which makes it easier for public institutions to use and involve growers and farmers.

What we want and need to see from now on is a substantial shift in the research and development agenda of Teagasc in Ireland and Europe. The EPA and Teagasc, as a research institution, must acknowledge the market failure of GM crops and start investing in solutions-based research, firstly in agro-ecology and secondly in advanced plant breeding using modern biotechnologies like PPB and MAS. The majority of citizens of Ireland and Europe want a GM-free Ireland and Europe.

The EPA needs to consider the following issues when deciding on the application from Teagasc:

1. A 10-year moratorium ban on all GM foods being trialed or grown in Ireland – the precautionary principle still applies.

2. Economically – is it not better in the long term to have a premium product which will be Irish Food that is GM free?

3. Study of soil ecology and effects on biodiversity – how is this being measured?

4. Where is the sustainability of GM? – it relies on petro-chemicals, which are increasing in price and have a large carbon footprint. It is very short term vision to intrduce GM to Ireland, even at trial stage.

5. What about consumer choice? – Study after study shows that the majority of people in Ireland and Europe reject GM foods.

6. The fact must be considered that genes interact widely with each other in the natural world they do not act in isolation, and this manufactured (not evolved) gene may react differently with other genes in the plant once released. Gene science is not straight-forward, it is not one gene – one trait. Each gene effects multiple traits, and so GM technology may have a lot of unexpected and undesirable impacts.

7. Organic potato cultivation has been shown to impact beneficially on soil organisms and we add our voice to IOFGA and other organisations to call upon Teagasc to also conduct research in this area.

8. There are GM free zones in Ireland, and buffer zones cannot be relied upon

These proposed trials are coming at a time when an increasing number of countries are imposing restrictions (e.g. China, Austria, Hungary) or outright bans (e.g. Peru, Greece) on GM crops. The reasons for these restrictions are:

- the risks of contamination of conventional crops, including organic crops: the proven threat of GM to health, biodiversity, and the impacts on soil, water and traditional seed strains, pollinating insects and wildlife
- the loss of control over national farming systems through the patenting of GM seed strains by multi-national companies, and increased reliance on their associated products, such as herbicides.

Precautionary Principle:
It may be some years since the last application for GM potatoes to be grown in Meath, but the precautionary principle still applies. We should not trial any GM crops in Ireland, unless it can be proven beyond all possible doubt that there will be no harm to our biodiversity, ecosystems or food chain.

Therefore we are calling for a 10-year moratorium on the trialing or growing of GM foods in Ireland.

Ecconomic reasons to keep Ireland GM free
Ireland has the huge potential of using our island situation to promote ourselves as a GM free sustainable food nation. We already promote ourselves as the clean green island. This is our biggest selling point, for exports and for the home food and tourism industry. This clean, GM free image leads to real employment and real sustainable agriculture. Other countries are suffering from the commercial release of GM crops (soy, canola). Once released, they cannot be recalled. This has serious economic implications for our country which is already suffering through a difficult recession.

Recently BASF, the biggest chemical company in the world, decided it is moving to the US because Europeans don't want its genetically engineered potatoes. BASF said the move was a business decision based on the acknowledgment of the market failure of BASF's flagship crop, the antibiotic-resistant potato Amflora. After the enormous political and media coverage Amflora turned out to be a commercial flop! Do we want the same future for Ireland?

Market Rejection of GM foods
The market for GM food is shrinking, not expanding. These proposed trials are coming at a time when an increasing number of countries are imposing restrictions (eg. China, Austria, Hungary) or outright bans (eg. Peru, Greece) on GM crops.

According to the latest official figures 70 percent of European citizens find GM crops 'unnatural' and 61 percent of them oppose the development of these crops. And let's not forget that Greenpeace twice gathered one million signatures against GM crops and that several EU member

states have banned the only two GM crops authorised for cultivation in Europe.

Denmark is seeking the right to all European countries to decide for themselves whether or not they choose to allow GM cultivation in their own country. We support this right to choose.

Food Standards
Bord Bia have recently had a marketing campaign – with the logos '*we are natural and can prove it*' and '*sourcing from Ireland means sourcing sustainably*'. This will not be the case if we allow the trials go ahead. Bord Bia are aiming to increase our exports of food by 40% in the next decade – these trails will be detrimental to this, as our 'clean, green' image will be tarnished. They also state that sustainability and sustainable agriculture offer the biggest opportunities in the 21st century. We believe this will only be so if we pursue really sustainable agriculture, which will not include GM. Bord Bia are the food promoters and Teagasc are the among the educators of food growing in Ireland today, one would assume that they should have similar aims with the future plans for food in Ireland.

Research into blight resistance:
'Blue 13" blight, which is the current strain of blight infecting Ireland, is not damaging growers of the potato 'Sarpo'. The variety Sarpo was vertically bred without GM. So if we want to stop the use of chemicals and plant blight resistant potatoes, we need to carry out more trials in this direction. We could have potatoes that require none or little chemical spraying that would suit crisps (25% of the harvest) and the retail market.

GM anti-biotic resistance:
There is much being made that these GM potatoes do not have antibiotic markers. The antibiotic used in GM is so weak and unfortunately we here in Ireland are now so antibiotic resistant that it would make no difference.

The submission states that these potatoes are cesgenesis, that is that the genes conferred are from the same species. BUT PLEASE remember that no matter how it is described this is the horizontal transfer of genes, i.e. Genetically Engineered, as opposed to vertical transfer, i.e. me and you and the rest of nature!!

Environmental and Biodiversity Issues:
The buffer zone 'barrier' being proposed by Teagasc is 40m. The majority of natural scientists we have consulted would say that there is no realistic barrier, as we cannot control what goes out into nature. And we have no idea of the effects of horizontal gene flow, and by the time we do – it will be too late.

GM release is a threat to all of this and to our biodiversity, our food and our nature. There is a very interesting study from Switzerland released two weeks ago on 2 spotted ladybird and BT toxin. They proved that GM plants can have a dangerous affect on secondary species feeding on aphids.

We, the undersigned, represent the Food Security Group within the Transition Kerry Network. We are growers, consumers and concerned citizens. We call on the EPA to reject this application by Teagasc and we further demand that there is a moratorium of minimum of 10 years before any trials can be carried out in Ireland. We also demand that State and European funding for research should prioritise the open pollinated and participatory/smart breeding techniques, that will enable

Irish growers to ensure the sustainability and safety of our valuable heritage and image as a 'clean green' island' and food producing country for future generations.

sinne le meas:

This is a joint application from the following individuals and bodies:

Transition Kerry Network

Food Security Group, Transition Town Tralee

Cathy Eastman, Kerry Earth Education Project: Local Educators

Ian McGrigor, Local Organic Farm

Niamh Ní Dhúill, Organic Grower

Thomas and Claire O'Connor, Manna Organic Store: Local Retailers

Justin Keane, HandEye Design, Local Media and Graphic Design Business

Derek Berrill, Local Grower

Con Horgan, Local Artist and Entrepreneur

(12)

EPA Headquarters
PO Box 3000
Johnstown Castle Estate
Co. Wexford

Claudia Dallek
Cullenagh
Kealkill
Bantry
Co. Cork

Cullenagh, 23rd of March 2012

Re:Teagasc's application for a licence to grow GM potatoes at Oakpark

To whom it may concern,

Firstly I would like to make the point that the time span of 28 days for responding to the application made by Teagasc was not sufficient to get adequate amount of research done into the matter as I do have a day job and am not used to reading technical texts like the one submitted by the applicant.
Maybe a total of six weeks may have been more adequate.

But now I would like to make my concerns about the application known.

On page 9 of the application (B.3.(b)) Teagasc states clearly that potato volunteers in surveyed fields did occur and were dealt with through the application of herbicides. This 'significantly reduced the number of recorded volunteers observed in the rotation'.

I am not satisfied that this method will actually stop any GM volunteers from spreading from the testing site in Carlow or surviving into the future as a significant reduction does not mean viable control bur merely a reduction in spread. No data seems to be included that involves a long-term study of the 34 commercial fields surveyed by Teagasc and in my own case potatoes I've planted in my garden 3 years ago are still turning up as weeds, regardless of the severity of the winter 1 1/2 years ago.

In the next paragraph of the application (B.3.(b)) the seeds are described as dropping off before harvest and lying on the soil surface. These may well be easily controlled by mechanical cultivation or herbicide application but there is no mentioning of the fauna interacting with the plants in a field trial.

Rodents may eat and spread the seed, other animals like birds, foxes, badgers or livestock invading the fields may drag the berries far across the boundaries of the trial where they would not be controlled but be free to germinate.

Teagasc does mention that a fence will be in place to keep at least larger animals out but that does not mean that holes in the fence may not occur during the growing season.

On page 10 of the application (B.4.(a)) Teagasc admits the possibility of pollen spread through pollen beetles of 1000m, even though none of these may have been present at the time of previous dissemination trials. It does not mean that there are no beetles present at the site this year.

On several occasions the application mentiones that the trial potatoes will be kept separate from other potatoe varieties by a distance of 40m. This is clearly not adequate if the pollen beetle is proven to travel up to 1000m.
I understand that the potato plants growing from seed are weak and not well equipped to

compete with weeds but in the end you only need one plant to survive and form a tuber. The plant can then reproduce strongly and let the modified genes 'escape'.

Under B.7. (page 11) the application mentions a number of sap-sucking insect pests harming potato plants like aphids and leaf hoppers. There does not seem to be any data available about the possibility of gene material being transferred from GM crops to non-GM crops through the activities of these insects. If the sap of the modified potatoes went into the sap of ordinary potatoes, some of the modified gene material may end up in the tubers of conventional potatoes, spread through them and possibly even end up in the food supply.

On page 24 (G.1.) the application mentiones that all machinery used during the cultivation of the plants will be cleaned appropriately but nothing is mentioned about the people working and visiting the site a number of times per week. Will they have to wear overalls when approaching the GM lines? Will these be taken off and disposed off before any other crops are approached? What about the shoes they wear? Nothing is mentioned on how Teagasc proposes on minimising the risk of seed transferral through people working on the site.

I am not satisfied from the application that Teagasc provides enough data to be in a position to control the gene material from spreading.
Especially as it is mentioned on page 26 (G.4.) that Teagas does not plan any additional pollen flow studies that could actually show any pollen spread from the site.

On page 18 (D.4.(b)) states that 'The Rpi gene transformed into *S. tuberosum* cv. Desiree confers decreased susceptibility to *P. Infestans*.' This does not mean that the plants are not affected by the blight but simply less affected.

As there are already ordinary potato varieties available (Sarpo Mira and Bionica as mentioned on page 20) that are already a lot more resistant to potato blight the development of a resistant tuber using GM is obsolete.

A main problem with *P. Infestans* lies in its ability to develop new strands making it hard to develop a potato variety that stays resistant. Even though the genetically manipulated variety supposed to be used in the trial is resistant against a variety of strains of *P. Infestans* (it is not stated anywhere that it is supposed to work for all strains) it is not clear whether this will remain to be the case or if *P. Infestans* will simply develop a strain not covered under the new gene. In the long run the development of artificial resistance to *P. Infestans* through GM may be a total waste of time and money as not effective for long.

There is no reason to invest in the costly development of genetically modified potatoes, their trials and testing in Ireland if we already have potatoes with good resistance widely available on the market.

On page 19 (D.7.) the application states that 'This Solanum genetic sequence is not expected to exert any toxic, allergenic or harmful effects on animal/human health and/or the environment'. There is no data attached to actually support this statement and I can only assume that no tests have ever been carried out to see if the changed gene material would in fact cause a different reaction. As I am not confident in Teagasc's ability to retain and control the modified genetic material I am worried about any side effects the release may have if it did spread into other potato varieties or other members of the Solanaceae family like tomatoes and peppers. These crosses within a family but outside a genus may

be rare but not impossible. Has Teagasc ever done any research to prove potatoes do not cross with cultivated plants as opposed to wild ones?

On page 21 (E.2.) the farm at Oak Park is described as sloping towards a lake. I am not satisfied that Teagasc is capable of preventing potato seeds from being washed from the field into the lake and possibly across should a heavy rainfall occur in the early autumn (when the seeds are fully mature). The weather pattern of Ireland has changed dramatically over the last years and severe weather changes have occurred including severe storms and flash flooding. I do not believe a site bordering onto a lake is suitable for field trials using genetically modified organisms.

On page 22 (F.1.) one of the aims of the AMIGA programme is to 'Deliver an improvement of knowledge on potential long-term impacts of specific GM crops'. Clearly there is not enough data on the long-term impacts to evaluate whether GM crops are safe in the long run. I do not believe that it is therefore safe or advisable to release genetically modified potatoes into the environment without knowing what the long-term effects would be.

There are enough GM crops being grown in other parts of the world (mainly the Americas) that there is no reason to get Ireland involved at this stage.

The next point reads:'Assess the economic effects of cultivation of GM crops in the EU.' The people all over Europe and Ireland in particular have made it clear time and time again that they are not interested in consuming genetically modified foods. The economic effects can therefore only be yet another commercial flop like Mosanto's GM tomatoes during the 80's.

We don't want to eat it, we don't want to buy it, therefore there is no reason to grow it!

Teagasc own aim as stated on page 23 (F.1.), 'Employ the project's resources as a tool for education and demonstration in order to proactively engage and discuss the issues that most concern stakeholders and the public at large in regards to the cultivation of GM crops in Ireland', cannot be taken seriously.

You cannot use the release of genetically modified potatoes to inform people about the existence of Genetic Modification. People have a right to be informed about what is happening in their environment (especially in the absence of data supporting the long-term safety of the proposed trial) before it takes place. Not during or after. It is outrageously patronising of a government body to assume the trial could act as a means to proactively engage the public.

As a public research body the public should have a say in what Teagasc actually researches.

Instead of researching GM crops it would be a lot more effective if Teagasc concentrated their money and effort into developing the possibility of using mechanical means of controlling the effect of late blight- like cutting the haulms just after the emergence of the first symptoms of late blight and leaving the tubers un-disturbed for a fortnight thereafter. I might not have the biggest harvest of potatoes myself but I am personally not troubled by blight- I manage it!

Yours sincerely,

C. Dallas

(13)

From Thomas & Claire O Connor
of Manna Organic Farm

SUBMISSION TO THE EPA

RE:

NOTIFICATION (G0469-01, REFERENCE NO B/IE/12/01) ON 27/2/2012 FROM TEAGASC, OAKPARK, CARLOW

FOR THE PROPOSED DELIBERATE RELEASE OF GM POTATOES INTO THE ENVIRONMENT FOR PURPOSES OTHER THAN PLACING ON THE MARKET IE; TO PERFORM A FIELD TRIAL

For the attention of:
The Director
Environmental Protection Agency
EPA Headquarters
PO Box 3000
Johnstown Castle Estate
Co. Wexford

Dear Sir/Madam,

I call for the rejection of this application. I call for a 5 year moratorium on the release of Genetically Manipulated crops into our natural environment.

This is because.

I am concerned about the lack of expertise and knowledge in Teagasc about Organic agriculture and natural farming systems.

I find it very hard to believe that they will set the right objectives for testing all parts of the eco system, especially since they seem to lack the basic understandings of organic agriculture.

Our experience with Teagasc:

Before converting to organics 5 years ago ,we went to Teagasc for advice. We were told we should spread plenty of chemical fertiliser and burn off all the weeds with Monsanto's "Round Up" before we start the conversion period. This would give us "a good start".
As you can imagine my wife and I were very taken back at the serious lack of basic knowledge of organic and natural farming principles and practices. We explained that an organic farmer would not consider using a glyphosphate herbicide on their land - it is a neurotoxin, and has serious effects on the environment, and on those who use it if they are not wrapped up like a spaceman for protection. We never went back.

Last week , I was reminded of that episode in the Teagasc office, after reading the below interview with Dr Ewen Mullins, a senior research officer in charge of GM crop assessment at Teagasc.

GM Potato field trial interview Dr Ewen Mullins.
Interview on the March 9th, 2012, with Dr. Ewen Mullins, regarding EPA application.

Q2: What is the herbicide that you will be using to kill the remnants of the field trials?

A: Glyphosate generic (i.e. Roundup) which is available in every garden/DIY store in Ireland. ***Even organic farmers use it to clear their land prior to conversion.***

It's one thing that a person in a local Teagasc office , new to their job after leaving college, gave us the advice they did.

But to hear Dr Ewen Mullins, a senior research officer in charge of GM crop assessment at Teagasc. repeat the same uneducated and incorrect response was a surprise. We are assuming that this is standard Teagasc advice to farmers and growers thinking about converting their land to organics. This indicates a systemic lack of understanding of an entire section of Irish agriculture; organic farming, in the Teagasc personnel.

This is why I question the present ability of Teagasc to carry out the proper environmental systems analysis. It would seem that Teagasc are only really considering agriculture in Ireland from the viewpoint of intensive industrial agriculture, and are not taking other forms of Irish agriculture into account.

Outdoor field trials of GM crops are high risk projects with the potential to pollute the genetic make up of our living environment, our crops, wild life and our food supply.

This is why I call for the rejection of this application. And why I also call for a 5 year moratorium on the release of Genetically Manipulated crops into our natural environment.

Thomas O Connor

Claire O Connor

Manna Organic Farm
Gleann Na nGealt
Camp
Tralee
Co. Kerry

(14)

The EPA
PO Box 3000
Johnstown Castle Estate
Co Wexford

21st March 2012

Re: Teagasc notification G0469-01, Reference # B/IE/12/01

Dear Sir/Madam,

I wish to object to the above notification by Teagasc to begin open field trials of GM potatoes at Oak Park. There are several reasons for this.

There has been negligible public participation in a debate on the growing of genetically modified crops in Ireland. According to the Aarhus Convention on Access to Information Public Participation in Decision-making and Access to Justice in Environmental Matters, we (the Irish people), have a legal right to information and input into decisions affecting our environment or our health when affected by the environment. This has not been the case here.

It seems that Teagasc intends to begin cultivation and then engage the general public in talks, however once GM potatoes are planted there is no going back. One of the main reasons GM trials were stopped in Britain was the contamination of GM crops was much more widespread than anticipated. Being such a small Island we cannot risk long term contamination/damage to this country which is so well known for being green. The consequences to our farming exports could be disastrous.

In addition long term use of GM crops invariably leads to large areas of mono-cropping as seen in the Americas as well as countries India and Australia. Whenever mono-cropping is introduced, soil quality is diminished and increased used of fertilisers, pesticides and herbicides is required. This results in increased costs for the farmer, reduced yield and a lower quality of produce, not something that will benefit the producers or consumers of Irish produce.

Yours sincerely,

Linda de Courcy

Linda de Courcy, Dip NT
17 Newlands Manor Park
Green Isle
Dublin 22

Friday 23rd March 2012

To whom it may concern,

I object to the Field trial to test gm ~~potatoes~~ 2012 by Teagasc at Oak Park, Carlow.

As I see it there is no advantage to GM crops especially blight resistant potatoes in this country considering the more important status of GM-free Country and the negative effects of these plants breeding in the environment. There is no guarantee of contamination with an exclusion zone.

I enclose my €10 fee for representation to the EPA for proposed GM release

Kind regards.

Sona Liyanage

MISS SONA LIYANAGE
FLAT 6
5 BLOOMFIELD AVENUE
PORTOBELLO
DUBLIN 8

16

SUBMISSION TO THE EPA

From: Piaras O'Brien, 28 Offington Avenue, Sutton, Dublin 13.

RE:

NOTIFICATION (G0469-01, REFERENCE NO B/IE/12/01) ON 27/2/2012 FROM TEAGASC, OAKPARK, CARLOW FOR THE PROPOSED DELIBERATE RELEASE OF GM POTATOES INTO THE ENVIRONMENT FOR PURPOSES OTHER THAN PLACING ON THE MARKET IE; TO PERFORM A FIELD TRIAL.

I wish to oppose the proposed field trial of Genetically Modified potatoes by Teagasc at their Oakpark research facility in Carlow for the following reasons:

- Potato blight mutates constantly so it is likely that the fungus *P. infestans* will also mutate in this GM variety. The likely outcome is increased use of herbicides to control this.
- Research has shown that in the commercial production of GM crops over time a greater amount of chemicals, be that herbicides, fungicides or insecticides are used on the plant. Once the initial benefits are realised they are quickly out balanced as other problems develop in that plant. This ends up being a major problem for the farmer and consequently the consumer.
- The potato variety Desiree which has been chosen for this trial produces large quantities of berries, Teagasc state that these berries are not eaten by rodents due to their "high glycol-aklaloid" levels. However this is not the case and rodents often eat these berries which does have an impact on this trial. Evidence also shows that these berries can survive for up to 10 years in the soil.
- For this trial to be a cisgenic trial (within species boundaries) the plants must be shown to hybridise with each other and present a true offspring. Are *Solanum venturii* and*Solanum tuberosum v. Desiree* sexually compatabile and if not is this a cisgenic trial or a transgenic one?

- Is Solanum venturii edible? If not will its toxicity have an effect on the potato produced in this proposed GM trial?
- Can Teagasc guarantee that once the blight resistance gene is inserted that it will not interact with any other organisms in the plant? We know that in nature (not always in a laboratory) plant cells/genes interact with each other in many different ways therefore it is likely that the inserted gene will interact with *P. infestans* but also with other plant genes, these interactions may not be beneficial.
- Teagasc state the main aim of this proposed trial is to monitor soil health and micro biology however due to the fact that the proposed trial will rotate each year a true representation of the effects on soil life will be difficult to ascertain.
- As this proposed trial and its sister trials are a premarket risk assessment, who will be responsible for placing this GM product on the market if results from the trial are favourable?
- How will the non GM potato crops to be grown "in parallel on the site" be treated? There is no indication of this in the project application.
- What economic value has Teagasc placed on the biodiversity that may be negatively impacted upon as a result of this GM potato trial?

I believe that there are very grave risks associated with proceeding with this trial and I would respectfully suggest that to do so would be irresponsible on the grounds that any damage caused will be irreparable and will not only negatively affect the environment, but also the reputation of Ireland as a clean and reliable source of agricultural produce, thereby jeopordising the potential to maximize agriculture's significant contribution to the economy.

Yours Sincerely,

Piaras O'Brien

(17)

Curnicarton, Kilmaine,

Claremorris

Co. Mayo

Tel: 093 33050

21st March, 2012

Re: Notification to the EPA under section 16(1) of the Genetically Modified Organisms (Deliberate Release) Regulations, S.I. No 500 of 2003 from Teagasc re GMO Potato trial at Oak Park, Co. Carlow dated 27th Feb 2012. Ref No. B/IE/12/01 GMO Register No. G0469-01

I am writing to lodge an objection to the above-mentioned research. I believe the risks far outweigh the possible gains of this trial. I object for the following reasons:

I do not believe that this trial will be sufficiently isolated from other crops. The distance from other crops is not enough to prevent cross-contamination. The use of the word 'cisgenic' implies that it is not transgenic, but this has been proved to be also liable to cross-contaminate.

The organism which causes blight, Phytophthora Infestans, is able to evolve extremely quickly, and therefore any genetic modification would also have to be developed constantly to keep one step ahead. I believe other methods being developed to combat blight , for example, work on Sárpo, are likely to prove far more successful.

I believe that we have been given insufficient time for consultation and adequate discussion of the issue. This must surely result in a dearth of information within the public realm, and therefore may risk contravening the Aarhus Convention.

Further, any claim that the trial will raise awareness or educate people about GM is tantamount to closing the door *after* the horse has bolted. Any negative information gained will come too late if accidental contamination or negative findings arise.

The danger of cross-contamination is very real, and crucially, irreversible.

This variety only has one resistance rather than multiple resistance genes, in other words, there are minimal benefits to this trial in terms of data gathering.

The application states that there is no involvement by the biotech industry and that it is funded by AMIGA, an EU-funded programme. However, participants in AMIGA work also have links to networks and consortiums which are fully or partly funded by agri companies.

Indeed, the patent for the 'product ' in question is part owned by two authors of Page 11 of the Teagasc application. However, to the best of my knowledge, they have so far not signed conflict of interest statements.

Trials have already been carried out in other countries on similar lines. But now some countries have introduced bans on GM crops, including Hungary, Peru , India and several states in USA, because of safety concerns, environmental impact, negative consumer sentiment and issues around corporate control of patents.

Once carried out, this trial will mean that Ireland will no longer be GM free – losing a valuable selling factor for our food exports overseas. Public opinion is a major factor in this. Ireland relies heavily on its agricultural sector; food production constitutes 46% of our GDP, and around 80% of our exports. (http://www.tradingeconomics.com/ireland/exports) This has the potential to increase with rising food prices at global level. I would argue then, that our current economic conditions surely require us to expand , rather than risk, the reputation of our agricultural sector.

Currently Ireland "produces enough food to feed 36 million people" and "one in six infants now feeds on formula produced in Ireland", according to the Irish Times, June 27th 2011. (http://www.irishtimes.com/newspaper/finance/2011/0627/1224299635119.html). Increasingly our exports go to the Asian markets, who themselves have shown concern about GM crops. China has placed a five year moratorium on growing GM rice and wheat, amid concerns that GM has led to increased use of pesticides and the development of so-called 'superweeds'.

In conclusion, I believe that there are sufficient grounds to preclude Teagasc from commencing their research.

Yours sincerely

M. Sheehan

Ms. Margaret Sheehan

Enc.

(18)

Marian Harkin MEP

Constituency Office: 28 Emmet Place, Union Street, Sligo
Tel: 00 353-71-9145888/45890 Fax: 00 353-71-9141973
e-mail: marian@marianharkin.com
Website: www.marianharkin.ie

23 March 2012

EPA
P.O. Box 3000
Johnstown Castle Estate
Co. Wexford

To whom it may concern

Further to notification (G0469-01 Ref. No. N/IE/12/01) for the proposed deliberate release of GM potatoes into the environment for the purposes of a field trial, I wish to object to this field trial.

Ireland is noted for it's GM free status and a field trial such as this will have far reaching consequences for the Irish food industry and indeed the environment and will undermine Ireland's reputation for clean, green GM free food.

While I realise the EPA is the competent authority, this field trial will have such grave implications I believe such decisions, if they are to be taken should have the endorsement of Dail Eireann.

Marian Harkin

Marian Harkin MEP
Ireland North and West Constituency

The Director
Environmental Protection Agency
EPA Headquarters
PO Box 3000
Johnstown Castle Estate
Co. Wexford

(19)

Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01);

We would like to have our objection heard to Teagasc's proposal to carry out field trials of genetically modified potatoes in Ireland. We are seriously concerned as to the effects genetically modified plants will have on our livelihood as organic growers, on our biodiversity, on our soil, on our food, on our heritage seeds and on our environment.

These field trials are being carried out a time when an increasing number of countries are imposing a total ban on genetically modified plants (Peru and Greece), while China, Hungary and Switzerland have imposed restrictions. It strengthens our concerns to see other countries identifying and acting on the threats of introducing GM crops into a country.

We feel that the introduction of the first GM food crop into the island of Ireland will set a dangerous precedent and threat to the future of food security and quality. If one crop is introduced, it is probable that more GM crops will be introduced in the future which have a higher rate of cross-pollination and contamination, thereby threatening our entire seed crop varieties. This is particularly concerning as we're a small country and controls would be impossible.

Already in 2006 BASF has proposed trialling GM potatoes in Ireland, but was deterred by public opposition. It seems likely that commercial exploitation in Ireland is the intended outcome of the current trial programme. This would pose major risks for Irish farming. We assert that the proposed trials should be the focus of a full public and political debate before going ahead. And if not in Ireland, we ask why the Irish taxpayer is being asked to fund the research without proper public consultation?

The policy decision against GM involvement taken at Government level in 2009 was explicitly in support of Ireland's interests as an exporter of high-quality food *"To optimise Ireland's competitive advantage as a GM-Free country"* (Renewed Programme for Government, 10 October 2009, p.11). Given the continuing substantial resistance to GM foods among European consumers, (cf eg *Eurobarometer 341, Biotechnology),* abandoning this policy would seriously damage our foodexporting prospects.

There is also of course the very real potential that even with the best intentions (reduced fungicide spraying through resistance to the blight pathogen.) GM has proved to be unpredictable and to come with unintended consequences.

On the following pages we have outlined our legitimate concerns on behalf of ourselves as horticulture students and as concerned citizens. We call on Teagasc to immediately reconsider their plans to carry out any such trials. We also request that they instead contribute their research to support open pollination and participatory breeding that will enable Irish farmers to safeguard our precious heritage and food for future generations.

Yours Sincerely,

Horticulture Students as listed on the signatories page

Outline of Issues

There are numerous reasons this trial is not welcomed:

(1) Ireland's reputation as GM free zone and the opportunity this represents to our food industry

(2) The potential threat of contamination of conventional and organic crops by GM crops

(3) The dangers to biodiversity of growing GM crops

(4) The loss of control over national farming systems through the patenting of GM seed

(5) Health concerns and lack of testing on the safety of GM foods

(6) The necessity of wider public consultation on introducing GM crops to Ireland

(7) GM as an ethical issue

(8) The availability of non GMO blight resistant potatoes

These issues will be explored in more detail in the following pages.

Issues in Detail

(1) If the EPA allow Teagasc to go ahead with the trial, Ireland's reputation for safe, GMO free food will be terminated. As an island the opportunities of marketing Irish food as credibly GM free is a massive opportunity, while mainland European countries run the risk of contamination of GM plants through pollination. This approach would provide untapped opportunity into an area of the food market where food can achieve a higher market value. As Bord Bia adverts state "We are natural and we can prove it".

(2) Genetic Modification is industrially irresponsible. There are usually no safeguard or control on a product after a field trial. No matter how carefully trials are supervised there remains a risk of contamination of conventionally grown crops, and organic crops. Once a GM crop has been sown, there are no guarantees that the spread of GM seed can be controlled. They can and have been often known to cross pollinate with non-GM crops and ruin organic and conventional crop varieties. As has been seen to happen in Canada with Rapeseed, Mexico with Maize and elsewhere, GM companies are not taking responsibility for the spread of their unwanted seeds. We are concerned about how non-GM growers will be protected against future GM patent owners .

Arnold Taylor, Chair of the Organic Agriculture Protection Fund said: *"There is no organic canola in Canada any more, virtually none, because the seed stock is basically contaminated... we've lost that crop"* (GM Canola'contaminated', Canadian Farms, The Age.com.au, July 5, 2011). Perhaps one of the best known cases of genetic pollution is the case of Percy Schmeiser, a Canadian Canola seed grower, whose crop was contaminated by Monsanto's Round-Up Ready Canola. Rather than taking responsibility and paying Percy for the contamination of his crop in accordance with the "Polluter Pays" principle, Monsanto sued Percy for "Intellectual Property theft." The contamination of the canola crop in Canada is so thorough that 90 percent of certified non GM Canola seed samples contain GM material *(www.lynnmaclaren.org.au/media-release-major-graintraders-reject-gm-canola).*

Teagasc's trial plot is unacceptably close to its own non-GM plantings, and to the farmland of three of Ireland's declared GM-free counties. The right of a region to remain free of GM crop contamination is enshrined in European legislation. Buffer zones have been proven not to work effectively, even when they are several kilometres.

GM crops carry the real possibility of contamination of organic and conventional crops. This may be permanent damage as we cannot recall GM genes that pass into the wild.

(3) There has been much research to suggest that the growth of GM crops poses a potentially very serious threat to biodiversity. Only in the last few weeks it's been proven by researchers from the Swiss Federal Institute of Technology (ETH) in Zurich that GM plants can have an dangerous affect on secondary species feeding on aphids. In this case the victims were ladybirds who fed on aphids who fed on GM Bt maize. [Hilbeck, A et al. 2012. A controversy re-visited: Is the coccinellid *Adalia bipunctata*adversely affected by Bt toxins?*Environmental Sciences Europe* 2012, 24:10 doi:10.1186/2190-4715-24-10]

A 1999 Nature study demonstrated adverse effects on monarch butterflies from eating leaves which were dusted with Bt corn pollen. [J. Losey, LS. Rayor, M.E. Carter. "Transgenic pollen harms monarch larvae" Nature vol 399. May 20 1999].

(4) If these GM potatoes become standardized in Ireland, non-GM growers won't be able to compete in the market if it is flooded with GM potatoes. They will therefore will be forced to grow these cheaper varieties, thereby creating a GM monoculture. This will mean a loss of our diverse potato seed varieties, and if there are any adverse affects in the future it will be too late to go back to our original heritage varieties.

GM reduces the independence of family farms for there will be a loss of right to save and plant own seeds if GM seeds are patented. The possible introduction of a "terminator" gene further reduces the range of seed options. Organic licenses and certification will be threatened and may be lost. We should be supporting bio-diversity not monoculture in Ireland. Especially not a multi-national controlled monoculture based on GM seed patenting.

(5) The lack of adequate testing on the effects of GM foods on human health should be reason enough to prevent GM foods being placed on supermarket shelves. But it's not. The process of creating genetically modified food involves bacteria and viruses being used to invade the plant gene which have never been in the human food supply. There's serious concern over use of antibiotics in GM production causing less resistance to diseases and affecting our immune system.

In other fields, for example in the development of new drugs, many years of research goes into developing the drugs and ensuring their safety . Genetic modification is only a recent development and therefore cannot have gone through serious scrutiny as to its affects on human health.

(6) There has been no visible democratic process in allowing these trials to happen. The public at large has not had access to information regarding the issue of bringing GM crops to Ireland.There has been little information made available to the general public about what the project is proposing. This issue should have been open to political discussions as it concerns everyone, not alone the farming community. Most consumers do not want GM foods. There is strong opposition in Europe – a poll of European citizens conducted by the European Commission show that the majority of Europeans do not want GM food [Eurobarometer]

(7) GM is an ethical issue, which raises the enormous question - do we have the right to play the role of God and play around with the building blocks of nature? Nature cross breeds naturally and has done so successfully for centuries without our interference. However while nature only cross breeds within its own species, Genetic Modifiation goes beyone nature's boundaries and crossing different species, genus and life forms with each other.

It involves forcing a gene from either another kingdom (e.g. bacterium to soy, plant to animal), from another family, or within single species into the nuclues of another organism. This is an impossibility outside the laboratory. Thre result of which is likely to create unknown and unpredictable effects in the host's DNA.

(8) There are already several breeds of blight resistant irish potoatoes that have been achieved through participatory traditional breeding methods and perfectly adapted to the wet Irish climate. For example the Sarpo mira on which these trials are being conducted which is derived from Hungarian potato strains, and others. The not-for-profit Sarvari Research Trust in Wales breeds a range of Pi blight resistant potatoes including Sarpo varieties and is carrying out continuous breeding experiments on the Sapro mira potato.

Signatories
Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01)
Representation by the Horticulture Students as listed below;

NAME	SIGNED	ADDRESS & DATE
Sean Hurley	Sean Hurley	30 Thomas St, Kiltimagh, Co Mayo
Catherine O'Rourke		Lurgan, Milltown, Ivan Co. Galway
Alex Lavarde		Ballyglass, Claremorris, Mayo 21.03
Kelan Hughes		Ballyglass, Claremorris Mayo
JACINTA GREENE		Clogher, Claremorris, Co. Mayo
Remy Guillot		Gortaphuil, Ballyglass, Claremorris Co Mayo
Aoife McNulty		13 College Woods,
JOSEPH REILLY		Lehinch, Hollymount, Co. Mayo 21/3
STEPHEN DONOGHUE		Toumoheady, Co Mayo 21/3
NOEL FORDE		WESTPORT ROAD CASTLEBAR 21/3
Jeremy Browne		Villa Nova, Errew, Castlehill Ballina, Co. Mayo.
		4 Prospect Ave, Westport 21/3/12 Co Mayo

Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01);
Representation from the Mayo Organic Group and other Concerned Citizens

LIST OF ADDITIONAL SIGNATORIES

NAME	SIGNED	ADDRESS & DATE
M. McNULTY	Marian McNulty	11 Meadow Walk, Kevinsfort
Emer McNulty	Emer McNulty	11 Meadow Walk, Kevinsfort
Sean Hurley	Sean Hurley	30 Thomas St., Kiltimagh, Co. Mayo
Catherine O'Rourke	C ~ e	Curgan Mill Town Tuam Co. Galway
Aoife McNulty	Aoife McNulty	13 college woods, Balla.
Rémy Guillot	[illegible]	Gortaphuill, Ballyglass, Claremorris Co. Mayo.
Alex Lavarde	[illegible]	Ballyglass, Claremorris, Mayo

(20)

Mountain Farm

Killanure

Mountrath

Co. Laois

GMO register No.G0469-01

Objection to Teagasc application to plant GM potatoes in Oak Park Carlow

1 .This action could destroy Ireland's image as a safe GM free island and cause an adverse market reaction to Irish agricultural produce.

2. Genetically modified organisms are "intellectual property" and cannot be used without the consent of the owner. It prevents farmers from saving their own seed .By going down this road we would be giving the owner control over our food supply

3.The blight resistance gene involves a patent that is owned by a group of scientists which includes two authors of reference 19(page 11) in the Teagasc Application. Conflicts of interest statements have not been made by the two patent holders .Yet they stand to benefit from acceptance of the GM potato.

4.The European Court of Justice decided in September 2011 that pollen of genetically modified plants (GMP) contained in honey counts as a food ingredient and requires authorisation. One of the consequences of this "reclassification" is that honey containing pollen of GMPs now falls within the scope of the regulation on GM food and Feed. As a consequence, honey containing GM pollen can be placed on the market only if the GMP in question has been authorised as a food ,and labelling requirements are observed. All unauthorised GMPs are subject to the zero tolerance policy. This GM potato has not been approved as a food

http://ocs.jki.bund.de/index.php/GMOhoney/GMOhoney

(Federal Ministry of Food, Agriculture and Consumer Protection)

5. On page 27 of the Teagasc application

"Methods and procedures to protect the site" are all very commendable however recent thefts from the facility show that it is not secure. Someone was able to enter the site and remove 3 beehives over two separate visits .If it is possible to remove 18inch square boxes full of honey bees and then return for another one it is possible for someone to remove a potato.

http://www.carlow-nationalist.ie/tabId/369/itemId/13948/Sport/SportsBlog.aspx

6. on page 23 of the Teagasc application "critically there is no involvement by the ag-biotech industry in the proposed field experimentation in oak park" .However this project is part of the EU-funded AMIGA programme participants in AMIGA are also members of other potato and blight related networks+consortia . Many aspects of these are funded partially or fully by biotech companies Syngenta, Du pont, Certis, BASF, Bayer, AVEBE ,Dacom, Dow ,Germicopa.

7. There are serious questions to be answered about conflicts of interest relating to the European Food Safety Authority's GMO panel experts who approved the gmo potato .

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8. There is no way that Teagasc can guarantee full control over this trial ,Pollen is going to be blown on the wind and carried by pollinating insects.

Sincerely yours

Derek Banim

(21)

Mountain Farm
Killanure
Mountrath
Co. Laois

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Derek Banim

Secretary of the Dunamaise Beekeepers Association

22

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Killanure

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Sincerely yours

Derek Banim

On behalf of the Laois Environmental Forum

(1)

(23)

Aughrabehy,
Brigna,
Co. Roscommon.
23-3-2012

Re: Notification (G0469-01, Ref No: B/IE/12/01) on 27/2/2012 from Teagasc, Oakpark, Co. Carlow.

To Whom it Concerns:

I, Bridget Foy wish to object to the proposed trial of GM potatoes at Oakpark, Co. Carlow, on the following grounds:

(1) It is well known and accepted that potato blight constantly mutates. Therefore, it is likely

that the fungus P. infestans will also mutate in this GM variety The most likely outcome from this is the increased use of herbicides to control this.

(2) The potato to be used in this trial, Desiree, is known to produce lots of berries. While Teagasc states that rodents do not eat these berries, this is not the case. Rodents do in fact eat these berries which will impact on the trial.

(3) Ireland's clean, green image. It is generally accepted that consumers do not want GM foods. Will Irish food have the

same image internationally when news of these trials become known? I think not.

(4) Research has shown that over time a greater amount of chemicals is needed to keep the crop healthy. This leads to residue in soil and indeed in the crops. How long will these residues reside in the soil?

(5) Has any assessment been proposed of the effect on crops and grassland in the immediate area ~~been~~ of this trial?

(6) How will non GM potatoes growin in the area be affected?

(4)

As is well known from Canadian America cases GM organisms do not recognise farm boundaries?

(5) Has any study been done on the potential negative effects on local flora and fauna?

(6) For several years now I have been growing Sarpo potatoes here in Roscommon. Even in the last 2 very wet Summers they did not get blight. They were bred in Hungary to be blight resistant. Therefore I suggest that these trials are unnecessary and pose unneeded threats to Ireland's land mass

Yours sincerely

Bridget Tony

(24)

Flat 4
27 Wellington Road
Cork

The EPA
PO Box 3000
Johnstown Castle Estate
Co. Wexford

23 March 2012

Dear Sir/Madam

I wish to register my objection to Teagasc's application to carry out a field study on GM potatoes.

I have grave concerns about the genetic modification of Irish food crops. These include: contamination of non-gm crops, monopolisation of seed supplies and the threat to the existing diverse range of potato varieties current in Ireland. The introduction of GM field trials would also serve as a distraction from research into organic growing methods.

As well as the points mentioned above, I believe the strongest reason for not allowing this trial to go ahead is simply the damage it will cause to Ireland's reputation as a producer of natural food that has diversity and character and has not been tampered with in factories or laboratories. This is a matter of perception and regardless of the detail of this particular trial – this is a GM crop in an Irish field and we will be squandering the opportunity to present Ireland as a producer of great food. Ultimately there is no going back once GM crops have been introduced to Irish fields and I strongly believe that a moratorium is the best course of action until the consequences of such trials are properly debated by the Irish public.

Yours sincerely

Ruth Fortune

Ruth Fortune

€10 fee attached.

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Westmeath Environmental Group

Hightown, Coralstown, Mullingar, Co. Westmeath. Tel: 044-74798 Fax: 044-74798
Mobile: 085 - 838 - 25 - 55. E-mail: weg1@eircom.net.

Re: Teagasc application to grow G.M. modified potatoes in a trial in Co. Carlow.

The Westmeath Env. Group unanimously request that the E.P.A. refuse a license or permit on the following grounds.

1. Despite the efforts of European Union officials it is clear that the majority of people in the Union do not want G.M. crops of any kind. The position within Ireland is the same. The E.P.A. should take the clear wishes of the people seriously.
2. The development of G.M. crops is purely for the profit and control of seeds and patents. No one else can gain. Teagasc has no business assisting mercenary multinational or other private business.
3. The call for experiments of the kind proposed is not for the benefit of Irish farmers/growers but for the information and gain of agribiotech industries.
4. The risk of contamination of other plants and the involvement of insects, invertebrates, small mammals and birds is too great. The E.P.A. must look at the bigger picture.
5. The E.P.A., in protection of its good name and reputation must clearly show that it is not influenced by E.U. officials or business interests. The present weak state of the economy could leave us politically open to coercion. This decision must be made on better grounds.

For. W.E.G. Richard Murphy. P.R.O.

(26)

March 20 2012

Submission by Irish Doctors' Environmental Association (IDEA) regarding Teagasc Field Trial GM Potatoes application to EPA

Major Concerns: The proposal works out of a knowledge base that is outdated and incorrect in which genes, and the whole process of reproduction, is limited to a linear, controllable process. Living systems respond dynamically to their circumstances, both internal and external, for survival.. Emergent properties, inherent in complex systems, describe a fundamental response that is unpredictable according to linear thinking. A certain combination of factors can trigger a totally unexpected result. Both uncontrollable and unpredictable changes MUST be expected when trying to manipulate living complex systems. New fields such as Epigenetics developed because of this unexpected news. They tell us that genes are not by any means the sole carrier or determinants of traits or characteristics of living organisms. It is far more complex and dynamic than we had ever predicted when we first thought we'd cracked the genetic/life reproducing code with DNA discoveries.

It states on p. 19:
This Solanum genetic sequence is not expected to exert any toxic, allergenic or harmful effects on animal/human health and/or the environment.

In terms of human health, possibly the most critical fact is that ingested food is incorporated into people's flesh, organs and bones. It becomes us.
There is already more than enough evidence from scientific studies to show that there are concerns about the unanticipated adverse impacts of GM food on health.
Quote:
If the kind of detrimental effects seen in animals fed GM food were observed in a clinical setting, the use of the product would have been halted and further research instigated to determine the cause and find possible solutions. However, what we find repeatedly in the case of GM food is that both governments and industry plough on ahead with the development, endorsement, and marketing [of] GM foods despite the warnings of potential ill health from animal feeding studies, as if nothing has happened. This is to the point where governments and industry even seem to ignore the results of their own research! There is clearly a need more than ever before for independent research into the potential ill effects of GM food including most importantly extensive animal and human feeding trials. Michael Antoniou, molecular geneticist, King's College London

On another level, allergies are a major concern in many GM food products because there seems to be no fail-proof, system to test for allergenicity from GM foods. Because the system is so complex and with the further mutations and reactions that the cells may undergo due to the GM process, future generations of the crop may start to create new variables which were never conceived of in the lab..
The most basic level of allergens is when using for example the brasil nut gene (to give a more complete protein) into soy DNA. Some people who are very allergic to brasil nuts will not realize that they have been exposed to it by say eating tofu or soy sauce. It will not be on the label. This example gives an indication of the complexity and almost impossible responsibility one takes on when one enters into the area of trying to create a new food which will be incorporated into people's flesh and bones, in a totally new way. When you eat a potato, you expect that you are simply eating a known food however this no longer becomes the case with GM food products.

P 26

Information regarding any unexpected occurrences of relevance regarding potential adverse effects on the environment and/or human and animal health directly related to the GM potato lines will be communicated to the EPA without delay and required measures will be implemented accordingly.

Surveillance becomes so complex and multi-dimensional that there is not a fool-proof system to test or observe all the possible impacts that GM food products could have on health. If it took decades to comprehensively link smoking tobacco to lung cancer, and that was a very simple, clear and direct connection, how and who could possibly link human and/or animal health anomalies and problems directly to a GM food? Dealing with living systems, they can mutate or create unanticipated emergent properties that are beyond our present capabilities to monitor. And adverse anomalies may present in further generations due to a disturbance.

This debate is already raging in the US and other countries, where they have been growing and eating GM food for years, creating some very serious concerns but no mechanisms with which to deal with them. And even if Teagasc could , what measures could be implemented accordingly? Science does not have answers to these questions.

We just do not understand at all, what we are getting into, but we do know that once we release these GM organisms into Nature, we will not have any control over how they behave. A critical difference between working with mechanisms and living systems is that: You cannot direct a complex, living system– you can only disturb it.

In light of this the following becomes redundant:

p.29

6. Possible immediate and/or delayed effects on human health resulting from potential direct and indirect interactions of the GMHP and persons working with, coming into direct contact with, or in the vicinity of the GMHP releases

The cisgenic line A15-031 is equivalent to the conventional potato cultivar Desiree with the exception of the presence of the Rpi-vnt1.1 gene. Conventional potatoes already possess Rpi genes that have been overcome by the pathogen. The Rpi-vnt1.1 is derived from the wild potato species S. venturii and there is no evidence to suggest that this cisgene, or any other Rpi genes that exist in conventional potato varieties exert any toxic or allergenic effects to human health. The impact on human health is therefore negligible.:

P 20.:

10. Potential changes in the interactions of the genetically modified higher plant with non-target organisms resulting from the genetic modification.

The reaction between the Rpi genes and the corresponding avirulence factors of P. infestans are highly specific29. Due to this level of specificity between host and pathogen no effects on other organisms other than P. infestans can be expected by the release of the determined cisgenic plant material. It is hypothesised that the reduced fungicide treatments, which are planned as part of the experimental research of the intended release, will impact on levels of biodiversity across the plot. This will be investigated over the course of the notification, with specific emphasis on soil microbial populations.

There is so much evidence found worldwide to demonstrate the emerging problem of superweeds that are playing havoc with the local agri-ecosystem.

P 29:
Due to the specificity of the host's response, no effects on other organisms than the target pathogen are expected, other than those that apply to the interaction with conventional potatoes under standard management practises. It is expected that there will be an impact on non-target organisms that are typically targeted by standard fungicide programmes.

The following excerpts from the Teagasc submission document would seem to also be contrary to the present understanding of complex/living systems that is based upon principles of dynamic and responsive growth, a holistic integration as well as interdependent relationships, both internally and externally (environmentally) to organism.

p.29:
7. Possible immediate and/or delayed effects on animal health and consequences for the food/feed chain resulting from consumption of the GMO and any products derived from it if it is intended to be used as animal feed.
Cisgenic potatoes produced during this notification will not be used for animal feed purposes. Measures are included in the risk management programme to mitigate the impact of wild animals feeding on the site. Hence the impact on animal health is negligible.
8. Possible immediate and/or delayed effects on biogeochemical processes resulting from potential direct and indirect interactions of the GMO and target and non-target organisms in the vicinity of the GMO release(s).
No effects on biogeochemical processes are expected with the cultivation of the cisgenic line A15-031. This is because the Rpi-vnt1.1 gene has evolved to interact only with P. infestans and hence confer resistance upon the host against the pathogen. The protein produced as a result of the expression of the Rpi-vnt1.1 gene only interacts with P. infestans effector proteins. In contrast to standard potato cultivation regimes, the growing of A15-031 is likely to impact positively on soil organisms and this will be studied during the course of the notification by project staff.

This proposed Teagasc GM potato project is considered to use cisgenic and not transgenic genetic modification, and does not incorporate glyphosates (whose adverse effects are becoming alarmingly apparent, triggering increasing concern internationally). This is using genetic modification methodology and therefore all the concerns regarding the uncontrollability and unpredictability of genetically modifying living systems remain. While it may prove to be more benign than other more aggressive forms of GM, approving this application would open the door to GM, as with it, Ireland will have lost our food crop GM Free status. This would be a travesty to the Irish people.

Yours sincerely,

Juliet Duff,
Irish Doctors' Environmental Association (IDEA), Chairperson

Please find our 10€ enclosed.

(27)

The Federation of Irish Beekeepers' Associations
(Comhnascadh Cumann Beachairi na hEireann)
www.irishbeekeeping.ie

Hon Secretary
Michael G Gleeson
Tel No 046-9541433/087-6879584
e-mail mgglee@eircom.net

Ballinakill,
Enfield,
Co Meath,
Ireland.
23rd March 2012.

The EPA,
P.O. Box 3000,
Johnstown Castle Estate,
Co Wexford.

Re: Submission regarding a notification under the Genetically Modified Organisms (Deliberate Release) Regulations – S.I. No 500 of 2003

Dear Sir,

I am writing on behalf of The Federation of Irish Beekeepers' Associations representing 2,600 beekeepers.

We strongly object to the granting of a licence to Teagasc for the proposed deliberate release of GM potatoes into the environment based on the following.

Hive products are foodstuffs which consumers perceive as a natural product, harvested and selected by bees in the natural environment. Such products are considered wholesome and safe, offering significant health benefits. Irish beekeepers would like to continue offering consumers high quality products which are fully compliant with EU food standards. They are also keen to continue meeting the demands of certain consumers who do not wish to buy products containing GMOs.

The vast majority of Irish consumers perceives GM foods to be unsafe and will not eat foods containing them. Under the recent EU court ruling, honey containing GM pollen must be labeled as such. It is very unlikely that honey bearing such a label would be saleable. Until now, Ireland has been GM-free. Therefore, Irish honey does not contain GM pollen and does not need to be tested to confirm this. However, beekeepers with colonies within 3 miles (or even more, bees can theoretically travel much farther for forage) could possibly end up with GM pollen in their honey. Before beekeepers could sell such honey, they would have to

(1) undergo the very expensive procedure of having their honey tested to prove it contains no GM-positive DNA,

(2) Put their honey through the very expensive process of ultra filtration to remove all pollen, or

(3) label their honey "may contain traces of pollen from a genetically modified organism", which would make it virtually unsalable.

How do Teagasc consider honey from their hives in Oakpark should be authorised & regulated, bearing in mind the European Court decision? What advise are Teagasc offering other beekeepers within a three mile radius of the site of the proposed GM potatoes regarding the labeling of their honey?

A quotation taken from *Hazard of Pesticides to Bees* Avignon (France) September 07-09 1999 by L.P.Belzunces, C Pelissier and G.B. Lewis states that "An analysis of the pollen washed out of the hairs of the bees showed that there was found potato pollen in all bee samples and in one sample potato pollen was the leading species".

Yours sincerely

Michael G Gleeson

Secretary FIBKA

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To whom it may concern,

The food and agricultural sector is worth €16.6 billion to our economy - that's 8% of GDP - employs 150,000 people directly and 250,000 in the wider economy, and supports 128,000 family farms, An EU report found that Ireland is the most environmentally efficient of the EU-27, which is acknowledged by leading farming observers as a huge marketing opportunity to Ireland. In light of the above we, the members of the Finglas community Garden feel that Ireland needs to ensure that farmers produce what consumers want to eat, and the majority of European and Irish consumers want their food GM-free. We feel that a GMfree labeling of Irish food would be good for business and a view that Ireland as the food Island of Europe is a good thing. In contrast the introduction of GM crops into our food systems would be bad for business and Ireland's image as a food growing nation.

Yours,

Joseph Reedy

The Finglas community garden

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Sinn Féin

ENVIRONMENTAL PROTECTION AGENCY
26 MAR 2012

Michael Colreavy T.D.

Sinn Féin
Teach Laighean
Sráid Chill Dara
Baile Átha Cliath 2
Tel: 01 618 3745
micheal.colreavy@oireachtas.ie

Representation to the EPA regarding a notification under the Genetically Modified Organisms (Deliberate Release) Regulations – S.I. No.500 of 2003

The decision to provide funding for GM food trials in Ireland does not make sense to the agricultural industry. 'GM free' food labelling has a massive popular demand in Europe and is also the fastest growing food label in the US. Irish agriculture trades off its clean, green image and any move to disrupt this image could have serious consequences for the agricultural industry. The European Commission Special Eurobarometer indicated that 66% of people in the 27 EU counties consider genetically modified organisms as a worry. GM food is not popular in Ireland either. A survey published on 28 November 2005 by the Irish Institute of Bioethics in its report "Genetically Modified Crops and Food: Threat or Opportunity for Ireland?" revealed that the vast majority of respondents do not trust the government's safety claims on GMOs and oppose their release in Ireland.

- 84% are not confident that the development of GM food and crops is carefully regulated;
- 82% think GM crops pose a threat to the environment;
- 81% believe GM crops cannot safely "co-exist" with conventional and organic crops;
- 78% do not trust scientists and government organisations to provide factual information;
- 77% are opposed to the introduction of GM crops in Ireland, even if carefully regulated and monitored;
- 71% refuse to eat food containing GM ingredients under any circumstances;
- 10% believe that GM foods currently on sale are safe.

A Teagasc sponsored survey found that 60% of Irish consumers said they would not want to eat GM food products even if there were discernible health benefits.

Before there is a licence granted for GM food trials then it is imperative that there is a full socio-economic impact assessment of GM foods in Ireland. There is however increasing awareness of the socio-economic impacts of GM cultivation in Europe. In 2008 EU environment ministers asked the Europeans Commission to deliver "relevant information on the socio-economic effects of the marketing of GMOs, including the socio-economic benefits and socio-economic risks as well as the agronomic sustainability and exchange." Furthermore in 2010, the European Commission launched a proposal which would allow Member States to reject GMO cultivation for reasons other than health and environmental concerns. Experience shows that GM crops have substantial socio-economic impacts. In sum, the data presented indicates that any projected economic benefit of GM cultivation is by far outweighed by the economic costs of segregation of non-GM and GM in seeds, fields, harvesters, mills and in food production.

Sinn Féin
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Sinn Féin

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micheal.colreavy@oireachtas.ie

There are also environmental concerns regarding GM food in Ireland. Evidence from the food industry and farming experiences worldwide, however, shows that the cultivation and trade of GM crops has far-reaching impacts which are not covered by the EU's legal framework for genetically modified organisms. Any test must ensure that there is rigorous testing for the most possible unintended effects of the unpredictable genetic engineering process; in particular, the lack of long-term animal feeding studies. There has been a tendency for companies to manipulate test conditions to get the desired results due to a failure of regulatory agencies to establish test protocols. A peer reviewed scientific paper published in Biotechnology and Genetic Engineering Reviews on 23 November 2004 debunks the myth that genetically modified (GM) crops are thoroughly tested, regulated and proven safe. The paper, 'Safety Testing and Regulation of Genetically Engineered Foods' reveals fundamental flaws in how biotech companies test and the US government regulated GM crops. The paper thus raises serious questions about whether GM foods, which have been on the market since 1994, are in fact safe, as claimed by the biotech industry and US regulators.

GM food can also have financial consequences. The EU's research programme on co-existence and traceability (co-Extra) estimates that "additional costs can increase to 13% of total product turnover." But this does not reflect the full reality. Data on the overall economic effects of GM crops is still limited. Most economic calculations are based on models and not on concrete empirical evidence. They usually neglect key factors such as the economic burden of co-existence measures, avoidance and segregation costs for the food industry. The negative effects of contamination incidents and the relations between farmers and other stages of the food production chain are covered insufficiently, or not at all. Contamination incidents make up a major part of the costs of GM crops. As of January 2011, there were more than 300 reported cases of contamination incidents worldwide. Some of these cases have resulted in major worldwide trade disruptions and have cost farmers, food processors and supermarkets billions of dollars, with many liability cases still pending. Although there is no large scale GM cultivation within the EU, contamination incidents are common. For example an investigation of maize and rapeseed in the EU found 280 contamination incidents of authorised GM seeds and 43 of unauthorised GM seeds between 2001 and 2006.

The granting of a licence for GM food trials in Ireland does not make sense for the agricultural community commercially, financially or environmentally. Therefore, it is our opinion that the application for a licence should be denied.

Sinn Féin

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Coolaght
Claremorris
Co Mayo

21st March 2012

The Director
Environmental Protection Agency
EPA Headquarters
PO Box 3000
Johnstown Castle Estate
Co. Wexford

Dear Sir

Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01);
Representation from the Mayo Organic Group and other Concerned Citizens

Please find attached the Mayo Organic Group's submission, together with signatures of Mayo residents and letters of support from organisations endorsing our submission.

I enclose the statutory fee of €10.00, and look forward to receiving your acknowledgement

Yours sincerely

Mary Corless

Chair, Mayo Organic Group

{

The Director
Environmental Protection Agency
EPA Headquarters
PO Box 3000
Johnstown Castle Estate
Co. Wexford

Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01);
Representation from the Mayo Organic Group and other Concerned Citizens

We have recently learned that Teagasc plans to carry out field trials of genetically modified potatoes on its Oak Park potato trial grounds this season..

No GM crops have been grown in Ireland to date, and over half our farmland lies in locally designated GM-free areas. The trials come at a time when an increasing number of countries and regions worldwide are imposing restrictions (China, Austria, Hungary) or outright bans (Peru, Greece) on GM crops. The reasons for these restrictions are twofold:

- the risks of contamination of conventional crops, including organic crops; the proven threat of genetically modified organisms to health and biodiversity, and the impacts on soil, water, heritage and traditional seed strains, pollinating insects and wildlife.

- the loss of control over national farming systems through the patenting of GM seed strains by multinational pharmaceutical companies, and increased reliance on their associated products, such as herbicides.

Both considerations apply in the present case. However carefully these trials may be supervised, there remains a risk of contamination. Teagasc's trial plot is unacceptably close to its own non-GM plantings, and to the farmland of three of Ireland's declared.GM-free counties. The right of a region to remain free of GM crop contamination is enshrined in European legislation.

The series of trials which Teagasc has joined originated in 2010 with an application from BASF, the world's largest chemical company (B/BE/10/V2 03/11/2010, EC Joint Research Centre Institute for Health and Consumer Protection). Already in 2006 BASF had proposed trialling GM potatoes in Ireland, but was deterred by public opposition. There can be no doubt that commercial exploitation is the intended outcome of the current trial programme. If here in Ireland, with major risks for Irish farming, which should be the focus of a full public and political debate. If not in Ireland, we would ask why the Irish taxpayer is being asked to fund the research?

The policy decision against GM involvement taken at Government level in 2009 was explicitly in support of Ireland's interests as an exporter of high-quality food *"To optimise Ireland's competitive advantage as a GM-Free country"* (Renewed Programme for Government, 10 October 2009, p.11) Given the substantial resistance to GM foods among European consumers,

As members of the Mayo Organic Group, and concerned citizens, we call on the EPA to reject Teagasc's application. We further request that State funding for research should prioritise the open pollination and participatory breeding that will enable Irish farmers to safeguard our precious heritage and food for future generations.

Yours sincerely
Mary Corless 21/03/12.
Mary Corless
Chair, Mayo Organic Group

GM FREE PROTEST

Mayo ORGANIC

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Jacqueline Muller	Ballinrooner. Kilmovie. Ballaghadereen. Co mayo.
John Gorvin	MAYO ABBEY. CO MAYO

2/12

Mayo ORGANIC

MAYO ORGANIC GROUP

~~ATTENDANCE SHEET~~ GM FREE PROTEST

MEMBERS

MEETING DATE

Name	Address	Phone Number
V. Price Adams.	bobvan69@hotmail.co.uk.	
J.B. Ruttledge.	Ardagh, Knockmore, Ballina	096/71506

3/12

Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01);
Representation from the Mayo Organic Group and other Concerned Citizens

LIST OF ADDITIONAL SIGNATORIES

NAME	SIGNED	ADDRESS & DATE
Dorothy Quinn	Dorothy Quinn	26 The Spires, church Rd. 20/3/12
Liam Quinn	Liam Quinn	26 The Spires, church Rd. 20/3/12
Heather Quinn	Heather Quinn	26 the spires, Church Road 20-3-12
Tina Geraghty	Tina Geraghty	26 Lord Edward Street 20-3-12
Lily Barrett	Lily Barrett	26 Lord Edward Street 20-3-12
Helen Diviney	Helen Diviney	Galway Education Centre, 20/3/12
Mary O'Sullivan	Mary O'Sullivan	c/o " " " , 20/3/2012.
Marie Casey	Marie Casey	c/o Galway Education Centre 20/3/2012.
Michelle Gorman	Michelle Gorman	c/o Galway Education Centre: 20-3-12.
Mary O'Mahony	Mary O'Mahony	c/o Galway Ed. Centre: 20-3-12
Nanette McDonagh	Nanette McDonagh	c/o Galway Ed. Centre, 20-3-12.
Louise Lofthus	Louise Lofthus	c/o Galway Ed. Centre: 20-3-12.
Agnes Moran	Agnes Moran	28 The Spires, Ballina, 20:3:12
GERRY COX	Gerry Cox	The Spires, BALLINA 20/3/12
PHILIP MENEGHAN	Philip Meneghan	Corbalta, Ballina: 20/3/12
LINDA BARRETT	Linda Barrett	The Spires, Ballina 20/3/12.
Peter O Hara	Peter O'Hara	The Spires Ballina: 20/3/2012
Paula O' Hara	Paula O' Hara	The Spires, BALLINA,
Lisa O'Hora	Lisa O'Hora	The Spires, Ballina. 20-3-2012
Dave O'Hora	Dave O Hora	The Spires, Ballina: 20-3-2012
Kathleen Hughes	Kathleen Hughes	Ardagh Ballina 20-3-2012
Liam Hughes	Liam Hughes.	Ardagh Ballina. 20-3-2012
Nellie Ruttledge	Nellie Ruttledge	Clooneigh Ballina 20-3-2012
Sosette Ruttledge	Sosette Ruttledge	Clooneigh Ballina 20-3-2012
Dessie Ruttledge	Dessie Ruttledge	Clooneigh, Knockmore Ballina 20-3-2012

Please return to mayo.organic.events@gmail.com by 11.00pm Thursday March 22nd

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Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01);
Representation from the Mayo Organic Group and other Concerned Citizens

LIST OF ADDITIONAL SIGNATORIES

NAME	SIGNED	ADDRESS & DATE
MÁIRE RUTLEDGE	Máire Rutledge	Ennis, Co Clare 18th March 2012
NIAMH RUTLEDGE	Niamh Rutledge	The Spires, Church Rd., Ballina 18/03/2012
MARK KENNEDY	Mark Kennedy	ENNIS, CO. CLARE 18/03/12
Chris Darby	Chris Darby	The Spires - Ballina
DEIRDRE RUTLEDGE	Deirdre Rutledge	Tullira Castle, Ardrahan 18.03.12
SEAN BENNETT	Sean Bennett	Tullira Castle, Ardrahan 18th March 2012
SINEAD DARBY	SinéadDarby	29 The Spires 18.03.12
JANE GOGLINS	Jane Goglins	Doolcastle, Ballina Co Mayo 18-3-2012
CATHERINE RUTLEDGE	Catherine Rutledge	Ardagh, Knocknare, Ballina 18-3-2012
Brendan Rutledge	B. Rutledge	Ardagh, Knockmore, Ballina 19:3:2012
Siobhán Kelly	Siobhán Kelly	Scotchfort, Cloghans, Ballina 19:3-2012
Siofraigh	Siofraigh Kelly	Scotchfort Cloghans Ballina 19:3:20.12
Ailbhe	Ailbhe Kelly	Scotchfort, Clogan's 19/3/2012
Peter	Peter Kelly	" " " " 19/3/2012
Ray Kelly	Ray Kelly	" " " " 19/3/2012
hayley	hayley kelly	" " " " 19/3/2012
Nellie Rutledge	Nellie Rutledge Cloonagh Cloghans	Cloonagh, Cloghans, Ballina 19/3/12
Gerard McAndrew	Gerard McAndrew	Ardagh, Cloghans, Ballina 19/3/12
Roise Kelly	Roise Kelly	6 Morrison Tce, Ballina 20/3/12
Peter Kelly	Peter Kelly	6 morrison Tce Ballina 20/3/12
Mary Kelly	Mary Kelly	6 Morrison Tce, Ballina 20/3/12
Ann McHale	Ann McHale	Garracloony, Cloghans Ballina 20/3/12
John McHale	John McHale	Garracloon, Cloghans Ballina 20/3/12
Rebecca McLoughlin	Rebecca McLoughlin	Rathduff, Cloghans, Ballina 20/3/12
Margaret McLoughlin	Margaret McLoughlin	Rathduff, Cloghans Ballina 20/3/12

Please return to mayo.organic.events@gmail.com by 11.00pm Thursday March 22nd

Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01);
Representation from the Mayo Organic Group and other Concerned Citizens

LIST OF ADDITIONAL SIGNATORIES

NAME	SIGNED	ADDRESS & DATE
Joanne Bourke	Joanne Bourke	3 Bannagh Rd. Foxford 21/3/12
Keith Staunton	K. Staunton	Stonehall Foxford 21/3/12.
Gary Lyons	Gary Lyons	15 Croc An Dana 21/3/12.
Noney Smyth	N. Smyth	Stonehall, Foxford 21-3-12.
Jean Charlton	Jean Charlton	Knockaun Ballina Co Mayo 22-3-12
Jane O'Connell	Jane O'Connell	Killasser, Swinford Co. Mayo 22-3-12
Tim Neal	Tim Neal	Swinford Co. Mayo 22-3-12
Majella Frizzell	Majella Frizzell	Curry, Tubbercurry, Co Sligo " "
Roisin Gillespie	Roisin Gillespie	43 Croc na Si, Tubbercurry. Co Sligo "
Nora McGuire	Nora McGuire	Lough East Tubbercurry Co Sligo.
Ruth Charlton	Ruth Charlton	Oughaval, Aclare, Co. Sligo 22-3-12
Kathleen	Kelly	Foxford Co Mayo " "
Esther Morris	Esther Morris	Foxford. Co Mayo " "
Irene Wiles	Irene Wiles	Foxford. Co. Mayo " "
Deborah Hurst	Deborah Hurst	foxford. Mayo " "
Helena Kearns	Helena Kearns	Crossmolina Mayo " "
John Queenan	John Queenan	Crossmolina Mayo " "
Seamus Colleran	Seamus Colleran	Pontoon Rd Foxford " "
Bernie	Gallagher	Belass Foxford " "
J Dillon	J Dillon	Foxford " "
Ciara Thornton	Ciara Thornton	pontoon Rd. Foxford " "
Niamh Thornton	Niamh Thornton	Pontoon Rd, Foxford " "
Kevin Reape	Kevin Reape	Foxford Co Mayo " "
Deirdre Bell	D Bell	Foxford Co Mayo. " "
Maria Lynn	Maria Lynn	Craggagh Foxford

Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01);
Representation from the Mayo Organic Group and other Concerned Citizens

LIST OF ADDITIONAL SIGNATORIES

NAME	SIGNED	ADDRESS & DATE
Adam Hardy	Adam Hardy	Tavanaughmore, Foxford, Mayo 20/03/2012
John munnelly	John munnelly	Tavanaughmore, Foxford, Co mayo 20/3/2012
Kate Gaughan	Kate Gaughan	Lisaniska, Foxford Mayo 20/03/12
Amanda Coleman	Amanda Coleman	Gortnadreha, Foxford, Mayo 20/03/12.
Jonathon Butler	Jonathan butler	Lisaniska, Foxford, Mayo 20/03/12
Ciarán Brogan	Ciarán Brogan	Knockmore, balling, Co mayo
Leanne Holmes	Leanne HOLMES	coolcronan Foxford. 20/3/2012
Conor Brogan	Conor Brogan	Gortnadreha, Knockmore, 20/3/2012.
Emma Larkin	Emma larkin	upper Binanney Foxford Co. Mayo 20/03/2012.
Samantha ginty	Samantha ginty	Tavanaughmore, Foxford, co. may 20/03/1
Matthew Forde	Matthew Forde	Tavanaughmore, Foxford, Mayo 20/03/2012
Kevin Munnelly	Kevin Munnelly.	Ballinasleva, Foxford, Co. Mayo, 20/03/2012.
Megan Farrell	Megan farrell	Tavanaughmore, foxford, Co. Mayo, 20/03/2012.
Niall Gaughan	Niall Gaughan	Rathbane, Foxford Co. Mayo 20/3/~~2012~~ 2013
Shannon Gallagher	Shannon Gallagher	Bayhallagh, Attymass, Ballina, Mayo. 20/3/2012
Sam Ardiff	Sam Ardiff	Knockmore, Ballina, Co. Mayo 20/3/12
Freya O'Hara	Freya O'Hara	Clossaghroe, Foxford Co. Mayo
Aoife Hopkins	Aoife Hopkins	Lisaniska, foxford, Co Mayo 20/3/12 20/3/12
Sinead Regan	Sinead Regan	Ballina, Co. Mayo 20/03/12.
Linda Walkin	Linda Walkin	Ballina, Co. Mayo, 20/3/12.
Patricia Hennyan	Patricia Hennyan	Carramore, Ballina, Co Mayo 20/3/12
Sarah Hennyan	Sarah Hennyan	Carramore, Ballina Co Mayo 20/3/12
Mary O'Boyle	Mary O'Boyle	Crossmolina, Ballina, Co Mayo 20/3/12
Ann O'Hara	Ann O'Hara	Ardagh Claggans, Ballina 20/3/12
Cathleen O'Hara	C O'Hara	Ardagh Claggans Ballina 20/3/12

Please return to mayo.organic.events@gmail.com by 11.00pm Thursday March 22nd

7/12

Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01);
Representation from the Mayo Organic Group and other Concerned Citizens

LIST OF ADDITIONAL SIGNATORIES

NAME	SIGNED	ADDRESS & DATE
M Heemskerk	M Heemskerk	13 Radharc na hUrraidhe Foxford, Co Mayo
Imelda	Mc Nulty	Foxford
P. Mulowen	Foxford.	Foxford
P Reilly	Foxford	Foxford
M. Gaffney	M Gaffney	Foxford.
M. Barlow		Foxford.
Am Burke	A. m Burke	Foxford
I. Stuart	I Stuart	Foxford.
Belinda Landy	Belinda Landy	8 Ard Abhainn, Pontoon Rd, Foxford.
Deborah Conway	D Conway	17 Cnoc An Dara.

Please return to mayo.organic.events@gmail.com by 11.00pm Thursday March 22nd

8/13

Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01);
Representation from the Mayo Organic Group and other Concerned Citizens

LIST OF ADDITIONAL SIGNATORIES

NAME	SIGNED	ADDRESS & DATE
Arlene Walshe	Arlene Walshe.	Mullenmore St., Crossmolina 21/3/12
NOIRIN BHREATHNACH	Nóirín Bhreathnach	41 CARRAREAGH, Castlebar
Claire Lacken	Claire Lacken	Culmore, Foxford, Co. Mayo.
MARY TERESA REGAN	Mary Teresa Regan	Cloulane, KILLEALY CO. MAYO
Frances Breen	Frances Breen	RATHOMA, KILLALA, Co. Mayo.
YVONNE KEAVENEY	Yvonne Keaveney	CLAREMORRIS, Co MAYO 21/03/12
M. Loughney	M. Loughney	7 Radharc na Greine, Rincor, Ballina
MARY WALSH		Gurteen Ballina
John Vale	J Vale	Mullenmore Crossmolina, Mayo
Stephen Molloy	Stephen Molloy	Acaill Beag Rossmoline Co Mayo.
MARTIN WALSHE.	Martin Walshe.	Abbeytown. Crossmolina Co. Mayo.
Amanda Dove	Amanda Dove	Woodbine Hse, Church Rd., Ballina, Co Mayo
Sunny Kitcuter	S Kitcuter	Woodville Killala Rd Ballina, Co Mayo
Breeda Hopkins	Breeda Hopkins	1 Joan Clarke place Ballina
Lisa Bonner	Lisa Bonner	12 Tudor Close, Knocknacarra, Galway

Please return to mayo.organic.events@gmail.com by 11.00pm Thursday March 22nd

Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01);
Representation from the Mayo Organic Group and other Concerned Citizens

LIST OF ADDITIONAL SIGNATORIES

NAME	SIGNED	ADDRESS & DATE
MICHAEL COLEMAN	M J Coleman	CARROWKEEL, LAHARDAUN, CO. MAYO. 20/3/12
GEMMA O'MAHONY	Gemma O Mahony	Derrynavane, Swinford 20/03/12
Anne Murtagh	Anne Murtagh	BRAGAZON PK, SWINFORD 20/03/12
Mary Battacon		Moygose Foxford Co Mayo
Charles Field	MAGNET FIELD.	Knocknalyan Ballina
Marlise Herfeldes	Marlise Herfeldes	Leo West Ballyhaunis
Claire de Barra		Clarke, Bunnacullen Co Mayo 20/03/12
Denise Clarke	Denise Clarke	Enniskeen Co Sligo
Clare Taylor	Lisaniney	Westport Co Mayo
Lorna Sheedy	Lorna Sheedy	Meelick, Swinford Co. Mayo 20/3/12
DERMOT GALLAGHER	Dermot Gallagher	LISMIRANNE ART CENTRE 20/3/12

Please return to mayo.organic.events@gmail.com by 11.00pm Thursday March 22nd

Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01);
Representation from the Mayo Organic Group and other Concerned Citizens

10/18

LIST OF ADDITIONAL SIGNATORIES

NAME	SIGNED	ADDRESS & DATE
T.M. Brennan	T.M. Brennan	Glenavenew, Castlehill, Ballina, Mayo.
Ann Brennan	Ann Brennan	Glenavenew Castlehill Ballina
Pat Mahon	P. Mahon	2. Mulberry Grove, Bellass, Foxfords, Co Mayo
James Mitchell	James Mitchell	Bloomcoolen Straide Foxford
Mairin Hearns	M. Hearns	Straide Foxford. Co Mayo
Brian Maloy	Brian Maloy	Strickeen Foxford Co Mayo.
Ronan Hall	Ronan Hall	Straide Foxford.
Mabel A King	Mabel A King	Straide Foxford.
Cecilia Gardner	Cecilia Gardner	Straide Foxford

Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01);
Representation from the Mayo Organic Group and other Concerned Citizens

LIST OF ADDITIONAL SIGNATORIES

NAME	SIGNED	ADDRESS & DATE
Roux Maxime		38 bd Arago 75013 Paris 20/03/12
TEKERSHAKTI		37 Avenue du Pont Juvenal 34000 MONTPELLIER 20.03.2012
MIOTTO ARIANNA		9 RUE DES ECOLES LAIQUES 34000 MONTPELLIER 20.03.2012
MARIN Gerard		20 Rue L'Almanarde 20/03/2012
Sebastien Gadal		5 Rue Marceaux 34000 Montpellier
DELHOMME Charlotte		7 rue Sainte Ursule 34000 MONTPELLIER 20/03/2012
PRIVAT Stephanie		14 rue du Bouton de Vénerie 34990 Juvignac 22/03/2012

Please return to mayo.organic.events@gmail.com by 11.00pm Thursday March 22nd

Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01); Representation from the Mayo Organic Group and other Concerned Citizens

LIST OF ADDITIONAL SIGNATORIES

NAME	SIGNED	ADDRESS & DATE
Rosa Meehan	Rosa Meeha	Straide, Foxford, Co Mayo 22nd 3/2012
Deana Trenbell	Deana Trenbell	Straide, Foxford Co. Mayo 22/3/12.
Cormac Turnbull	Cormac Turnbull	Straide, Foxford Co. Mayo 22/3/12
Grace Turnbull	Grace Turnbull	Straide, Foxford, Co. Mayo 22-3-12.
Jay Quirk	Jay Quirk	Blanemore Straide Foxford
Michael McHugh	Michael McHugh	Blanemore Straide Foxford
Leeanne McHugh	LEEANNE McHUGH	Straide Foxford Co. Mayo
Sara McHugh	SARA McHUGH	Blanemore Straide Foxford
M Smyth	M Smyth	Blanemore Straide Foxford
Caela Smyth	Caela Smyth	Blanemore, straide, foxford, co. Mayo
Kate Ohara	Kate Ohara	Blanemore, Straide, Foxford Co. Mayo
DAVE McINERNEY	pp Kate Ohara	Straide, Foxford
Kevin Smyth	pp Kate Ohara	Straide, Foxford
John Keane	pp Kate Ohara	Clongee, Foxford
Tomas Doherty	Tomas Doherty	Killala Rd Ballina

Please return to mayo.organic.events@gmail.com by 11.00pm Thursday March 22nd

Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01);
Representation from the Mayo Organic Group and other Concerned Citizens

LIST OF ADDITIONAL SIGNATORIES

NAME	SIGNED	ADDRESS & DATE
Catherine Hack	C Hack	Callow, Foxford Co Mayo
Les Glasgow	L Glasgow	Killalla Co Mayo
Suzette Keane	S Keane	Foxford Co. Mayo
Brian McHugh	B McHugh	Westport, Co. Mayo.
Debbie Beirne	D Beirne	B'darrean Co Roscommon
Elizabeth Hawkins	E Hawkins	Foxford, Co. Mayo.
MICHAEL McGRATH	M. McGrath	FOXFORD. Co MAYO.
Declan Tighe	Declan Tighe	Straide. Co Mayo.
Noel Gallagher	Noel Gallagher	Knockmore Ballina
KATIE MOORE	Katie Moore	Foxford.
LORNA EVANS	L K Evans	Killalla, Co Mayo
A. BURDEN	Anna Burden	FOXFORD, Co. Mayo
L. GOODIER	Lisa Goodier	Ballymote Co Sligo
Adam Herman	Adam Herman	Derrycoosh Killalla Co Mayo
Caoimhe Evans	C Evans	Derrinard Killalla Mayo.
BILLY McGOLDRICK	B McGoldrick	GLASS FOXFORD
Nathan McGrane	N McGrane	No 2 meadowpark pontoon rd. Portumna
Christian "	C "	Derry Roe
Morgan "	M "	"
Ilona "	I "	"
Claus "	C "	"
Vera	Stonehill	"
Virginia	"	"
Wesley Anderson	W Anderson	31 May View Foxford
Gary Nolan	Gary Nolan	37 An Sean Bhaile, Edward

Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01);
Representation from the Mayo Organic Group and other Concerned Citizens

LIST OF ADDITIONAL SIGNATORIES

NAME	SIGNED	ADDRESS & DATE
MARTIN HANLY		FOXFORD 22-3-2012

Garden Organic,
Ryton Gardens,
Wolston Lane,
Coventry, CV8 3LG
Tel: (024) 7630 3517
Fax: (024) 76639229
Email: enquiry@gardenorganic.org.uk
Website: www.gardenorganic.org.uk

garden organic
the national charity for organic growing

March 22nd 2012

The Director
Environmental Protection Agency
EPA Headquarters
PO BOX 3000
Johnstown Castle Estate
Co Wexford
Republic of Ireland

Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain- (G0469-01, Reference No B/IE/12/01)

Dear Sir

I am writing to inform you that I have read and considered the Mayo Organic Group submission and agree with the arguments put forward. I respectfully request that the Environmental Protection Agency take note of the submission and act accordingly.

Garden Organic is opposed to the use of genetically modified (GM) crops in agriculture and gardening, because it feels that there is a lack of adequate knowledge on the effects of their widespread use, particularly in the long term. Three major areas of concern are: their effects on human and animal health; on wildlife and the natural environment; and lastly the concentration of control of the supply of seeds of major food crops into the hands of a very small number of commercial businesses.

Garden Organic holds that genetic engineering practices are incompatible with the principle of organic agriculture and it supports the current organic standards excluding the use of genetically modified crops in organic systems.

Margi Lennartsson

Dr Margi Lennartsson
Head of Commercial Programmes

Soil Association
healthy soil, healthy people, healthy planet

South Plaza
Marlborough Street
Bristol BS1 3NX

T 0117 314 5000
F 1007 314 5001

www.soilassociation.org

22 March 2011

Dear Sir or Madam,

Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01): representation from the Soil Association UK

We have recently learned that Teagasc plans to carry out field trials of genetically modified potatoes on its Oak Park potato trial grounds this season. We are writing with strong support for the submission to you from the Mayo Organic Group, asking you not to allow this trial to proceed.

The governments of Wales and Scotland, countries where the importance of farming, and the economic significance of agricultural exports, are well understood by politicians, both have strong non-GM policies, and have rejected the idea of GM field trials. The same, of course, applies in an increasing number of EU Member States. We believe that this proposed trial poses risks to organic farming in Ireland, and to the current high reputation that Irish farming generally enjoys.

Yours sincerely,

Peter Melchett
Policy Director

54 rue des Jonquilles
65690 Barbazan-Debat
France.

19th March 2012

The Director
Environmental Protection Agency
EPA Headquarters
PO Box 3000
Johnstown Castle Estate
Co. Wexford

Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01);
Representation from the Mayo Organic Group and other Concerned Citizens

We have recently learned that Teagasc plans to carry out field trials of genetically modified potatoes on its Oak Park potato trial grounds this season..

No GM crops have been grown in Ireland to date, and over half our farmland lies in locally designated GM-free areas. The trials come at a time when an increasing number of countries and regions worldwide are imposing restrictions (eg China, Austria, Hungary) or outright bans (eg Peru, Greece) on GM crops. The reasons for these restrictions are twofold:

- the risks of contamination of conventional crops, including organic crops; the proven threat of genetically modified organisms to health and biodiversity, and the impacts on soil, water, heritage and traditional seed strains, pollinating insects and wildlife.

- the loss of control over national farming systems through the patenting of GM seed strains by multinational pharmaceutical companies, and increased reliance on their associated products, such as herbicides.

Both considerations apply in the present case. However carefully these trials may be supervised, there remains a risk of contamination. Teagasc's trial plot is unacceptably close to its own non-GM plantings, and to the farmland of three of Ireland's declared GM-free counties. The right of a region to remain free of GM crop contamination is enshrined in European legislation.

The series of trials which Teagasc has joined originated in 2010 with an application from BASF, the world's largest chemical company (B/BE/10/V2 03/11/2010, EC Joint Research Centre Institute for Health and Consumer Protection). Already in 2006 BASF had proposed trialling GM potatoes in Ireland, but was deterred by public opposition. There can be no doubt that commercial exploitation is the intended outcome of the current trial programme. If here in Ireland, with major risks for Irish farming, which should be the focus of a full public and political debate. If not in Ireland, we would ask why the Irish taxpayer is being asked to fund the research?

The policy decision against GM involvement taken at Government level in 2009 was explicitly in support of Ireland's interests as an exporter of high-quality food *"To optimise Ireland's competitive advantage as a GM-Free country"* (Renewed Programme for Government, 10 October 2009, p.11). Given the continuing substantial resistance to GM foods among European consumers, (cf eg *Eurobarometer 341, Biotechnology)*, abandoning this policy would seriously damage our food-exporting prospects..

As members of the Mayo Organic Group, and concerned citizens, we call on the EPA to reject Teagasc's application. We further request that State funding for research should prioritise the open pollination and participatory breeding that will enable Irish farmers to safeguard our precious heritage and food for future generations.

Yours sincerely

JA Hitchman

RÉSEAU INTERNATIONAL URGENCI

5 rue Jean-Jacques Rousseau 13400 Aubagne – France
Tel : +33 (0)4 42 32 05 75 - Email : contact@urgenci.net
Website : www.urgenci.net

Aubagne, 19 March 2012

To:

The Director
Environmental Protection Agency
EPA Headquarters
PO Box 3000
Johnstown Castle Estate
Co. Wexford

Objet : **Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01); Representation from the Mayo Organic Group and other Concerned Citizens**

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RÉSEAU INTERNATIONAL URGENCI
5 rue Jean-Jacques Rousseau 13400 Aubagne – France
Tel : +33 (0)4 42 32 05 75 - Email : contact@urgenci.net
Website : www.urgenci.net

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As members of the Mayo Organic Group, and concerned citizens, we call on the EPA to reject Teagasc's application. We further request that State funding for research should prioritise the open pollination and participatory breeding that will enable Irish farmers to safeguard our precious heritage and food for future generations.

Yours sincerely,
On behalf of Urgenci, the International Network of Community –supported Agriculture, the General Secretary,

le Secretaire General

RESEAU INTERNATIONAL
URGENCI
Maison de la Vie Associative
13400 AUBAGNE - FRANCE
SIRET 493 873 669 00013 - APE

INSTITUTE FOR INTEGRATED RURAL DEVELOPMENT (IIRD)

(Member of IUCN – The World Conservation Union)

Ref.: Date: 21-March 2012

Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01);
Representation from the Mayo Organic Group and other Concerned Citizens

LIST OF ADDITIONAL SIGNATORIES

NAME	SIGNED	ADDRESS & DATE
Joy Daniel	Joy Daniel	IIRD, Kanchan Nagar, Nakshatrawadi, Aurangabad 431002, India 21-Mar-2012

Joy Daniel
Executive Director, IIRD

Kanchan Nagar, Nakshatrawadi, P.O. Box 562, Aurangabad – 431002, Maharashtra, India
Tel.: +91-240-2379038, 2379336 Fax: +91-240-6607135
Email: info@iird.org.in
Website: http://www.iird.org.in

Summerville,
Circular Road,
Dunmore East,
Co. Waterford

March 19th 2012

The Director
Environmental Protection Agency
EPA Headquarters
PO Box 3000
Johnstown Castle Estate
Co. Wexford

Public Consultation on Teagasc's Proposed Trial of Genetically Modified Potato Strain - (G0469-01, Reference No B/IE/12/01);
Representation from the Mayo Organic Group and other Concerned Citizens

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As members of the Mayo Organic Group, and concerned citizens, we call on the EPA to reject Teagasc's application. We further request that State funding for research should prioritise the open pollination and participatory breeding that will enable Irish farmers to safeguard our precious heritage and food for future generations.

Yours sincerely

JHitchman

JUDITH A. HITCHMAN

(31)

Ballysax,
The Curragh,
Co. Kildare

26/03/2012

Dear Sir,

I believe that the problems of the banking crisis, and the emergence of GM crops have similar roots in system failure i.e. revolving doors and regulatory capture, a Minister with confidence in the regulator " If it passes all the EU's food safety tests, I have no difficulty with it." (the EU don't do gm food safety tests) and the uncanny similarity between the original U.S. sub prime mortgage debacle and the GM situation with Europeans relieving the U.S. of their problems by buying the potentially toxic products from their unregulated system which somehow have undeservedly gained a clean bill of health from the 'rating agency'.

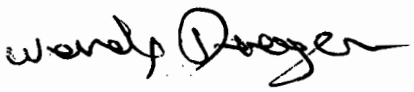
These assumptions of safety were based on the "central dogma", which the Human Genome Project rendered obsolete. The uncertainty of the outcome of the GM process is reflected in the rejection of liability by both those Companies (e.g. Monsanto) who create GM Crops and their "regulators" (the US FDA), This risk is described by Robert Hartwig, chief economist for the Insurance Information Institute: "Genetically engineered foods are among the riskiest of all possible insurance exposures that we have today". Where insurance cover is considered, it is envisaged this would be made possible by capping the insurer's liability with the state accepting the remaining liability.

The liability is in this case passed from those who generate the risk to the government, hence the tax payer of tomorrow, that is the children of today who are we are told for a variety of obvious and not so obvious reasons the ones with most to fear from the health effects of GM Foods. This is all the more unjustifiable as studies exist to which the public are not given access, which examine areas of specific interest to children.

With encouragement from corporations and foreign governments our society is considering placing children in the harm outlined above. This is indeed a low point for

humanity and Irish history. I would urge the EPA to be the unapologetic defenders of our young and be willing to challenge the 'convenient assumptions' which will exist by necessity in the proposed GM crop trial.

Yours sincerely



Wendy Deegan

32

Bea Claydon

From: Bernadette Murray
Sent: 26 March 2012 10:18
To: Bea Claydon; Eve O'Sullivan
Subject: FW: GM Trial

Bea / Eve has a fee been received in respect of this please
Thanks
Bernie

From: tom conroy [mailto:tomasconroy@yahoo.com]
Sent: 26 March 2012 09:19
To: Wexford Receptionist
Subject: GM Trial

28 Maxwell Road
Dublin 6
087 2613204

25 March 2012

Dear Sir or Madam

I wish to object to the trial of GM potatoes to take place at the Teagasc Crops Research Centre in Oak Park, Carlow, between March and November 2012 to 2016 in accordance with sub-article 16(1) of S.I. No. 500 of 2003.

Given that it is impossible to prevent GM contamination to other crops in an open field trial I think this is highly dangerous. Our position in Ireland as a GMO free zone should be maintained and has a greater economic value in the longer term.

A fee of €10 has been sent to your headquarters.

yours

Tom Conroy

33

Thomastown,
Kilcullen,
Co Kildare
25/03/2012

Dear Dr. Mc Loughlin,

Please find enclosed my comments on the application by Teagasc to assess and monitor the impact on the agri-environment of genetically modified potatoes with resistance to *Phytophthora infestans*, causative organism of late blight disease (2012 – 2016)

In addition to the enclosed comments, I have three further observations; firstly, and most importantly, the basic requirement of Directive 2001/18 that the environmental risk assessment is conducted in a "scientifically sound" manner is not fulfilled, and therefore the risks cannot be assessed properly. Secondly, the time frame was short for such an important application. Finally, many of the references cited needed to be purchased, and in addition to the financial cost incurred, this posed a further delay in an already unacceptably short time frame. I enclose the 10 euro fee required.

Kind regards

Liz

Elizabeth Cullen

1. Complete name

Paragraph 1 Page 7

This first paragraph states that gene dispersal via pollen and seed from *S. tuberosum cv.* has been assessed in a Teagasc study. The study referenced states that "Microsatellite markers were also used to confirm that the foraging beetle Meligethes aeneus is a vector for the transmission of potato pollen, but a more detailed statistical analysis of this dataset was limited by inclement weather during the trial". A thorough examination would have ensured that the pollen spread (and gene dispersal) was examined in all conditions, as it is widely acknowledged that pollen is spread by the wind (in addition to animals and other insects); there are also many instances e.g. in the case of a violent storm, where the outcome would be uncertain. It is therefore not accurate for the applicant to state that the "management and flowering characteristics of *cv. Desiree* under Irish conditions have been thoroughly examined". The requirement of Directive 2001/18 to conduct the environmental risk assessment in a "scientifically sound and transparent manner" is not fulfilled.

2 (a) Information concerning reproduction

(i) Modes of reproduction

Potato genomics is complicated by its polyploidy genome and many important qualitative and quantitative agronomic traits are poorly understood[1] and references are needed for 'the Teagasc gene flow studies' cited. In addition, it may be difficult to obtain 'complete control of volunteers'.

(ii) ***generation time***

Although other growing parameters are detailed, and even though required, the actual generation time is not stated.

2 (b) Sexual compatibility with other cultivated or wild plant species, including the distribution in Europe of the compatible species

The reference quoted states that "These data demonstrate that gene flow by pollen dispersal from potato to its most common wild relatives in Western Europe is highly unlikely". One

study, undertaken in 1994, is not sufficient to confirm that there is no risk from breeding with *Solanum nigrum* Black nightshade or *Solanum dulcamara* Bittersweet nightshade in the Irish context. The reference cited to support this finding in the Irish context is unpublished and does not fulfil the basic criteria of a scientific study. It is therefore necessary to ascertain if there is any recent published work that confirms this finding in the Irish context. The Statutory Instrument No. 500/2003 Genetically Modified Organisms (Deliberate Release) Regulations 2003, Second Schedule, Principles for the Environmental Risk Assessments states "It is important not to discount any potentially adverse effect on the basis that it is unlikely to occur".

3 (b) Specific factors affecting survivability, if any

The reference sited in support of the assertion of reduced 'tuber survivability' and volunteers is not published as yet and therefore does not fulfil the criteria of Directive 2001/18 that the environmental risk assessment "should be carried out in a scientifically sound and transparent manner based on available scientific and technical data" and therefore does not qualify as proof.

4 Dissemination

(a) ways and extent (for example, an estimation of how viable pollen and/or seeds declines with distance) of dissemination

The extent of pollen dispersal varies with cultivar, insect populations (particularly bumble bees), climatic conditions, particularly wind, during flowering. Although pollen dispersal in potato is generally restricted under certain circumstances, pollen dispersal can be very high as well as occurring over long distances[2].

In relation to the cultivar, it is not clear if the three studies cited to support the statement that 'transgene dispersal is limited (99.98%) to within 10 m of the transgenic population', refer to Venturii and Desiree. The abstracts of the first reference (Conner and Dale, 1996) does not refer to Venturii or Desiree[a], the second reference (Mc Partland and Dale, 1994), refers only to Desiree, and the final reference (Tynan, Williams and Conner 1990), again does not mention either species.

It difficult to understand why the first study in the Irish context referenced, is described as a 'worst case scenario' of pollen mediated gene flow, when further analysis was

[a] An internet search allows access only to the first page of the publication

inhibited by the 'inclement weather conditions'. In addition, the pollen mediated gene flow was found to extend to 21 metres slightly higher than the 20 meters cited as 'adequate to mitigate pollen mediated transgene escape' in this section in the application and is in contrast to the 10 meters cited by the three studies. The statement that 36% of the seed germinated in the Irish study 'in the controlled conditions of a glasshouse' is irrelevant. The important issue is that the seeds were viable, and in addition, warmer outdoor conditions may be expected in Ireland with climate change. Has the role of the pollen beetle *Meligethes aeneus* been clarified in the Irish context? The foraging habits of this beetle mean that they emigrate from a crop in large numbers and often fly over long distances[3]. In addition, has the role of the bumble bee and other pollinators been assessed? Bumble bee-mediated pollen flow may extend over 9 km if males also contribute to pollination[4]. This study also emphasizes the need for 'responsible crop management' in order to minimize the establishment of volunteers, which the study notes 'will emerge through rotation as a result of pollen mediated gene flow'. There is no reference cited for the second Irish study, which refers to a 'walled field'. The implication of this for the spread of pollen is not stated.

Further analysis of the statement by the European Environment Agency that 'in less developed areas of the world true potato seed has a considerable number of benefits and as such has been utilized in commercial potato production so that crosspollination could lead to contamination of subsequent crops and addition varieties prone to producing fertile berries would be exposed to contaminating GM pollen, providing a source for GM volunteers[3]' is necessary.

Finally, knowledge is needed of strategies for monitoring of over wintering of GM potatoes as more mild winters[5], may be expected in the future as a result of climate change.

7. Other potential interactions, relevant to the genetically modified organism, of the plant with organisms in the ecosystem where it is usually grown, or elsewhere, including information on toxic effects on humans, animals and other organisms.

Although this section requires information on interactions of the plant with other organisms, the data provided consists largely of diseases that may affect the potato. No reference is cited of the impact that the genetically engineered plants may have, for example, on bumble bees, who frequent potato plots and themselves are effective pollinators of potatoes, or on many other organisms. It is clear that the requirement of Directive 2001/18 to conduct the

environmental risk assessment in a "scientifically sound and transparent manner" is not fulfilled. There are many types of bacteria closely related to agrobacterium tumefaciens which infect plants, animals, soil, humans, and are involved in the commercially important function of nitrogen fixing. In addition, any assessment of the impact on the environment of a GM plant created using agrobacterium tumefaciens should focus on the possibility of gene transfer between the GM plant and this wider microbial community. As horizontal gene transfer is known to be accelerate rapidly when bacteria come under attack from antibiotics, attention should be given as to whether bacteria react in a similar manner to other toxic agents such as the fungicides envisaged in the Teagasc trial. There are copper based fungicides and copper can be used to control agrobacterium tumefaciens.

Furthermore, the Teagasc/Amiga project[6] states that it will contribute to WP4 and WP8 by providing research expertise on soil ecology, host pathogen interactions, crop agronomy and IPM strategies for existing and future GM crops and the impact assessment of GM crops with specific reference to the assessment of GM traits on rhizospheric microbial communities. It further states that "Dr. Ewen Mullins is a senior research officer in the Teagasc crop science department.....his current research is examining processes to mitigate the impact of novel disease tolerant traits on microbial populations". Work on mitigation could seem to acknowledge that an impact is expected. As Section F states, this study as designed may not be capable of detecting such damage.

Section C

3. Size, source (name) of donor organism(s) and intended function of each constituent fragment of the region intended for insertion.

The toll like receptor protein in genetically modified into food crops requires careful testing. In the absence of direct testing of the individual NBS-LRR protein, it cannot be assumed that none of the encoded proteins is toxic or allergenic to humans and animals. Although, for example, toll like receptor proteins from plants and animals have seldom been directly tested for the toxicity, a toll like receptor protein was found to induce tumor necrosis factor in baboon lung cells[7].

Section D

(b) parts of the plant where the insert is expressed (for example, roots, stems, pollen, etc.);

The application states that the use of additional Rpi genes can be seen as conferring additional resistance. How many genes will be inserted?

4. Information on how the genetically modified plant differs from the recipient plant in:

(a) mode(s) and/or rate of reproduction;

The application states that 'no changes' were observed between the GM line and its 'equivalent' non GM comparator. Full details are required on the nature and results of such testing; this is an assumption based risk assessment in contract to a science based risk assessment, and violates the requirement of the 2001/18, that risk assessment must be conducted in a transparent manner.

(c) survivability

The application states that the frost tolerance was not 'significantly' impacted. It is not clear if the insertion of the gene had any impact on the frost tolerance of the generated tubers. Was a test of statistical significance undertaken?

5. Genetic stability of the insert and phenotypic stability of the genetically modified higher plant

The application states that the trait has been consistently expressed in 'successive generations'. It is necessary to know many generations were examined, and was an impact on any other plant system observed. The requirement of Directive 2001/18 to conduct the environmental risk assessment in a "scientifically sound and transparent manner" is not fulfilled.

6. Any change to the ability of the GMHP to transfer genetic material to other organisms

While the potential for the horizontal transfer of antibiotic resistance genes does not exist, as stated, what is the potential for the horizontal transfer of the Rpi-vnt1.1 gene, or other unintended products of the genetic engineering process, to soil bacteria and other microorganisms?

7. Information on any toxic, allergenic or other harmful effects on human health arising from the genetic modification

This paragraph states that the 'Solanum genetic sequence is not expected to exert any toxic, allergenic or harmful effects on human/animal health and /or the environment'. It is not clear on what grounds this assumption is made. Unintended side effects are common in human and

environmental research. When genes are passed between even closely related species, subtle and unpredictable changes in the proteins can result in them becoming dangerous; tests for allergenicity using amino acid sequences known to cause allergies will not always detect allergens[8]. For example, the ability of bacteria to develop resistance to antibiotics was not foreseen, but was nevertheless precipitated by the introduction of antibiotics and the problem of multidrug resistant bacteria, and concomitant horizontal gene transfer of this antibiotic resistance now poses a substantial risk to health.

Evidence is required from biochemical and other tests before a conclusion may be reached on the toxicity, allergenicity and other parameters of safety of this potato. The requirement of Directive 2001/18 to conduct the environmental risk assessment in a "scientifically sound and transparent manner" is not fulfilled.

10. Potential changes in the interactions of the genetically modified higher plant with non-target organisms resulting from the genetic modification.

It is not clear how the impact of the genetically engineered plants on soil and non-target organisms can be assessed against the impact of conventionally grown potatoes if the comparison is between the soil where the genetically engineered plant has been sown and soil which has been sprayed with copper. As the copper load will be lower, it is clear that soil biodiversity will improve in the soil where the genetically engineered potato has been planted. In addition, the assertion that no effects on other organisms other than phythoptera infestans by the cisgeneic plant material can be expected cannot be assumed.

13. Information about previous releases of the genetically modified plant, if applicable.

Details are required on the nature and results of the tests undertaken to ascertain that 'no unanticipated effects 'were recorded.

F. INFORMATION RELATING TO THE RELEASE (ONLY FOR NOTIFICATIONS SUBMITTED IN ACCORDANCE WITH ARTICLE 14)

The first bulleted point of this section states that an objective of the AMIGA project is 'to provide baseline data on biodiversity in agri-eco-systems in the EU'. "The provision of data and information on Ireland's biological resources is the key task" of the National Biodiversity

Data centre [9]. It is clear that much work requires to be undertaken; soil and vegetation habitats are two of ten itemized areas where 'basic surveys need to be carried out'. Furthermore, national databases need to be carried out on ten classes of organisms including beetles. The report also states that our 'knowledge of plants is patchy and that tracking systems are necessary for vascular plants'[10]. It is preferable that the task of providing baseline data continue to be provided by the National Biodiversity Data Centre in contrast to an agency whose work may, albeit unwittingly undermine our biodiversity. In relation to the second bullet point, it is difficult to understand how a 'suitable bio-indicator' might be identified that would 'permit a better integration of GM field experimentation'. A tentative list of agri-environmental indicators has already been drawn up by the United Nations[11]. The second last bullet point on page 22 does not make sense, as it compares the impact of GM potato cultivation to crops sprayed with a fungicide.

The statement that there is no involvement by the ag-biotech industry in the proposed field experimentation is not strictly correct. The application states that the proposal to grow genetically engineered potato seed has been developed as part of a publicly funded project in the Netherlands. The reference for this statement in the application is the Durph website. The guiding principle of Durph research is People, Planet, Profit. The website states that "In the potato sector, corporate responsibility means: taking care of consumers, farmers, water managers and other stakeholders (People), the environment (Planet) and the economy (Profit)"[12]. A participant of Durph, is Plant Research International. This agency "offers unique new perspectives for governments and private companies, for agriculture and horticulture and for rural and environmental development"[13]. The application states that it is not the intention of Teagasc to place the GM potato on the market. It is however, very possibly the intention of one of Teagasc's partners.

G. INFORMATION ON CONTROL, MONITORING, POST-RELEASE AND WASTE TREATMENT PLANS (ONLY FOR NOTIFICATIONS SUBMITTED IN ACCORDANCE WITH ARTICLE 14)

4. Description of monitoring plans and techniques.

Although the application states that "project participants will study indicators of biodiversity both above and below the ground, that might identify characteristics which may cause adverse effects", no biodiversity indicators are listed.

Observations during release

It is not clear why, in view of the paucity of pollen flow studies cited, and alongside Ireland's poorly documented soil biodiversity, that 'no additional pollen flow studies are planned'. It is also not clear how 'assessments will be made to *ensure* (my italics) that the performance of the GM lines is substantially equivalent to that of the respective comparator plants'. It is not clear what surveillance mechanisms are in place, should adverse effects on human or animals health occur. Again, the requirement of Directive 2001/18 to conduct the environmental risk assessment in a "scientifically sound and transparent manner" is not fulfilled.

H. RISK ASSESSMENT

1. Likelihood of the genetically modified higher plant (GMHP) becoming more persistent than the recipient or parental plants in agricultural habitats or more invasive in natural habitats

In contrast to the statement in the application, potatoes are quite often found outside the confines of a managed cropping system', for example in a compost heap.

2. Any selective advantage or disadvantage conferred to the GMHP

A reference is required to substantiate the statement that *P.infestans* resistance is not a key determinant for inducting potential invasiveness

4. Potential immediate and/or delayed environmental impact resulting from direct and indirect interactions between the GMHP and target organisms, such as predators, parasitoids and pathogens (if applicable)

Similar to the point raised at the beginning of Section F, this paragraph states that the biodiversity will improve because it has not been sprayed

6. Possible immediate and/or delayed effects on human health resulting from potential direct and indirect interactions of the GMHP and persons working with, coming into direct contact with, or in the vicinity of the GMHP releases

The submission states that "The cisgenic line A15-031 is equivalent to the conventional potato cultivar Desiree with the exception of the presence of the Rpi-vnt1.1 gene." This statement of equivalence is in contrast to the assertion by the Dutch collaborators of this study[14], which acknowledges that "the process of genetic engineering itself may lead to

mutations and rearrangements', and states that cisgenesis plants "should be screened for unwanted changes in a similar way as plants derived from mutagenesis are screened and selected". The article further states that "Mutagenesis has led to undirected mutations and translocations". In the case of potato, the process of genetic engineering will also increase the chances that mutagenesis will increase and this requires that even more scrutiny is required with genetically engineered potatoes.

This paragraph also states that "The Rpi-vnt1.1 is derived from the wild potato species S. venturii and there is no evidence to suggest that this cisgene, or any other Rpi genes that exist in conventional potato varieties exert any toxic or allergenic effects to human health". No evidence is presented to conclude on the toxicity, allergenicity or other parameters of safety of S. Venturii and again, the requirement of Directive 2001/18 to conduct the environmental risk assessment in a "scientifically sound and transparent manner" is not fulfilled. It is therefore not possible to agree with the conclusion that the impact on human health is negligible.

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[1] http://www.potatogenome.net/index.php/Introduction

[2] http://www.e-library.lt/resursai/ES/Leidiniai/EEA_issue_reports/GMOsforwww.pdf

[3] Genetically modified organisms (GMOs): The significance of gene flow through pollen transfer European Environment Agency 2002 Environmental issue report No 28

[4] Kraus FB, Wolf S, Moritz RF Male flight distance and population substructure in the bumblebee Bombus terrestris. J Anim Ecol. 2009 78(1):247-52.

[5] Supplementary Report from the Danish Working Group on the Co-existence of Genetically Modifi ed Crops with Conventional and Organic Crops Update of the 2003 Report Karl Tolstrup, Sven Bode Andersen, Birte Boelt, Morten Gylling, Preben Bach Holm, Gösta Kjellsson, Svend Pedersen, Hanne Østergård, Søren A. Mikkelsen DJ F PLANT SCIENCE NO. 131 AUGUST 20 07

[6] www.amigaproject.eu/web/partners/teagasc/

[7] Cell Immunol. 2011 ; 268(2): 87–96. doi:10.1016/j.cellimm.2011.02.009].

[8] Prescott V et al Transgenic expression of Bean r-Amylase inhibitor in peas results in altered structure and immunogenicity'. Journal of Agricultural food Chemistry 2005 (53)

[9] Annual Report National Biodiversity Data Centre, 2010.

[10] National Biodiversity Data Centre, 2010. Ireland's Biodiversity in 2010: Knowledge Gaps. National Biodiversity Data Centre, Waterford.© National Biodiversity Data Centre 2010. ISBN

[11] P. Narian Senior Officer Statistics Division Food and Agriculture Organisation of the UN Agri-environmental statistics for compilation of indicators, accounts and meeting other needs of decision makers

[12] http://www.durph.wur.nl/UK/Policy+framework

[13] http://www.pri.wur.nl/UK/about/Organisation/

[14] Schouten, Krens and Jacobsen, 2006 Do cisgenic plants warrant less stringent oversight? Nature biotechnology Vol 24 No 7 July 2006

Thomastown,
Kilcullen,
Co Kildare
25/03/2012

Dear Dr. Mc Loughlin,

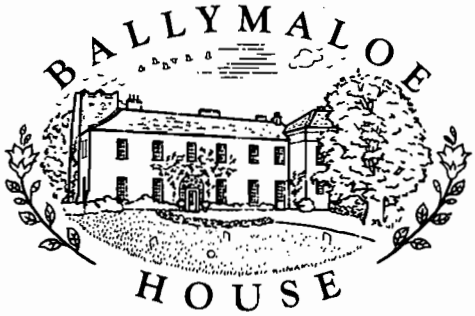
Please find enclosed my comments on the application by Teagasc to assess and monitor the impact on the agri-environment of genetically modified potatoes with resistance to *Phytophthora infestans*, causative organism of late blight disease (2012 – 2016)

In addition to the enclosed comments, I have three further observations; firstly, and most importantly, the basic requirement of Directive 2001/18 that the environmental risk assessment is conducted in a "scientifically sound" manner is not fulfilled, and therefore the risks cannot be assessed properly. Secondly, the time frame was short for such an important application. Finally, many of the references cited needed to be purchased, and in addition to the financial cost incurred, this posed a further delay in an already unacceptably short time frame. I enclose the 10 euro fee required.

Kind regards

Elizabeth Cullen

(34)



Environmental Licensing Programme,
Office of Climate, Licensing & Resource Use,
PO Box 3000,
Johnstown Castle Estate ,
County Wexford.

March 23rd 2012.

Dear Sir,

We are really dismayed to hear that you are requesting the E.P.A. to obtain a licence to plant genetically modified potatoes at Oak Park in Co. Carlow.

I am writing to request you to drop this plan immediately. Many Irish people have used our ideal situation on the outer edge of Europe to promote our fine, natural foods and also to escape from other problems which beset the UK and the rest of Europe from time to time. We have always been able to live up to the conception of being "clean and green". You must be aware that a large and prestigious selection of Irish food is both the product and the selling strength of this concept for food and tourism.

We are deeply into this concept of Ireland's fine quality food at Ballymaloe, and are proud to have been chosen as one of Condé Nast's "The 50 Best Hotels in the World". This could not happen if we did not have access to Ireland's finest food. It has enabled us to run an internationally famous cookery school, built on the use of our food products, and my daughters home and export business, Ballymaloe Country Relish, which she sells every where from Dubai to Los Angeles.

Family food off shoots are keeping up the conception of Ireland abroad, i.e. clean, green, beautiful, wholesome, happy and healthy.

We are not just selling for ourselves, we sell for Ireland.

Yours sincerely,

Myrtle Allen.

Ballymaloe House, Shanagarry, Co. Cork, Ireland,
Telephone +353 (0)21 4652531, Fax +353 (0)21 4652021, Email: res@ballymaloe.ie www.ballymaloe.ie

35

Slow Food® Ireland

Monday March 26th 2012

To whom it may concern

I enclose a submission on behalf of Slow Food Ireland in relation to the proposed deliberate release of GM into the environment for purposes other than placing on the market i.e. to perform a field trial.

Yours sincerely

Darina Allen

Darina Allen

PS.
This submission was also sent by email in case the post (overnight) did not arrive as promised.
€10.00 was paid by credit card to Liz Dargan 01-2680173

Slow Food® Ireland

Slow Food Ireland objects to the proposed "deliberate release of GM potatoes into the environment for purposes other than placing on the market i.e. to perform a field trial" for the following reasons:

1) While this GM potato is labeled as cisgenic, it still relies on the insertion of artificial gene units into the host plants genome. It is well known among the scientific community that the GM transformation process is imprecise and can cause widespread mutations, resulting in potentially major changes to the plants DNA blueprint. These mutations can directly or indirectly disrupt the functioning and regulation not just of one or even of several, but of hundreds of genes leading to unpredictable and potentially harmful effects. These can include the production of unexpected toxic, carcinogenic, teratogenic or allergenic compounds
(We are concerned that although the term cisgenic was mentioned 48 times in the Teagasc Impact Report there is no definition. This is not a term that is readily understood by the non scientific community so it needs to be clarified).

2) In the Teagasc Impact Report it is stated that post release animal and/or bird predation is not applicable, owing to glycoalkaloid content of berries. But they have ignored the predation effects upon the newly planted tubers, by animals or birds. Bees and other insects travel up to 5 km in any direction.

3) The proposed 40m minimum distance is totally unacceptable when one study shows that the potential dispersal of transgenes was up to 1000 m. (Study reference Skogsmyr I (1994) Gene Dispersal from Trasgenic Potatoes to Conspecifics: A Field Trial)

Organic farmers grow several varieties of blight free potatoes with considerable success. Slow Food would like to see more research into this area. While Teagasc acknowledges that conventional breeding and methods can produce a blight resistant plant they state that time and linkage drag do not produce the required results. However they fail to mention that GM plants around the world have also shown the effects of epigenetics and have produced low agronomic performance.

Ireland the Good Food Island!

All of the above give rise to concern. Both producers, consumers and others in the supply chain recognize that discovery of GM contamination could compromise consumer confidence and goodwill. This in turn would result in damaging economic impacts. If

there are unintended consequences as has happened with GM in many other countries, it is not a question of product recall. Once the 'genie' is out of the bottle there is no going back, Ireland can never again claim to be GM free.
We can see how scientific curiosity can encourage researchers in this field to push out the boundaries but the regulators and the politicians role needs to be active in protecting the public interest.

What possible advantage is it for Ireland to be drawing dubious publicity to itself by joining the GM promoting fraternity. I can see how the commercial GM interests can benefit. There are many downsides for Ireland as an important producer of pure clean food.

Billions of £'s & €'s have been invested by Kerrygold, Irish beef, BIM, Baileys, Jameson and Bord Failte over 20 years creating Ireland green clean image. Why risk it on your watch?

Ireland's unique selling point is the perception that food coming from the green island is clean and wholesome. Why would we want to besmirch this image and provide ammunition for unscrupulous competitors to expose the fact that our food is not as pure as the marketers suggest. We need to maintain our special GM status in an increasingly competitive world.
Although GM animal feed is widely available in Ireland it is quite different to growing GM crops in the environment.
We need to beware of the' herd mentality' where regulators and politicians in this country closed their eyes to huge financial risks that our children will have to pay for. The GM policy could be even more important to a country that needs to sell 80% of its food product to educated consumers who wish to know the providence of their food.
Any benefits can be proved elsewhere in countries whose economies are not dependant on exporting food to markets where GM is a concern

Ireland's island nature provides us with a unique opportunity to stay GM free and to capitalise on the growing market for pure wholesome food that people can really trust.
At present the jury is still out on GM. For the sake of Ireland Inc, is it not better to act on the precautionary principal while the consequences are still unknown.

Freedom of Choice

In countries where genetically modified crops are planted neither organic nor conventional farmers who grow in that area can label their produce GM free. Both agree that it is grossly unfair to deprive them of their freedom of choice and their Unique Selling Point in an increasingly competitive world.

Why would we risk the economic future of a country that is so dependant on food exports?

Any possible benefits that can be argued for can be achieved by doing the field trials in another jurisdiction where the strategic importance of remaining GM free is not as crucial to the national economy.

Why Now?
It is difficult to understand why Teagasc wants to pursue this course of action when BASF and Monsanto have recently made a decision to close down their research facilities in Europe having reluctantly come to the conclusion that after 20 years of research and PR campaigns, the European consumer will still not accept genetically modified foods.

GM Technology
It is now well accepted by the scientific world that the simplistic approach we originally had to the GM technology in the 1980s was flawed. The theory underpinning the technology of GM is highly questionable. The Human Genome Project Report 2001exposed the shortcomings in our theoretical basis.
The ongoing Amiga Project started December in 2011 with input from 22 research institutes and universities in 15 countries is funded by both the EU and industry. Critics of the report are concerned that it appears to be paying as much attention to market acceptance as it is to science.
In the Teagasc report, Visser and van Der Vossen authors of "Societal costs of late blight in potato and prospects of durable resistance through cisgenic modification" are part of a group of 6 scientists who own the patent on the inserting gene.
This seeming conflict of interest goes against accepted modern standards of transparency.

What are the benefits versus the risks and who will decide?
One has to suspect that there is a commercial imperative to suck Ireland into the GM 'growing club'.
Better to act on the precautionary principal at present the jury is still out and the consequences are unknown.

Darina Allen
Slow Food Councillor
on behalf of Slow Food Ireland
Monday March 26th 2012

42 Manor Place
Stoneybatter (36)
Dublin 7
26th March 2012

To Whom It May Concern,

I write to object to the field trial of GM potatoes. Irish food and drink exports are an important and growing sector of our economy and this ~~econo~~ is underpinned in part by high food safety standards. Emphasizing the quality of our food is beneficial in many ways and we must protect and enhance high quality + food safety standards, even to the point of erring on the side of caution. Please take this into consideration

Yours sincerely

Clare Taylor

BOYNE Valley

37

26th March 2012

The Environmental Protection Agency,
PO Box 3000,
Johnstown Castle Estate,
Co. Wexford

RE: Notification under the Genetically Modified Organisms (Deliberate Release) Regulations – SI No. 500 of 2003

Dear Sirs,

Ireland's Agriculture & Food Research Agency Teagasc, are proposing to trial GM potatoes at their Oakpark Research Facility in Co. Carlow.

Commencement of such a trial will terminate Ireland's 'GM-free status'. Ireland's clean, green, GM free status is our Unique Selling Point when marketing our food abroad and offers us huge opportunities within high value export markets. This move by Teagasc will cause irreparable damage to Ireland's image as a 'clean, green food island, and could potentially have unforeseen consequences for our environment.

I would like to make a representation against this proposal and enclose the required fee of €10.00.

Yours sincerely,

pp Malachy McCloskey
Executive Group Chairman

(38)

37 Primrose Gardens
Clarecastle
Co. Clare.

The EPA
P.O. Box 3000,
Johnstown Castle Estate
Co Wexford.

Date: 26/03/2012

RE: Representation from Mr. Joseph Doyle (private citizen) to the EPA regarding a notification under the Genetically Modified Organisms (Deliberate Release) Regulations – S.I. No. 500 of 2003, with regard to notification (G0469-01, Reference No B/IE/12/01) received on 27/02/2012 from Teagasc, Oak Park, Carlow for the proposed deliberate release of GM potatoes into the environment for purposes other than placing on the market i.e. to perform a field trial.

To Whom it concerns,

I appreciate this opportunity to formally lodge my opposition to the issuance the licence referred to above by the EPA, for the following reasons:

1. Damaging to Ireland's reputation as GMO free food production location – Food produced in Ireland has a very valuable reputation internationally which is supported by environmental credentials and the fact that we are a GMO free island. To a growing portion of the food consumer market this is a unique selling point which is very difficult to replicate in other locations, leading to significant added value for Irish produce. The intentional release of GM plants into the Irish environment will seriously diminish this value.
2. Potential environmental risk – As expressed in the title ("Assessing and monitoring the impact on the agri-environment of genetically modified...") and the body of the application, the environmental impact of growing GM potatoes is not known. Therefore there is a risk that that unforeseen impact could be negative. There is no quantification of this risk and nor is there a demonstrated need (either economic, environmental or other) which would justify the Irish State assuming this risk.
3. Ownership and exploitation rights of the background Intellectual Property and foreground intellectual property – In various communications Teagasc have stated, presumably for the comfort of the public, that no bio-tech industry is involved in the project. However, the patents relating to the GM potatoes are owned by organisations

outside the state and by definition this intellectual property, in order to be exploited, must be licensed for commercial production and exploitation. The most likely licensee for this type of technology would be a bio-tech industry. The terms of the license are unknown at present. Therefore, the economic return (or cost) is not known. Also it is not possible to know whether an unintentional release into other areas, by seed, pollen, tubers etc, would constitute an infringement the attaching intellectual property rights. This would put Irish potatoe growers at risk of litigation in the future. Additionally the obligations of Teagasc as a public research performing project partner in a FP7 project are not known. There is a risk that the agency will have an obligation to seek commercial avenues to exploit any intellectual property developed during the project. This will involve direct negation with bio-tech industry.

4. Risks of Monoculture – Relatively, very few patented GM crops are available compared to the varieties that are freely available. Commercially, to recoup development costs and generate royalty income, it makes sense to grow GM crops in large volumes of the single patented GM variety. They therefore contribute to monocultures rather than promoting bio-diversity. As Irish history has shown, monoculture carried large risks of dangerous disease. The crop in question is designed to be resistant to a particular type of blight and the Teagasc document discusses at some length the relatively low risk (though not non-existent) of mutations in the potatoe. However, it does not deal with the potential mutation of the *Phytophthora infestans* causative organism which is outside of the control of the research grouping. This is the real risk of monocultures, i.e. genetic mutation of the parasite, rather than the experimental crop. The risk of this happening is very real and exacerbated by monoculture. The Irish growing environment is very productive already. GM may bring greater production volumes for a period of time of a single variety of potatoe but carrying with it the risk of developing even more resistant diseases in the future which will be even more difficult to combat. Ultimately it will lead to a reduction in production volumes.
5. Inadequate safety measures – The project does not ensure adequate safety measures are in place. A 40 meters exclusion zone is not adequate to avoid unintentional release by pollen, material on foot ware etc. There is no independent body taking charge of destruction of residual material.
6. Dual mandate of the EPA – The EPA, as well as being the licensing authority for this project, houses the national contact point for the Environment strand of the EU Framework Programme that funded the project in question. The NCP has the role of providing advice and individual assistance to organisations applying for FP7 funding for environment related projects in Ireland. What confidence can the EPA provide that there is no conflict between its independent licensing role and targets and measures relating to its R&D funding role, particularly where it provided advice and assistance to the project applicant to acquire funding. .

Once again I appreciate this opportunity and I look forward to receiving your response.

Kindest regards

Joseph Doyle

(39)

Helen Roche
17 Cathedral Court
Ennis.
Co. Clare

The EPA
PO Box 3.000
Johnstown Castle Estate
Co. Wexford.

26-03-12.

Re: Teagasc G.M. Potato Trials

To whom it may concern:

I am writing to register my objection to Teagasc's proposed GM potato trials in Carlow. My concern is that cross-pollination may occur with these GM potatoes & potatoes outside of the trial. This would mean that Irish potatoes could no longer be guaranteed GM-free.

I believe that there are already blight-resistant potato varieties & that this trial is not in Ireland's best interests at the present time. I believe that GM trials should not be introduced into Ireland until the impact of GM plants is fully known & understood.

I believe that Ireland's "clean & green" image is vitally important & that these GM trials put this image at risk.

Thank you for taking the time to read about my concerns.

Yours sincerely,
Helen Roche.

P.S. I enclose €10 required.

(40)

27 Mount Pleasant Square

Ranelagh

Dublin 6

March 23, 2012

The EPA

P.O. Box 3000

Johnstown Castle Estate

Co Wexford.

RE: Genetically Modified Organisms – S.I. No. 500 of 2003

To the decision making board of the Environmental Protection Agency,

Thank you for giving me this opportunity to voice my opposition to the proposed GM trials in Carlow by Teagasc (G0469-01, Reference No B/IE/12/01).

Here are **5** points for consideration by your team;

(1) A GM future in Ireland would take our food supply out of the hands of our farmers and put it in the grip of corporations who patent GM seeds.

This creates, and more importantly cements, dependency between farmers and biotech firms (as evidenced in the USA). In other words, farmers relinquish control. This is a very dangerous outcome for a small island, given growing international instability over energy prices and energy sources. We need to become a self-sufficient island, not one increasingly dependent on imported technologies.

(2) The decision to run trials in Carlow is of paramount importance to the future of agriculture and tourism in Ireland. GM is not like switching to a low-energy light bulb. If it doesn't work, you can't take it back to the shop, or revert to your old lighting method.

Ireland has a world-famous reputation for its clean, green image. Why would be compromise this?

(3) Is it not sensible to reconsider this application for trials in 10 years time, when more research and evidence is available? Why should Ireland be a guinea pig, particularly when its people have continuously voiced an objection against GM?

(4) Advocates claim GM crops are safe because they have been in the public domain and food supply for 15 years now and there is no evidence they adversely affect our endocrine or immune system. This is not a valid argument. There have been no human trials where the safety of GM food has been directly compared with its unmodified precursor. However, much of the published animal findings give reason for concern. Evidence of GM pesticides have turned up in 80% of babies in utero (The Guardian, June 15 2011) reminding us of the remarkable complacency involved in the introduction of GM without sufficient longitudinal studies.

(5) This is possibly the single most important decision you will make in your lifetime. Our country's agriculture, health, food supply and tourism are all at stake. Please consider this question - are you happy to take responsibility for this decision and sign your name to its consequences? Or, as a precaution, wait for 10 years when Ireland can proudly reject / accept GM based on sound global evidence of its failure / success?

I thank you for taking these points into consideration and wish you strength and courage with your decision.

Yours Sincerely,

Susan Jane White

Susan Jane White

Health & food writer, The Sunday Independent

Mother of two

(44)

Niamh Ní Dhúill & Con Horgan
Gortbreac, Baile na Síodhe
Trálí, Co. Chiarraí

24/03/2012

SUBMISSION TO THE EPA

RE:

NOTIFICATION (G0469-01, REFERENCE NO B/IE/12/01) ON 27/2/2012 FROM TEAGASC, OAKPARK, CARLOW

FOR THE PROPOSED DELIBERATE RELEASE OF GM POTATOES INTO THE ENVIRONMENT FOR PURPOSES OTHER THAN PLACING ON THE MARKET IE; TO PERFORM A FIELD TRIAL

For the attention of:
The Director
Environmental Protection Agency
EPA Headquarters
PO Box 3000
Johnstown Castle Estate
Co. Wexford

A Chara

We are very concerned that Teagasc has proposed to trial GM potatoes in Ireland again. We feel that this is a very short-term attitude and narrow focus to the future of food in Ireland.

Ireland has the opportunity to develop as a source of real sustainable agriculture and food production, as a GM-free real sustainable food island, both for consumption in Ireland and for the export markets.

These trials represent the narrow focus that Teagasc places on growing and food and we see no evidence of their work in regards to examining potential for organic growing methods. GM potatoes and other GM foods are based on industrial farming, high in petrochemicals and other chemical use. This is not the vision of real sustainable agriculture and food production in Ireland, and it will damage our potential irreversibly. Trials, such as the one that is proposed will damage our currently very good image in relation to our food production. We urge the EPA to consider the following points when it is assessing the proposal for this GM potato trial by Teagasc:

1. A 10-year moratorium on all GM foods being trialed or grown in Ireland – the precautionary principle still applies.

2. Economically – is it not better in the long term to have a premium product which will be Irish Food that is GM free? Real sustiainable food production is what requires research and development at this critical time.

3. Study of soil ecology and effects on biodiversity – how is this being measured?

4. Where is the sustainability of GM? – it relies on petro-chemicals, which are increasing in price and have a large carbon footprint. It is very short term vision to intrduce GM to Ireland, even at trial stage.

5. What about consumer choice? – Study after study shows that the majority of people in Ireland and Europe reject GM foods.

6. The fact must be considered that genes interact widely with each other in the natural world they do not act in isolation, and this manufactured (not evolved) gene may react differently with other genes in the plant once released. Gene science is not straight-forward, it is not one gene – one trait. Each gene effects multiple traits, and so GM technology may have a lot of unexpected and undesirable impacts.

7. Organic potato cultivation has been shown to impact beneficially on soil organisms and we add our voice to IOFGA and other organisations to call upon Teagasc to also conduct research in this area.

8. There are GM free zones in Ireland, and buffer zones cannot be relied upon

These proposed trials are coming at a time when an increasing number of countries are imposing restrictions (e.g. China, Austria, Hungary) or outright bans (e.g. Peru, Greece) on GM crops. The reasons for these restrictions are:

- the risks of contamination of conventional crops, including organic crops: the proven threat of GM to health, biodiversity, and the impacts on soil, water and traditional seed strains, pollinating insects and wildlife
- the loss of control over national farming systems through the patenting of GM seed strains by multi-national companies, and increased reliance on their associated products, such as herbicides.

Precautionary Principle:
It may be some years since the last application for GM potatoes to be grown in Meath, but the precautionary principle still applies. We should not trial any GM crops in Ireland, unless it can be proven beyond all possible doubt that there will be no harm to our biodiversity, ecosystems or food chain.

Therefore we are calling for a 10-year moratorium on the trialing or growing of GM foods in Ireland.

is sinne le meas

Niamh Ní Dhúill & Con Horgan

42

LEAF

Laois Environmental Action Forum

Applegate House

Morette

Emo

Co Laois

March 22nd 2012

EPA Headquarters

P O box 3000

Johnstown Castle Estate

Co Wexford

Ref: GMO register No.G0469-01

To whom it concerns

Thank you for this opportunity to comment on this application. Please find enclosed the observations from Laois Environmental Network and LEAF. Also enclosed is a cheque for €10.

Yours sincerely

Theresa Carter

Theresa Carter

Laois Environmental Action Forum

Laois Environmental Network

theresaleaf@gmail.com

057 8646877

086 1590529

Observations on the Teagasc application to plant GM potatoes in Oak Park Carlow

- Laois Environmental Network believe that this project is a very short sighted action. While many other countries are scaling back genetically modified crops we should err on the side of caution until we can be sure there is quantitive, peer reviewed, reliable research to prove it will not be detrimental to our green image. This action could effectively destroy Ireland's image as a safe GM free island and cause an adverse market reaction to Irish agricultural produce. The immediate ramifications of this move threatens the Irish export market and in a climate where Irish agriculture is being hailed as the silver bullet for the Irish economy, this is a seriously dangerous move. If these trials are allowed to go ahead, Ireland's unique selling point as a GM-Free Island will be lost forever.

- Genetically modified organisms are "intellectual property" and cannot be used without the consent of the owner. Their use prevents farmers from saving their own seed leaving them dependent on external seed supplies and any vulnerabilities or increasing costs associated with them. We have fallen foul of the practice of putting all of our eggs in one basket enough times, why should we encourage a monopoly on our food.

- The blight resistance gene involves a patent that is owned by a group of scientists which includes two authors of reference 19(page 11) in the Teagasc Application. Conflicts of interest statements have not been made by the two patent holders yet they stand to benefit from acceptance of the GM potato.

- Given it's proximity to Laois we are extremely concerned that crops and seed in Laois may be contaminated or mutate and be unviable in subsequent years.

- The European Court of Justice decided in September 2011 that pollen of genetically modified plants (GMP) contained in honey counts as a food ingredient and requires authorisation. One of the consequences of this "reclassification" is that honey containing pollen of GMPs now falls within the scope of the regulation on GM food and Feed. As a consequence, honey containing GM pollen can be placed on the market only if the GMP in question has been authorised as a food and labelling requirements are observed. All unauthorised GMPs are subject to the zero tolerance policy. This GM potato has not been approved as a food

- http://ocs.jki.bund.de/index.php/GMOhoney/GMOhoney

- (Federal Ministry of Food, Agriculture and Consumer Protection)

- On page 27 of the Teagasc application it states that "Methods and procedures to protect the site" are all very commendable however recent thefts from the facility show that it is not secure. Someone was able to enter the site and remove 3 beehives over two separate visits. If it is possible to remove 18inch square boxes full of honey bees and then return for another one it is possible for someone to remove a potato. http://www.carlow-nationalist.ie/tabId/369/itemId/13948/Sport/SportsBlog.aspx

- On page 23 of the Teagasc application "critically there is no involvement by the ag-biotech industry in the proposed field experimentation in oak park". This project is part of the EU-funded AMIGA programme participants in AMIGA are also members of other potato and blight related networks and consortia. Many aspects of these are funded partially or fully by biotech companies Syngenta, Du pont, Certis, BASF, Bayer, AVEBE, Dacom, Dow, Germicopa.

- There are serious questions to be answered about conflicts of interest relating to the European Food Safety Authority's GMO panel experts who approved. Again this calls for peer reviewed research funded outside the industry and disassociated from any companies or their partners who stand to gain from GM products. http://www.corporateeurope.org/publications/approving-gm-potato-conflicts-interest-flawed-science-and-fierce-lobbying

(43)

F.A.O.: The EPA, PO Box 3000, Johnstown Castle Estate, Co. Wexford.

Trevor Sargent

37 Tara Cove,

Baile Brigin,

Co. Átha Cliath.

23ú Márta 2012

Re: Representation to the EPA against release of GMO under Regs. - SI. No. 500 (2003).

A Chara,

I write having worked closely with the farming and food industry as **Minister of State for Food and Horticulture 2007 – 2010** and as a public representative from 1991 – 2011 in the horticultural area of Dublin North. I have met no farmer or shopper who supports the current application to release GMO's in to the Irish environment. Selective non-GM breeding trials of blight resistant potato varieties are welcome developments, however.

I write therefore to object strongly to this attempt being made *ipso facto* under S.I. No. 500 (2003), to effectively end the GM-free status of Ireland, *'the clean, green, food island'*. Irish conventional and organic food sectors currently succeed in selling produce to customers in Ireland and in other countries where **Ireland is promoted as a non-GM and very natural food producing island.**

The Teagasc contention that this application is independent of the ag-biotech industry gives no comfort to all growers and farmers now nervous at the prospect of a GMO release being **used by non-GM farming competitors elsewhere in the world to bad-mouth Irish produce** as being tainted by GM, in a similar way to international rumours damaging to all Irish food and drink produce after the pigmeat dioxin crisis erupted, which required a tax-payer funded expensive PR battle to be waged worldwide.

It is likely that ag-biotech companies will see any GMO release notification as a vital **precedent** to encourage any subsequent efforts they may make to seek their own GMO releases in Ireland. Ireland's independent island-based GM-free status is already being compromised by this Teagasc application, given that it is part of a cohort of GM potato lines being researched also in the Netherlands over this 2012 – 2015 period.

Contd./...

The Teagasc assessment documentation refers to a 40m isolation distance around the perimeter of the applied for GM trial area. This tacit acceptance of GM crops co-existing with non-GM crops does not inspire confidence in consumers or farmers, including organic **farmers whose licences, and effectively, livelihoods would be ended if GM contamination was detected on their non-GM farms.**

The primary argument behind this application from Teagasc is that this trial might prove a selective advantage if the GM potato can show a resistance to the blight pathogen (*Phytophora infestans*). Any such advantage is short term as the blight pathogen can develop subsequently to 'out-smart' the GM technology, agri-chemicals or advanced non-GM breeding. **However, if GMO releases in to the environment are permitted, the marketing of GM alongside non-GM Irish potatoes will, I predict, accelerate the demise of Irish potato consumption.** It requires significant promotional campaigns to get consumers to buy and cook potatoes nowadays. Selling a GM potato, according to all the EU barometer market research would be a 'death-knell' for potato consumption, I fear.

I have and will continue to advocate that Teagasc use their considerable expertise to **combat blight with non-GM advanced potato variety breeding techniques.** The clean green food island image which all who work in the Irish food and farming sector have worked so hard to build, could be easily set back, or even destroyed, by a reckless dalliance with a GM trial. **I urge that this Teagasc application for a GMO release be rejected.**

Le gach dea-ghuí,

Trevor Sargent

Email: trevor@balbriggan.net

(44)

Irish Apple Growers Association

March 21st, 2012

The EPA,
PO Box 3000,
Johnstown Castle Estate,
Co. Wexford

To whom it may concern,

I am writing on behalf of the membership if the Irish Apple Growers Association, asking that the EPA do **not** grant permission to Teagasc for a deliberate release of GM potatoes into the environment.

Having read much of the literature (for example, Connors and Dale, 1996, in Theor Appl Genet, pages 505-508) purporting to show that levels of outcrossing from male sterile varieties such as Desiree are low, I am unsatisfied with the assumptions made in these publications.

On reading, it is obvious that within a short distance, very significant levels of outcrossing are apparent (in the region of 25%). The research then goes on to show that at distances of 10 metres, levels fall, so that perhaps 1 in 5000 flowers is pollinated (a not insignificant amount from the point of view of eliminating risk of gene escape, but much lower than 25%).

What the studies fail to show (or even ask) is what the level of outcrossing would be if the adjacent rows were not there to trap the initial pollen flow.

In essence what is reported is a situation where seeds from plants ten metres into a field are tested and found to have low levels of the transgene, and then this is said to be equivalent to saying that a gap of 10 metres is adequate to stop gene flow.

This is clearly not the case, as if the first line of non-GM potatoes were located slightly further from the GM crop, we could still expect the high level of outcrossing/transgenes), as there is no barrier present to intercept the insects carrying the GM pollen.

It is entirely incorrect to equate what is found ten metres into a test plot planted adjacent to the GM crop plot, with what would be found at the edge of a test plot located 10 metres from the GM plot. In actual fact, the levels of outcrossing could be just as high (i.e. 25%) at the edge of a test plot planted 50 metres from the GM plot, if these are the first plants that the insects carrying the pollen encounter.

Given that this is the case, determining a safe distance to eliminate the risk of transfer of GM pollen is much higher than implied by Teagasc, and should not in any case be less than the distance typically travelled by a pollinating insect to the first non-GM open flower that it meets, which could easily be a km or more away.

This is perhaps implicit in the quote from Ellstrand (in the book Dangerous Laisons? When cultivated plants mate with their wild relatives (John Hopkins University Press)), where he states "while sterility may limit chances for hypridization, potato's perenniality and ability to reproduce vegetatively may foster the persistence and spread of hybrids even if their sexual fertility is reduced".

In addition, the proposal by Teagasc to put the field to grass for a few years post the trial are not satisfactory from the point of view of eliminating and true potato seeds

Moorstown, Cahir, Co. Tipperary con@theapplefarm.com

that may carry the gene of interest. I have personal experience of cultivating a grass field for the first time in 40 years, and finding volunteer potatoes growing there in the season of the cultivation. It is certainly the case that true potato seeds can remain dormant in the soil for periods of much longer than ten years, and to control for this risk would require annual cultivation of the field for a significant number of years after the trial.

Given these grave deficiencies in the proposal put forward by Teagasc, our group is asking that their request for deliberate release be denied. It is for all intents and purposes impossible to control for the risk of gene escape in an open field trial such as this one, where crops of non-GM potatoes will be grown within the flying range of insects carrying the GM pollen, and only the excision of all flowers prior to opening (not something that Teagasc are proposing) would limit this potential in a reasonable way.

Yours truly,

Cornelius Traas

Moorstown, Cahir, Co. Tipperary con@theapplefarm.com

Submission to the EPA Regarding Teagasc Application to Field Trial GM Potatoes.

45

From – Audrey Flynn, The Millpool, Cappaduff, Mountshannon, Co Clare. 25th March 2012

With regard to the above application I would like to register a number of concerns with regard to, and my strong opposition to, the proposed planting of GM potatoes by Teagasc, as outlined in their recent application to you.

1. -My first concern is to do with the process.
Under the Aarhus Convention on Access to Information Public Participation in Decision-making and Access to Justice in Environmental Matters, people in Ireland have a legal right to information and input into decisions affecting their environment or their health when affected by the environment. The Aarhus Convention, having been ratified by the EU, obliges the Irish government via the Treaty of Rome to ensure those legal rights are upheld. Overall there has been negligible public participation in decision-making regarding GM crops, GM food or GM feed policies in Ireland since GM crops were first commercialised. An opportunity to respond to this one discrete part of GM activity in no way fulfills the information and input rights of the public as specified in the Aarhus Convention. In addition, with regard to this particular application a time span of 28 days for the public to reply to a complex 35-page technical document is too little, especially for people who are not familiar with the topic and who therefore need additional research time. Also the time span is much too short for any organisation who wishes to engage in meaningful consultation with its members.

2 – The purpose as stated by Teagasc is unreasonable. The application states (F.1) "the purpose of this release is to" and then describes 3, the third of which states: "employ the project's resources as a tool for education and demonstration in order to proactively engage and discuss the issues that most concern stakeholders and the public at large in regards to the cultivation of GM crops in Ireland". In other words, one purpose of the trial is to enlighten people in Ireland AFTER the GM pototoes have been planted. These plants by their nature can reproduce themselves (potatoes do so both vegetatively and sexually, by tuber and seed) and therefore can spread uncontrollably so that they are un-recallable if later problems arise. And problems can and do arise -
Recall the GM-rice contamination furore in 2006-7 where over 30 countries worldwide found unapproved GM-rice in its rice supplies. Investigations traced one source for at least 2 of the contaminating GM-rice strains: a rice research station which seems to be attached to Louisiana State University. The official report [1, pp5, 7] describes how no physical explanation could be found for the contaminations – there was more than one – a situation described as an Act of God by a Washington Post article! Eventually Bayer paid $750 million to end the resulting lawsuits.
GM-contaminated Canadian flaxseed found in Germany in 2009 likewise caused an EU ban on all Canadian flaxseed and froze the flaxseed market in Canada. The culprit was a trial-stage GM flax, charmingly called CDC Triffid, the development of which was abandoned in 2001. Again the route of contamination from this trial has not been discovered.[2]

From 2004-2006 GM-contaminated papaya were detected by the Thai government which disrupted papaya exports. The source of the contamination was traced to a government research station doing trials on GM-papaya trees.[3] - These incidents show that trials of GM crops pose risks, even trials involving university and government institutions.

[1] http://www.aphis.usda.gov/newsroom/content/2007/10/content/printable/RiceReport10-2007.pdf
[2] http://agcanada.com/daily/testing-seen-as-best-defense-against-triffid/
[3] http://www.plantphysiol.org/content/147/2/487.full.pdf+html

3 - A reasonable and valid model of resistance in reproducing living organisms involves each organism – in this case, the potato and the late blight – developing resistance in reaction to stressors emanating from each other. This results in a vicious cycle of resistance developing. It is likely that looking at other elements in the relationship between the blight and pototo, eg, potato husbandry issues, would yield better results and less environmental damage. I buy blight resistant potatoes in my local village that have travelled 8 miles to get to me and are grown organically so have no chemical pesticide/fertiliser run off, a very important factor in my buying choice, living close to Lough Derg as I do.

4 - As the Environmental Protection Agency your role is both specific, as in this one application, and big picture – how does this application fit into the Irish Environment big picture – While of great interest to scientific minds, can we do this?, how can we do this? How far can we go with this? etc, the main benefit of GM really is to allow for patenting and ownership of organisms for profit by companies – such monopolising of the food chain for profit has had huge negative consequences environmentally in other places.

5 - With regard to the political aspect of this – EU funding for the planting – I urge you to keep Ireland GM free – at the very least put in place the suggested 5 year moratorium on GM planting in Ireland – there is already so much GM planting EU wide, that Ireland is particularly well suited to remaining GM free and profiting enourmously from that reality when the rest of Europe is regretting and unable to get back from its ill thought out rush into a technological intervention into the food chain that has in no way yet proven to be safe.

To close, I look forward to your detailed response to this submission. My hope is that we can learn from the mistakes of others rather than making them ourselves and bitterly regretting them. I offer you every good wish in the making of your decision on behalf of the Irish People. To make such a decision with such far reaching consequences on behalf of a people/country naturally carries with it an equally large and far reaching responsibility. In the carrying out of that responsibility my hope is that you as individuals can live up to the responsibility and out of an awareness of all its implications make a decision for the good of this country and people and one that will allow you to sleep easy at night.

Yours sincerely,

Audrey Flynn

Attached additional info from the Internet this morning raising worrying questions about GM & its larger National & International implications & Impact.

Did Bertie Ahern take bribes to back GM crops in Europe? from the Internet Has Many - Raises worrying questions

Bertie's resignation from Fianna Fáil, following the Mahon Tribunal report that he took bribes while Taoiseach, raise the question whether his benefactors include agri-biotech companies such as Monsanto.

In 1997, Fianna Fáil issued a pre-election promise never to allow GMO crops in Ireland. But only months later, Taoiseach Bertie Ahern caved in to pressure from US biotech industry lobbyists. In his bestselling book Seeds of Deception: exposing corporate and government lies about the safety of genetically engineered food (ISBN 1-903998-41-7), author Jeffrey M. Smith quotes journalist Bill Lambrecht describing how Washington's biotech connections came into play during a carefully orchestrated reception for Bertie Ahern at the White House on St. Patrick's Day 1998:

"His vote was needed to carry the EU's acceptance of Monsanto's GM maize. When Ahern had lunch with National Security Advisor Council Director Sandy Berger, the topic that Berger chose to focus on was on the need to get that maize vote. Again, when Ahern met Senator Bond from Missouri and several members of Congress, the issue was GM maize. According to Toby Moffett, a former congressman turned Monsanto man, 'Everywhere he went, before people said Happy St. Patrick's Day, they asked him, What about that corn vote?' The amazed Moffett said, 'I'm fifty-four years old, and I've been in a lot of coalitions in my life, but this is one of the most breathtaking I've seen.' The next day, Ireland cast its vote in favour of Monsanto's GM maize, the first time Ireland acted in favour of a GMO release. When revelations of the events in Washington were made public by Lambrecht in the St. Louis Post Dispatch, Genetic Concern charged in a press release, 'US multinationals have more influence than the Irish electorate.'"

From then on, Bertie Ahern actively supported the biotech industry's efforts to force GM food and crops into Europe - against the wishes of 70% of consumers and the majority of Member States. Ireland never voted against EC requests to legalise new GM food and crops from 1998 to 2007.

In 2002, the Irish scientist Dr. Barry McSweeney who was then CEO of the EU Joint Research Centre was accused by Greenpeace of trying to suppress the publication of the JRC's "Scenarios for Co-existence" report which found that GM crops inevitably contaminate conventional and organic crops and may cause 40% higher production costs for EU farmers. But in 2004, Mary Harney appointed McSweeney, a former Director of BioResearch Ireland and Biocon Biochemicals, to the new post of Chief Scientific Officer of Ireland. McSweeney was later forced to resign after it emerged that his PhD was a fake.

Whilst President of the European Parliament in 2004, Pat Cox repeatedly denied the existence of any scientific evidence of GM risks to health and the environment.

Finally, the then EC Health and Consumer Affairs Commissioner David Byrne terminated the EU-wide embargo on the cultivation of GMO crops by placing two of them on the European Common Catalogue of Seeds - just two weeks before leaving office in December 2004 - to the fury of most Member States.

Under Bertie Ahern, Dr. John O'Brien was CEO of the Food Safety Authority of Ireland - despite the fact that he was a former Director of the International Life Sciences Institute, a Washington-based biotech & tobacco industry front group which infiltrated scientific committees of the World Health Organisation and the UN Food and Agriculture Organisation in order to downgrade tobacco health warnings and downplay the evidence that high levels of sugar in junk foods cause childhood obesity and diabetes. Despite opposition by the Oireachtas Joint Committee on Health, the Food Safety Authority of Ireland then authorised the sale of GM animal feed and food. The Department of Trade and Enterprise authorised 82 GMO patents. The Department of Agriculture's consultation procedure for a National Strategy on the "co-existence" of GMO crops excluded 80% of the stakeholders and failed to comply with the Aarhus Convention laws on public participation.

Fianna Fáil's parting shot - two weeks before losing the last election in 2011 — was made by then Agriculture Minister Brendan Smith who claimed that the next government of Ireland would vote in favour of new GM approvals at EU level.

Enda Kenny's Fine Gael party has now delivered on Fianna Fáil promise, by allowing Teagasc (the Food and Agriculture Development Authority) to request EPA consent to terminate Ireland's GM-free crop status by allowing a 4 year experimental cultivation of GM potatoes in Irish fields.

The 3,000-page Mahon Tribunal report found that corruption was "endemic and systemic" at every level of government in Ireland in the late 1990s." Has anything changed ?

(46)

John Fogarty
Louchane
Templederry
Nenagh
Co Tipp

Re: Submission to EPA

To whom it concerns,

Submission to EPA from John Fogarty Re. :-
Notification (G0469-01, Reference No B/IE/12/01) on 27/2/2012 from Teagasc, Oakpark, Carlow.
For the Proposed Deliberate Release of GM Potatoes into the Environment for Purposes other than Placing on the Market IE to Perform a Field Trial.

I wish to put on record total opposition to this proposal from Teagasc. on the following grounds :-

They cannot gaurantee that once the Blight Resistance Gene is inserted that it will not interact with any other organisms in the plant.

They cannot gaurantee that after the initial benefits that the Plat will no develop other problems. which could have a major effect on the Consumer, Farmer and most importantly the "Environment"

Very Best Wishes :- John Fogarty

Concerned Citizens of County Clare Rep. of Ireland

Stop GM Potato Trials (47)

In Ireland

We have opposed GM potato trials in Ireland. If this license is approved by the EPA, then Ireland would have lost its GM Free status and its position as a Green Natural Food Island.

This has severe negative economic and environmental implications for the Irish Food Producers and Consumers. Once GM is released into the environment, it cannot be withdrawn and risks cross-pollination with non GM varieties. We are expressing an opposition to these potato trials now, in expectation that you will respect our concerns. Thank You.

1. Maureen Murphy
2. Teresa Cannon
3. Colette
4. Rachel Lee
5. M Stafford
6. John McDonald.
7. Katie Lewis
8. Susie McNamara
9. Caitriona Lewis
10. S. Cahill
11. Sheila Connolly
12. Ana Ní Shuilleabháin
13. Bella Walton
14.

ENVIRONMENTAL PROTECTION

15 Susan Killeen
16 Melanie Rae
17 Patrick M Killeen
18 Sinead Barrett
19 CORA NORMAN
20 K Hamel
21 Clare Townsend
22 Patsy Lewis
23 Chris Stevens
24 Dawn Hamel
25 Mariel Davila

An tIonad Glas, The Organic College Submission to the EPA with regard to the Notification (GO469-01, Reference No. B/IE/12/01) on 27th Feb. 2012 from Teagasc, Oakpark, Co. Carlow

For the proposed deliberate release of GM potatoes (2012-2016)

The Staff, Students and Past Students of the Organic College would request that this request for permission to deliberately release GM potatoes by Teagasc be denied on the basis of lack of due care within the proposed handling of the GM potatoes, need for further studies before any open field trials of these GM potatoes and the potential of this specific GM potato to cause the Phytopthera infestans fungus to mutate and undermine existing resistance systems present in varieties of potatoes presently in commercial production in Ireland.

Should the EPA give permission to Teagasc to release we would submit that it be a requirement that all GM potato materials not used in feeding trials or other analysis be steam sterilised and that suggestion of pit burying the GM potato materials shows a lack of understanding of the potential contamination risk such GM materials could be.

With regard to the detail of our objection we have made specific notes of question from Teagascs Notification to the EPA as follows:

4 Dissemination

It is notable that in the Teagasc submission although only 36% seed germinated under the controlled conditions of a greenhouse during the pollen mediated gene flow study with cv British Queen in 2005 however in the 2010 study 69% of seed produced germinated. The variation between the two studies is so great in terms of distance of seed produced from the donor plot as well as numbers of berries produced and the quantity of viable seed produced would call the results into question and imply that further studies in this area are required before any definitive statement be made as to the level of pollen dispersal in potato species under Irish conditions. The potential impact on the pollinators that are involved in the dissemination of potato pollen should also be fully studied prior to an introduction of a gm variety of potato into open field trials.

5 Geographic distribution of the plant

Although the centre of origin for the potato is the Andes region of South America it is Peru that is accredited with the greatest biodiversity of the potato species. It is notable that Peru has taken a 10 moratorium on the growing of GM crops such as the potato as a

measure to protect their biodiversity and agricultural production system. Such a measure would be worthwhile in Ireland also as a wave of new, poorly tested GM crops come on line. Given the failure of Round up Ready or Bt toxin producing GM crops to hold up to initial PR promises and evidence of a mounting transgene treadmill, Ireland is best served by a continued precautionary approach.

7. Other potential interactions, relevant to the genetically modified organism, of the plant with organisms in the ecosystem where it is usually grown or elsewhere, including information on toxic effects on humans, animals and other organisms.

Plant NBS-LRR proteins generally produce antibodies when injected into mammals, but the species-specific processing of the disease resistance proteins, which contribute to the immune response, has yet to be investigated. Investigation of the impact of the Rpi gene products on pest species, insect biodiversity and soil micro-organisms should be investigated in a C1 biohazard containment greenhouse rather then in the open field to establish a baseline of interaction prior to any field trials and the results published to aid stakeholder information and consent.

Substantive equivalence to the cv Desiree is stated as being proved by way of previous trials in the Netherlands, however this information and the raw data from same, is not in the public domain. As such it should not be considered as proven for the purposes of the application for permission to grow the GM Desiree potatoes. Further studies need to be undertaken to prove the GM potatoes equivalence to the cv Desiree variety by way of plant pathology studies against the range of fungal bacterial and viral diseases potatoes fall prey of.

Issues with regard to the Rpi-vnt1.1 genes themselves, as there is commonality to the Tomato Mosaic Virus resistance proteins there is the danger of not only causing evolution of the P. infestans to overcome the Rpi resistance system (which also gives protection to a number of commercial Potato varieties with late blight resistance eg Sarpo Mira's) but could also undermine the resistance system in Tomatoes with resistance to the Tomato Mosaic Virus. This could be undermining to the many tomato growers in the Republic of Ireland and Northern Ireland. The potential to also impact Tomatoes vulnerability to late blight should also be considered, were the P. infestans to develop methods to overcome the Rpi resistance mechanism. These potential impacts of the trials have not been dealt with in the submission from Teagasc.

D. INFORMATION RELATING TO THE GENETICALLY MODIFIED PLANT.

2 Information on the sequences actually inserted/deleted.

a) Although it is good to see that no antibiotic resistence or NptIII genes are inserted along with the Rpi transgene there is also potential that other DNA material from

the pBINAW:Rpi-vnt1 plasmid may have inserted at random sites throughout the genome. Just because these encoding ORFs were not inserted does not rationalise the supposition that the A15 plants 'are therefore considered to not contain vector backbone integration'. Random insertion events are common occurances under these transformation processes and should be ruled out before field trials by genomic and protein studies looking at changes to the cv Desiree genome and protein profile.

b) It is notable that there is no detail given as to the insertion location in the GM desiree variety. Although the A15-031 GM line has 2 copies of Rpi inserted there is no detail on the site of insertion or the genes disrupted or deleted by way of these two insertion events. Genomic studies with regard to this should be undertaken to determine the sites of insertion and the protein/enzyme/phenotypic disturbance said insertions would have entailed.

4. Information on how the genetically modified plant differs from the recipient plant in; a) b) and c)

Calling substantive equivalence on the basis of gross phenotype similarities without further genomic, protein and enzymatic comparisons is to undermine the scientific basis of the trial. Such studies need to be undertaken before any field trials are approved.

Given that the results of the Netherlands trials quoted under this heading are not available for analysis of the raw data it is unwarranted to take this results on board within the request for approval to trial the GM potato.

5 and 6 (pp19)
The A15-031 line is quoted as being 'genetically stable' which some may take as implying that it is not prone to horizontal gene flow. However where a transgene like this offers selective advantage there is a high likelihood of horizontal gene flow through alternative vector models such as through the soil micro-organisms.

Developing a tracking mechanism such as a PCR/elisa type detection system to analyse transgene movement into soil micro-organisms like that seen with RR transgene systems would benefit the debate on the stability and immobility of this transgene product. Without such a mechanism to study the potential movement of the transgene, statements such as 'the cisgenic a15-031 material is not expected to interact any differently within the agri-environment...' are meaningless and amount to wishful thinking in the absence of hard evidence. C1 as a minimum containment level, trials observing the interaction and mapping transgene flow would support this argument but evidence of such research is not supplied.

7. (pp19) Studies should be undertaken to establish that there is no toxic allergenic or harmful effects on animal/human health and/or the environment rather then depending on a vague hope that researchers are 'not expecting' such effects.

In conclusion, Consent should not be considered until the potential toxicity (including immunogenicity) of the Rpi gene products, breakdown products and other altered proteins/enzymes produced as by-products of the GM transformation process, are fully investigated and reported, and taken into account.

(49)

Dublin South East Green Party
16/17 Suffolk Street
Dublin 2

23 March 2012

The EPA
P.O. Box 3000
Johnstown Castle Estate
Co. Wexford

Dear Sirs,

GMO Register Number: G0469-01
Teagasc Field Trial to Test GM Potatoes – 2012

I am writing to you in relation to the above application for the deliberate release of GM potatoes and to make representations on the notification in accordance with the requirements of Article 16(1) of the GMO (Deliberate Release) Regulations, S.I. No. 500 of 2003.

The Green Party in Dublin South East believes that this application is flawed and that the deliberate release of GMO should not be allowed.

We are concerned that there has been insufficient public consultation into this serious issue and, as such, the application process is flawed and should not be allowed to proceed. The applicant has provided a detailed 35 page document in relation to technical issues and, as such, the 28 days allowed by the Environmental Protection Agency is insufficient to allow for proper public consultation. This is part of the negligible public engagement in relation to this significant decision and represents a failure to uphold the rights provided in the Aarhaus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. Article 6 bis of the Convention specifically deals with public participation in decisions on the deliberate release into the environment of genetically modified organisms. This Convention has been ratified by the European Union and, as such, the Irish Government is obliged to ensure these legal rights are upheld. GMO policy should not be considered in discrete pieces with little time to respond which undermines public engagement and public participation in decisions. As such, we believe that the application process is flawed and that the application should be denied until a more comprehensive process is established.

Furthermore, we believe that the purpose of this application is flawed and unreasonable. Teagasc in the application, state that "a primary goal of the project is to proactively interact and debate the issues with the general public" and that they intend to "employ the project's resources as a tool for education and demonstration in order to proactively engage and discuss the issues that most concern stakeholders and the public at large in regards to the cultivation of GM crops in Ireland." In a Press Release related to this project, Teagasc have stated they will "conduct an outreach programme with stakeholders and the public through focus groups and open days, to facilitate an inclusive and impartial discussion on the issues that most concern people." These statements reflect that Teagasc wish to use the deliberate release to promote public debate and engagement. This is a flawed and unreasonable purpose, given that public engagement has not been exhausted before deliberate release was considered. The outreach programme, focus groups and open days described by Teagasc should take place and be completed before planting.

We have enclosed the appropriate fee of €10 as required.

Yours sincerely,

Patrick Costello
Chair
Dublin South East Green Party

50

Adamstown
Ballinhassig
Co. Cork.

25th March 2012

E.P.A.Licencing Section
P.O.Box 3000
Johnstown Castle Estate
Wexford.

I wish to object to the granting of a licence to Teagasc for testing to produce blight-resistant GM potatoes.

I am an Irish citizen and grower. I object for the following reasons.

- Risk assessment is too lax.
- The risk to Ireland's image as a credible food-producer far outweighs any possible benefits.
- Whatever commercial advantage the country might enjoy as a small, clean,island producer is lost once a GM crop is introduced here.
- Cross-contamination of other crop species either immediately or over time is not ruled out.

I refer to the opening paragraph of the Teagasc application:

"Teagasc are applying to the EPA for a licence to undertake a series of field studies using GM potatoes resistant to potato late blight disease **to determine the potential impact this technology could have on our ecosystems.** "

The stated aim of the trial is deeply flawed based on a spurious assumption of neutral impact outcome. The very trial itself could have a catastrophic "impact" on "our ecosystems".

Teagasc should not be granted a licence for the above reasons.

Gertrude Brockie

Gertrude Brockie M.A.

Encl. ch. no. 420 €10

Zoe Obeirne
219 D Oliver Bond Hse
Bridgepoint St
Dublin 8
Tel 0858017575
Email zeeobeirne@gmail.com.

Monday 26th March 2012

Dear Mr Tom McLoughlin
Environmental Protection Agency,

Thank you for taking my call last week with regard to the proposed GMO (deliberate release) Regulations S.I. No 500 of 2003

I wish to strongly object to the application from Teagasc, Oak Park, Carlow, dated 27th February 2012 seeking consent to carry out a field study of GM blight resistant potatoes.

This application should be refused because the main reason for genetic modification of seeds is profit, not human health and welfare.

80% of genetic modification of seeds, is so that they are resistant to the herbicide 'roundup' produced by Monsanto

Monsanto were exposed in the Guardian newspaper on ~~2nd March~~ Mon 3rd January 2012, as though the US embassy in Paris, advising Washington to start a military-style trade war against any European Union country which opposed GM crops. This policy would be "sustained over the long term", since "we should not expect an early victory".

Monsanto is ~~has~~ targeting Europe, this is abundantly clear.

The seeds they create are patented and potato farmers who use these seed potatoes will be unable to keep seed potatoes from the harvest, to plant the following year. This is creating debt for farmers where there is none now. Farmers will be legally prosecuted if they sow the GM seeds they harvested the following year, under copyright

Technology in the form of terminator ~~genes~~ genes exists, and can be used to render GM seeds infertile

Studies on hamsters have shown that after 3 generations, hamsters fed on a GM diet were unable "to have babies"

- Ireland is pro life, anti abortion. How can we, in Ireland, possibly accept the infertility risk of GM foods. This food may cause widespread infertility in 3 or 4 generations if it becomes popular in Ireland.

GM food has also been linked to lower testosterone in men.

- This is food colonialization in Ireland by Monsanto. If sown outdoors, the GM plants could cross-breed with other varieties of potatoes and then the seeds would be protected under GM patent. Then any farmer trying to use the crossbred GM potatoes for seed could be prosecuted.

- We need to promote organic agriculture and innovation in Ireland not GM foods, which endanger health, fertility and wellbeing.

In the media these potatoes are being presented as blight resistant. Are they also resistant to the herbicide roundup? What link does Monsanto have to these trials?

- We must protect the integrity of our food supply for future generations!

Yours sincerely
Zoe Beenker

43 Sitric Road
Dublin 7

23 March 2012

Re: Trial GM Potatoes in Ireland

On behalf of the Sitric Community Residents' Association, we wish to lodge an objection to Teagasc's application for a licence to grow Genetically Modified Potatoes in Ireland.

We are based in the heart of Dublin and enjoy being able to walk a very short distance to the Fruit and Vegetable Markets where we can confidently purchase fresh Irish products which we know are not genetically modified and which we can be sure are grown in high-quality Irish soil.

It has been suggested by Minister McEntee that responsibility for food safety rests primarily with food business operators, but we cannot hand over this responsibility to business operators. No, individuals are responsible for what they choose to eat. We have a right and a duty to retain that responsibility. We must educate about food safety and clearly explain what is and is not, good for us, but we believe GM is a step too far.

We cannot sit by and allow Ireland lose its GM Free status for commercial purchases. Safety is all important and we believe that the safety of our food sector can be secured without moving to genetically modified produce. We are the consumers who have the purchasing power and also consumers who nourish themselves on home-grown produce, and we say **NO THANKS TO GM.**

Sincerely,

Paddy Pender

Paddy Pender
Secretary,
Sitric Community Residents' Association

53

16 Glenmore Road,

Off Glenbeigh Road,

Dublin 7.

Tel: 087 6412479

comcgrath@gmail.com

Re: notification (G0469-01, Reference No B/IE/12/01) on 27/02/2012 from Teagasc, Oak Park, Carlow for the proposed deliberate release of GM potatoes into the environment for purposes other than placing on the market i.e. to perform a field trial.

A chara,

1. Teagasc is being disingenuous in its framing of the application. On their website http://www.teagasc.ie/news/2012/201202-27.asp they state, 'After decimating the Irish potato crop in the 1840s and sparking the Great Famine, the organism (*Phytophthora infestans*) which causes late blight disease remains a very real threat to Irish potato growers.' Whether knowingly or unknowingly, the mere mention of the Great Famine has a profound psychological impact in the Irish context. Invoking the devastation wrought by the potato blight during this period implies that such a thing can happen again. However, the real cause of the Great Famine was not potato blight - it was the very specific socio-economic, political and agricultural situation in which Ireland found herself during the mid-19th century. The vast bulk of the Irish population, dispossessed and at the mercy of rack-renting landlords, were forced by unnatural circumstances to subsist on one crop – the potato. Monoculture of this type has demonstrated itself through history to be extremely dangerous to a population should the crop fail. The systematic destruction of the Irish food culture which had occurred through the centuries

and the forced dependence on the potato – along with a myriad of other complex historical causes – was responsible for the disaster of the Great Famine as much as blight itself. Luckily, we are not dependent upon the potato today for our survival – nor should we be. Artificially interfering with Ireland's natural biodiversity through genetic engineering runs the risk of making the country just as vulnerable to natural and unnatural disasters again. The agriculture sector should instead be investing in growing a wider variety of crops through natural organic means and increasing individual self-sufficiency, rather than artificially bolstering the potato against hypothetical threats. Research has shown that small holdings of organically grown vegetables and other crops may be more beneficial to Ireland's long-term food security and sustainability, rather than biotechnology. Furthermore, conventional selective breeding techniques have already produced blight resistant potato strains, such as Sarpo Mira. The trial proposal therefore overstates the case for potato varieties to be genetically modified to be resistant to blight.

2. There is an inherent danger to the local biodiversity from this proposed trial. Anyone who has grown potatoes knows the danger of leaving tubers in the earth, which is difficult to avoid no matter how stringent the protections. There is also the danger of berries being carried off and spread by birds and other animals. GM crops have shown themselves to be an insidious threat to biodiversity and organic agriculture. In Australia in 2010, organic wheat and barley farmer Steve Marsh had 60% of his crop contaminated by GM canola seeds which blew over his fence. Marsh subsequently lost his National Association for Sustainable Agriculture Australia (NASAA) organic certification as a consequence. GM segregation has failed everywhere.
3. The human health implications of this trial are troubling. *Scientific American* and *Nature Biotechnology* published a report stating that GM companies prohibit independent researchers from accessing the GM material required for environmental and health research, and tend to censor adverse findings. Nonetheless, an Australian National University team found that CSIRO Plant Industry's GM field peas, containing a gene from a bean, created foreign proteins that provoked immune and inflammatory responses in mice. French researchers also concluded that rats fed three different kinds of GM maize

showed 'significant' signs of liver and kidney damage. The Committee for Research and Independent Information on Genetic Engineering revealed a lack of scientific consensus on the food safety assessment studies used in the approval process for MON810 GM corn. Stanley Ewen and Arpad Pusztai of the Rowett Institute, Scotland, also found damage to the intestines and immune systems of rats fed GM potatoes. Canadian gynaecologists Drs. Aris and Lablanc have reported in the journal *Reproductive Toxicology* that they have found Bt insect toxins from GM plants in the blood of pregnant women and their foetuses. On 2 March 2010, the genetically modified Amflora potato was approved for commercial growing in Europe, after heavy lobbying by BASF. An antibiotic resistance marker gene called 'nptII' was inserted - designed to make the potato resistant to the effects of two antibiotics, neomycin and kanamycin. There are concerns that this antibiotic resistance could be transferred from the potato cells to bacteria dangerous to humans - reducing the effectiveness of these antibiotics in humans.

4. Ireland has built a reputation as a 'GM free country'. This trial and any subsequent cultivation of GM potatoes in Ireland has the potential to damage Ireland's competitive advantage as a producer and exporter of food. The demand for non-GM food outstrips the demand for GM produce. Despite the claims of advocates, poor countries of the world have consistently rejected GM crops which have been foisted upon them. The claim that GM food will 'feed the world' is emotionally-based and unsound.

Le meas,

Caroline McGrath

Caroline McGrath.

(54)

Kilcatherine, Eyeries, County Cork
http://www.friendsoftheirishenvironment.org

To: Environmental Protection Association
EPA Head Office
Johnstown Castle

Response to:
Assessing and monitoring the impact on the agri-environment of genetically modified potatoes with resistance to Phytophthora infestans, causative organism of late blight disease (2012 – 2016)

Date: 26 March, 2012

From: Friends of the Irish Environment

Time for response
The time (27 Feb- 27 March) to repond the the Teagasc application is too limited, particularly considering the length of the document (35 pages), its technical nature (requiring research and consultation for advice) and the time involved in properly consulting with members.

EPA should address the inadequacy of the time in which to make representations for future applications.

Right of the public to information and participation in decisions concerning their environment and their health as it relates to the environment
People in Ireland have a right to access to information and public participation in decision-making regarding their environment and their health as it relates to the environment under the Aarhus Convention, aka the Convention on access to information, public participation in decision-making and access to justice in environmental matters.

This right has been infringed by the manner in which the information for this GM potato trial has interfaced with the public.

Furthermore, under Article 7 of the Aarhus convention and as specified in paragraphs 3, 4, and 8 of Article 6 of the Convention, the public's right to participate in the policy decision-making process regarding GM cultivation in Ireland has not been upheld. In 2007 government policy stated a commitment to Ireland being a GM free zone. Change in this policy took place without public participation. Considering the nature of the issue, ie, GM, and the primary target of its effects, ie, food, exclusion from participation in its policy development is a very serious matter.

Purpose of the Teagasc trial

The Teagasc application specifies 3 purposes for the trial, the final one being as follows:

"Employ the project's resources as a tool for education and demonstration in order to proactively engage and discuss the issues that most concern stakeholders and the public at large in regards to the cultivation of GM crops in Ireland"

To have 'engaging and discussing' GM crop cultivation with the public and stakeholders AFTER the field cultivation of GM crops (by their very nature, crops outside of secure contained growing cannot be prevented from shedding pollen, tubers and seed) is underway is a most cynical exercise. Having this as a project objective is illogical, unreasonable and unacceptable.

If this purpose is being influenced by the EU dimensions of this project, it is not obvious from the application. The public have a right to know the origin and the current rationale for this third purpose.

Compliance with the SI No 500 of 2003

The Second Schedule, C.2 (1) includes the statement: "It is important not to discount any potential adverse effect on the basis that it is unlikely to occur".

However the Teagasc document has numerous examples that seem to discount adverse effects. For example, H6, p29:

"The Rpi-vnt1-1 is derived from the wild potato species S. Venturii and there is no evidence to suggest that this cisgene , or any other Rpi genes that exist in conventional potato varieties exert any toxic or allergenic effects to human health. The impact on human health is therefore negligible."

A reasonable interpretation of the Teagasc risk assessment is that it does not comply with the requirements of SI No 500 of 2003 as it appears to discount virtually all potential adverse effects with words like 'negligible' and 'no propensity'.

Resistance & Biodiversity

Biodiversity is now widely recognised as a vital source of biological resilience for dealing with future shocks and impending climate change manifestations. Biodiversity is also an matter about which we have international obligations.

GM potato cultivation uses a model that supports monoculture cultivation to fit with its food production model of industrial intensive (and unsustainable) farming. Large scale potato cultivation in general appears to ignore the fact that its model of large fields of cloned plants offer no genetic diversity to pests; a mixture of genetic types in a potato field (South American small holder grow up to 12 varieties) is a good biosphere-friendly tool for maintaining healthy plants. Large scale cultivation of a cloned plant also has a reducing effect on surrounding flora and fauna with knock-on effecs on diminishing biodiversity in those areas so planted.

The Teagasc GM potato trial is at odds with what is known about resistance of organisms. A pathogenic oomycete, when faced with a resistant host, is likely to favour evolving strains that can sooner or later overcome the host's resistance. This situation is reflected in the history of the late blight, Phytophtera infestans, since the mid-20th century when 2 mating strains were first recorded.

As the blight's genetic variation increased so did its ability to overcome the defences of more and more potato varieties, to the point where few varieties can resist Blue-13. In other words, a potato that is resistant this year may fall prey to a newly evolved blight strain next year. It is illogical and ill-advised to develop a risky (widely acknowledged as so) GM potato that is blight resistant, whose resistance could last for a short time only.

Cisgenic

The Teagasc application repeatedly refers to the GM Desiree cv as 'cisgenic'. The first reference in the text is "the cisgenic potato line A15-031". No definition is provided for the term anywhere in the application, but somehow the implication seems to be that 'cisgenic' is less risky than 'transgenic', particularly in how conclusions are drawn about 'cisgenic' plants in the risk assessment section.

Our desk research has shown that the 'cisgenic' concept is hotly-contested even regarding its numerous definitions. The term appears to have more to do with 'market acceptance' and 'consumer acceptance', and with the business aspects of potato production rather than the science of potato cultivation and its disease issues. Papers such as Haverkort et al in ref 19, p11 of the Teagasc report and Schouten HJ, Krens FA, Jacobsen E. EMBO Report 7 (2006) include aspects of food, farming and research policy, and food safety and GM regulations, consumer acceptance and market development as well as scientific matters. It is not helpful to confuse questions of risk and food safety by introducing issues of market penetration or consumer acceptance.

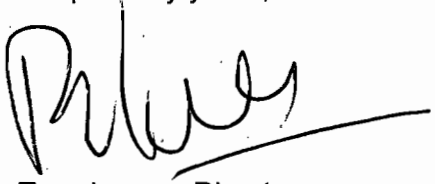
We found the science issues regarding transgenic plants well defined and informative in the following paper and consider that it puts the cisgenic issue in a more honest way than in the Teagasc application:

Wilson AK, Latham JR, Steinbrecher RA, 2006, Transformation-induced mutations in transgenic plants: Analysis and biosafety implications.

Biotechnology and Genetic Engineering Reviews. Vol 23 pp209-234.

Our view is that the only difference between cisgenesis and transgenesis is the source of the transferred gene(s): genetic engineering technology is common to both. How the term 'cisgenic' has come to be used regarding potatoes is quite dubious. It is the genetic engineering technique which gives rise to unpredictable effects and those effects are the source of the risk.

Respectfully yours,



Tony Lowes, Director

Attached: Check for €10.00

DR. DAVID M. HONAN
MB BCh BAO FFARCSI FJFICMI MSc (Physiology)
CONSULTANT ANAESTHETIST

Wexford General Hospital
Newtown Road
Wexford

(053) 915 3000

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ENVIRONMENTAL PROTECTION AGENCY
27 MAR 2012

E.P.A.,
Box 3000,
Johnstown Castle Estate,
Co. Wexford.

A Chara,

In the matter of:
Notification (**G0469-01, Reference No. B/IE/12/01**) on 27/2/2012 from Teagasc, Oakpark, Carlow,
for the proposed deliberate release of GM potatoes into the environment for purposes other than placing on the market, i.e., to perform a field trial.

Submission:

Objection is hereby made to the above proposal on the grounds of possible adverse public health effects. Current 'risk assessments' are inadequate; there has been no human testing, and animal studies give rise to concern. The GM transformation process is known to be highly mutagenic and can cause multiple disruptions to the ordinary command code sequence in the DNA. This may disturb the functioning of the cell in unpredictable and potentially hazardous ways.

It is not acceptable that statutory agencies use guidelines that do not reflect current health concerns.

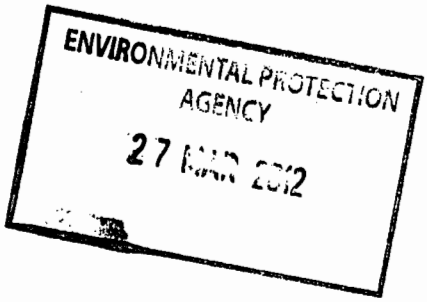
References:

Latham JR et al. The mutational consequences of plant transformation. J Biomed Biotechnol 2006 (2): 25376.

Cullen E. Irish Doctors Environmental Association. www.ideaireland.org

Is mise, le meas,

56



Ivy Cottage,
Boley Lower,
Abbeyleix,
Co. Laois.

21st March 2012

Environmental Protection Agency,
P.O. Box 3000,
Johnstown Castle Estate,
Co. Wexford.

SUBMISSION TO THE EPA

RE: NOTIFICATION (G0469-01, REFERENCE NO B/IE/12/01) ON 27/2/2012 FROM TEAGASC, OAKPARK, CARLOW FOR THE PROPOSED DELIBERATE RELEASE OF GM POTATOES INTO THE ENVIRONMENT FOR PURPOSES OTHER THAN PLACING ON THE MARKET IE; TO PERFORM A FIELD TRIAL.

Dear Sir / Madam,

I am making this submission in order to voice my opposition to the application by Teagasc to conduct outdoor GM potato trials. As a commercial grower myself I am extremely concerned about the prospect of GM trials in Ireland and this is a widespread concern amongst other growers.

I oppose these trials on a number of very important issues and these are outlined below.

1. Irish food exports and the food industry are of immense importance to Irelands economy and are very highly regarded internationally. Therefore to threaten our image of clean, green Ireland that produces uncontaminated and safe food would be enormously irresponsible.

2. Where is the demand or market for GM food in Europe? In fact, the general widespread consensus throughout Europe is that the European consumer does not want GM produce and certainly does not want GM trials or crops grown on their soil.

3. As a horticulturist I am deeply aware of the impact of monoculture crops as an agricultural system and the detrimental effect that this has on biodiversity. Our biodiversity is already damaged and to promote GM crops which are associated with monoculture cropping poses a risk to our fragile environment.

4. In the U.S it is now becoming clear that 'super weeds' are emerging as the weeds evolve to become resistant to herbicides associated with the use of GM crops. How can we know that the Potato blight fungus will not mutate in the proposed GM variety and become a new super blight?

5. Although very good for increasing shareholder dividends in large corporations, the move to GM crops has been a disaster for farmers around the world as they get trapped in situations where they must keep buying the GM seed and associated chemicals once they enter this type of industrialized production system. Irish farmers and ultimately the Irish consumer need to be protected from this by banning all GM trials, and by the government and statutory bodies like the EPA getting behind farmers and moving to a more financially and environmentally sustainable agriculture system that will sustain Irish farming families into the future.

6. How can Irish taxpayer's money be spent on this GM trail, when ultimately the beneficiaries will be the multinational corporations who sell GM seed?

7. How will Teagasc protect 100% the non-GM breeding programs that will be on this site? In other countries GM contamination has occurred outside of designated control limits, and ultimately if a rodent decides to eat a berry from the crop (the Desiree cultivar produces a particularly large number of berries) how will Teagasc prevent it from leaving the zone? Contamination of non-trial/non-GM crops is a worry for all non GM growers and the wider public and I appeal to the EPA to take these legitimate concerns on board.

Thank you for your time.

Regards,

Elaine Fahy

Elaine Fahy

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Ivy Cottage,
Boley Lower,
Abbeyleix,
Co. Laois.

21st March 2012

Environmental Protection Agency,
P.O. Box 3000,
Johnstown Castle Estate,
Co. Wexford.

SUBMISSION TO THE EPA

RE: NOTIFICATION (G0469-01, REFERENCE NO B/IE/12/01) ON 27/2/2012 FROM TEAGASC, OAKPARK, CARLOW FOR THE PROPOSED DELIBERATE RELEASE OF GM POTATOES INTO THE ENVIRONMENT FOR PURPOSES OTHER THAN PLACING ON THE MARKET IE; TO PERFORM A FIELD TRIAL.

Dear Sir / Madam,

I am making this submission in order to voice my opposition to the application by Teagasc to conduct outdoor GM potato trials, and in the hope that you will act decisively to protect biodiversity, our food sovereignty and our economy by refusing the application.

I oppose these trials on a number of very important issues and these are outlined below.

1) Irish food exports and the food industry generally are of extreme national importance, and to threaten our image as a producer of safe and uncontaminated food would be reckless in the extreme. European consumers have shown time after time that they do not want GM foods contaminating their food chain, and they will vote with their feet or in this case act by not buying Irish foodstuffs.

2) Although we as humans like to think we understand everything in the world, and can predict all the consequences of our actions the simple fact is we cannot. For Teagasc, the Agriculture and Food Development Authority of Ireland, to be attempting to introduce genes from non-edible plants into edible ones seems to be very counter intuitive. How can they guarantee that these proposed trials will not affect the edible nature of the potato, one of the four food staples we as humans exist upon?

3) The type of monoculture cropping that is associated with GM crops is detrimental to biodiversity in general, and if let develop will impact further on our already massively reduced vegetable genetic seed diversity. As the statutory body with the responsibility to protect our environment I appeal to the EPA to reject the application on the grounds that a move to this type of agriculture system will destroy our already damaged eco-system.

4) In the U.S it is now becoming clear that 'super weeds' are emerging as the weeds evolve to become resistant to herbicides associated with the use of GM crops. How can we know that the Potato blight fungus will not mutate in the proposed GM variety and become a new super blight?

5) Although very good for increasing shareholder dividends in large corporations, the move to GM crops has been a disaster for farmers around the world as they get trapped in situations where they must keep buying the GM seed and associated chemicals once they enter this type of industrialized production system. Irish farmers and ultimately the Irish consumer need to be protected from this by banning all GM trials, and by the government and statutory bodies like the EPA getting behind farmers and moving to a more financially and environmentally sustainable agriculture system that will sustain Irish farming families into the future.

6) How can Irish taxpayer's money be spent on this GM trail, when ultimately the beneficiaries will be the multinational corporations who sell GM seed?

7) How will Teagasc protect 100% the non-GM breeding programs that will be on this site? In other countries GM contamination has occurred outside of designated control limits, and ultimately if a rodent decides to eat a berry from the crop (the Desiree cultivar produces a particularly large number of berries) how will Teagasc prevent it from leaving the zone?

Thank you for your time.

Regards,

Owen Morgan

Re. Notification 60469-01 Upper Gortlin,
Ref. no. C/IE/12/ Abbeyfeale,
Co. Kerry.
26/3/12.

ENVIRONMENTAL PROTECTION AGENCY
27 MAR 2012

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To whom it may concern,

I am a potato grower who is an ex member of IFA potatoe committee

I cannot understand how any researcher of potatoe varieties could even contemplate risking all the good work that has been done down through the years on potatoe varieties in Oak Park.

The statement that Colleen will only travel 10m from Desiree is patently wrong when for instance there is also research on bees in Oak Park, bees can travel miles to collect dispersed pollen.

I strongly object to anything that would or could possibly affect the research on new varieties. Why don't they try to improve varieties like Colleens or Belanta which have slight resistance.

Here's hoping someone will use some common sense

Yours faithfully

Dick Wellwood.

Cllr Malcolm Noonan
Kilkenny County Council/Kilkenny Borough Council
Green Party Spokesperson
Environment, Community and Local Government
35 Fr Murphy Square Kilkenny
T: 353 56 7723276 M: 086 839 9418
E: Malcolm.noonan@kilkennycity.ie
W: www.malcolm.noonan.com www.greenparty.ie

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green party kilkenny

ENVIRONMENTAL PROTECTION AGENCY
27 MAR 2012

March 25th 2012

Environmental Protection Agency
PO Box 3000
Johnstown Castle House
Co Wexford

Re: (G0469-01, Reference No B/IE/12/01) 27/02/2012 Teagasc, Oak Park, Carlow for the proposed deliberate release of GM potatoes into the environment for purposes other than placing on the market i.e. to perform a field trial.

To Whom it may concern

The Green Party Comhaontas Glás is wholly opposed to any field trials of GM crops on the island of Ireland in the interest of our agricultural and genetic plant stock diversity and human health. We would urge the EPA not to grant a licence to Teagasc to carry out this field trial and believe that it is grossly irresponsible for the Irish Agricultural Advisory body to be involved in a project of this nature at a time when our agricultural reputation internationally has never been higher.

Furthermore Ireland has responsibilities under the International Convention on Biodiversity not to support policies or practices which would damage or impact adversely our biodiversity.

Throughout the European Union, consumers have rejected GM technology and even in developing countries, GM food aid is being rejected.

Ireland could further enhance its agricultural reputation by becoming a GM Free Zone. This could be achieved in cooperation with the Northern Ireland Administration and would place Irish agricultural produce at a premium within European markets.

The Green Party would ask that the licensing of these field trials be rejected and that any further applications for field trials of GM crops within the Irish environment be rejected also given the risk to human health and the environment.

Yours faithfully

Cllr Malcolm Noonan
Green Party Spokesperson
Environment, Community and Local Government

IRISH ORGANIC
FARMERS' AND GROWERS' ASSOCIATION

16A, Inish Carraig, Golden Island, Athlone, Co Westmeath
Tel: (353) 090 6433680 Fax: (353) 090 6449005
Email: info@iofga.org Web Address: www.iofga.org

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IOFGA SUBMISSION TO THE EPA

RE:

NOTIFICATION (G0469-01, REFERENCE NO B/IE/12/01) ON 27/2/2012 FROM TEAGASC, OAKPARK, CARLOW

FOR THE PROPOSED DELIBERATE RELEASE OF GM POTATOES INTO THE ENVIRONMENT FOR PURPOSES OTHER THAN PLACING ON THE MARKET IE; TO PERFORM A FIELD TRIAL

IRISH ORGANIC
FARMERS' AND GROWERS' ASSOCIATION

16A, Inish Carraig, Golden Island, Athlone, Co Westmeath
Tel: (353) 090 6433680 Fax: (353) 090 6449005
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In response to the above named Teagasc application dated 27/2/2012, IOFGA believes the licence should be denied on the various grounds, outlined below:

1. POTATO BLIGHT MUTATION

Blight is a major problem in potato cultivation. Consequently, commercial growers of conventional potatoes find it necessary to spray their crop with fungicides up to 14 times in one growing season, especially when climatic conditions are optimal for fungal growth. Late potato blight is a devastating plant disease caused by the fungus *Phytophora infestans* a pathogen of the potato and, to a lesser degree, the tomato. Specific to the potato, *Solanum tuberosum*, there are four main dominant resistant genes for blight infection, R1, R2, R3 and R4. As far back as 1909, hybridization with wild Mexican species was developed to address the issue of potato blight and this practice remains to this day. In spite of ongoing attempts and continuous efforts, the *P. infestans* fungus rapidly developed genetic resistance. The adaptability of the fungus has rendered blight controlling chemical fungicides ineffective.

P. infestans fungus contains mating types (A1 and A2), which first appeared in Mexico. Until 1978, only the A1 mating type was reported present in European potatoes after which the A2 mating type appeared and subsequently spread. Prior to that date the fungus had no sex life, meaning mutations were considerably slower in the EU. The presence of the two mating types greatly enhances gene exchange leading to accelerated loss of genetic resistance and also fungicide control.

The fact that the fungus *P. infestans* constantly mutates is a contentious issue for the proposed GM potato trial. It is inevitable that the blight will mutate during the course of this trial. To what extent is difficult to determine at the outset, however, it is clear that it will require continued trials to monitor the GM potato. One thing is for certain, it will have economic and environmental implications, as the natural balance will change in the trial area and potentially the surrounding areas. In a commercial situation this

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Email: info@iofga.org Web Address: www.iofga.org

would be disastrous and may result in a greater dependence on fungicides and therefore increased production costs.

It is clear from the Teagasc application that they will also be monitoring the fungus behaviour, however, this is not mentioned in the licence application and more attention must be given to this area to ensure that all possible outcomes are explored in terms of management of the GM variety and its relationship with *P. infestans.*

In relation to costs, this brings into question the feasibility of carrying out such a trial in the first instance. Particularly in light of the fact there are potatoes already on the market that show excellent blight resistance. Furthermore, scientific research on non-GM hybridisation has identified further varieties that have excellent resistance to late blight. The non-GM potatoes are from the Sarpo varieties, particularly Sarpo Mira and Axona which are maincrop potatoes. The Sarpo Una is of specific interest as it shows excellent resistance to early blight. The Sarpo varieties also offer additional benefits, with natural resistance to viruses, they rarely require spraying for virus-transmitting aphids. Their abundant foliage smothers weeds, unless weed infestation is high; hence spraying of herbicides is not necessary. Spraying against blight is not required, even in wet seasons such as that experienced in Ireland in 2007, when other normally resistant varieties succumbed. Sarpo's are gaining in popularity in Ireland with many conventional and organic growers planting this variety. The overall environmental footprint is minimal, as the use of fungicides, herbicides and pesticides are massively reduced.

In a purely economic argument, the currently available blight resistant potatoes offer a greater financial benefit than that of a GM potato, plus with the added bonus that consumers actually wish to purchase it. Furthermore, it doesn't threaten our national marketing strategy as a clean green Island. In value terms, the GM product is worth less, its potential market is reduced and the integrity and marketing potential of the country is undermined, this will impact on all producers. Furthermore, as it is not beneficial or to the advantage of the majority of Irish growers, IOFGA can not support or realize any tangible justification to trial GM potato cultivation.

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FARMERS' AND GROWERS' ASSOCIATION
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Blight will mutate faster than it is possible to engineer resistance which renders this trial useless.

2. GM CROPS AND THE USE OF CHEMCIALS

Teagasc have publicly acknowledged in their application the negative impact on soil and biodiversity by the use of chemicals, (p20, no10) and state that one of the overall aims of conducting this research on GM potatoes is to reduce the amount of chemicals sprayed on potatoes in Ireland "in light of future environmental and legislative challenges" i.e., EU requirements to reduce pesticide use.

IOFGA wish to state that contrary to the "hypothesis" by Teagasc in that there will be a reduction in the amount of fungicide treatments used and therefore the GM crop will have a lesser impact on the environment, research taken from the USDA, on the commercial cultivation of GM crops has shown that "*GE crops have been responsible for the increase of 383 million pounds of herbicide use in the US over the first 13 years of commercial use.*"[1] *(Note 1)* This research concludes that this increase in herbicide use swamps the decrease in insecticide use attributed to corn and cotton, making the overall chemical footprint of GE crops decidedly negative. The report also identifies and discusses in detail the primary cause of the increase – herbicide resistant weeds. Therefore IOFGA are demanding that the use of all chemicals are monitored throughout this trial so that if a reduction in fungicide application is detected but increases in other chemicals such as insecticides or herbicides that this information is notified to the public.

There is an overall assumption by Teagasc that this GM trial will require a smaller amount of chemical usage however IOFGA would urge an open mind on this issue as commercial production of GM crops suggests otherwise.

[1] Impacts of Genetically Engineered crops on pesticide use in the United States: the first thirteen years by Charles Benbrook, the Organic Center 2009

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3. POTATO VARIETY USED

Another questionable aspect of the proposed GM potato trial, and indeed of the whole project, is that the parent variety *Desiree* is already widely planted among commercial and home gardeners. Thus, a newly invading disease affecting the GM potato may wipe out a major portion of the Irish potato harvest, both GM and non-GM.

The Desiree potato variety produces high quantities of berries. However, the Teagasc application states that mammals such as rodents do not eat these berries. This statement is fundamentally untrue, rodents regularly consume these berries despite their high glycol-aklaloid levels. Furthermore, evidence shows that these berries can survive for up to 10 years in the soil.

Teagasc also state that any tubers not harvested will not survive in the ground due to frost conditions and tubers are typically destroyed at temperatures below -3°c. The application also states that "tubers will be destroyed by a continuous 25hour period of below -2°c or up to 5 hours at -10°C". This is a critical issue and highly questionable as to the environmental vulnerability and scientific integrity of this research, especially given the recent mild winter (2011-2012). To base an environmental control, to prohibit the spread of rouge tubers, on such uncontrollable variability renders this project fundamentally flawed. On that basis alone, it is the opinion of IOFGA that the application should be denied as Teagasc cannot establish an adequate environmental control. The potato variety chosen for this trial is not a suitable variety which also questions the suitability of the trial for an Irish agro-ecosystem.

4. CISGENIC OR TRANSGENIC TRIAL?

A similar study was carried out in the UK in 2011 and was described as a transgenic study, as the transgenes were obtained from different species - *Solanum venturii* and *Solanum mochiquense* – the transgene protein products may well be different from the native, non-transgene equivalents. It should be recalled that in previous peer reviewed studies it was noted that the transfer of

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genes between closely related species may actually lead to proteins with powerful (sometimes fatal) immune responses.

The Teagasc application refers to the Rpi-vnt1.1 gene being inserted into *S. tuberosum cv. Desiree* may increase resistance to *P. infestans.* The respective gene encodes gene products that occur naturally in the wild potato species *S. venturii*. Teagasc describe the genetic construct in this research as cisgenic. The accepted definition of cisgenic is: *the genetic modification of a recipient plant with a natural gene from a crossable—sexually compatible—plant. Such a gene includes its introns and is flanked by its native promoter and terminator in the normal sense orientation. Cisgenic plants can harbor one or more cisgenes, but they do not contain any transgenes.*[2] *(Note 2)*

The definition of S. venturii states that it is: *Herbaceous, of low and delicate habit, bearing underground stolons with small globular tubers about 5—10 mm. diam. Leaf thin,, frequently eaten by insects, often with red veins; lateral. leaflets (0—)1—3-jugate, much smaller than the terminal, up to 20(—50)mm. Weak decumbent habit, small sparse tubers, thin branched unwinged stem, sparse pubescence of adpressed triangular transparent 3-celled hairs on all green parts, shorter peduncle below the fork, smaller corolla, and dense quite long papillae on the lowest third of the style. It possibly represents a recently derived endemic separation from the ancestral stock of S. microdontum, which has not been able to spread far owing to its special ecological requirements.*[3] *(Note 3)*

There are also references to the fact that this variety is not edible and hybridisation occurs regularly in the wild. Therefore, is S. venturii sexually compatible with commercial potato varieties such as *Solanum tuberosum v. Desiree?* The critical question - is whether this trial really is a cisgenic trial or is it transgenic, as indicators show that it is not possible for natural hybridisation between the two species selected? Cisgenic is a classification subset of transgenic, and in practice it clearly involves the genetically

[2] European Commission definition of cisgenic
[3] Some wild potato species from Argentina by J.G. Hawkes (Birmingham) & J.P. Hjerttng (Copenhagen)

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engineered transferral of a gene from a different species and is unequivocally transgenic. It is the transformation process and not the source of the transferred gene that makes this process and its effects unpredictable.

There is no indication that the offspring of this manufactured GM potato will remain true. This has major implications to the natural environment.

The fact that S. venturii has not been used as food by humans suggests that the gene product Rpi-vnt1.1 deserves extensive testing by animal feeding? The Rpi-vnt1.1 gene could be toxic to mammals, evidence to the contrary has not been provided by Teagasc. To date toxicity tests have not been carried out on toll like receptor proteins from plants and animals, however, a toll like receptor protein was found to induce tumor necrosis factor in baboon lung cells.[4] (Note 4)

The toll like receptor protein genetically modified into food crops deserves careful testing. Teagasc state in their application that the potatoes will not be fed to animals, and a separate trial will be carried on by Teagasc in Moorepark by a PhD student. If this trial does go ahead, the GM potato crop is effectively tested to determine the toxicity levels immediately post harvest. Testing regime and sample population would need to be statically significantly to provide certainly and include all possible permutations, including a dose response component. One Moorpark project conducted by a student would not constitute a credible study in which to base scientific evidence. Furthermore, the controversy around GM crop toxicity has received much adverse publicity, Teagasc need to establish how they intend to control and avoid extrapolation into the natural environment. IOFGA believes they have not done this in their application and therefore the licence should be denied. IOFGA also reject the attempt by Teagasc to promote this trial as cisgenic and therefore suggest in some way it is less of a GM product when it is an obvious GM manipulation and as a result carries with it serious implications for the agro-ecosystem. Teagasc use the term "cisgenic" 48 times in their

[4] Cell Immunol. 2011 ; 268(2): 87–96. doi:10.1016/j.cellimm.2011.02.009

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application and do not define it once. On page 23 of this application Teagasc state that they are responsible for "education and demonstration in order to proactively engage and discuss the issues that most concern stakeholders and the public at large in regards to the cultivation of GM crops in Ireland". Their deliberate attempt to hide behind the term cisgenic appears to suggest that complete transparency will not be portrayed to stakeholders and the public and therefore the licence should be denied to Teagasc.

5. INTERACTION WITH OTHER CELL ORGANISMS OTHER THAN *P. infestans?*

IOFGA would like to see evidence from the similar "cisgenic" trial in the Netherlands, under Notification B/NL/10/06 that no "unanticipated effects" have occurred. Teagasc state in their application; "*the reaction between the Rpi genes and the corresponding avirulence factors of P. infestans are highly specific. Due to this level of specificity between the host and pathogen no effects on other organisms other than P. infestans can be expected by the release of the determined cisgenic plant material*". However, fundamental to this is that Teagasc is not certain that in the genetic modification of plants, where proteins can be expelled, we cannot be 100% guaranteed that this modification will not interact with any other cells within the organism. On p29, no 8 Teagasc again state that "*No effects on biogeochemical processes are expected with the cultivation of the cisgenic line A15-031. This is because the Rpi-vnt1.1 gene has evolved to interact only with P. infestans and hence confer resistance upon the host against the pathogen. The protein produced as a result of the expression of the Rpi-vnt1.1 gene only interacts with P. infestans effector proteins. In contrast to standard potato cultivation regimes, the growing of A15-031 is likely to impact positively on soil organisms and this will be studied during the course of the notification by project staff*". Again IOFGA would reiterate the fact that genes interact widely with each other in the natural world they do not act in isolation, and this manufactured (not "evolved") gene may react differently with other genes in the plant once released. This is core to the public concern over this issue, the shear uncertainty as to the environmental consequence, which is, inevitably, irreversible.

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Teagasc in the later stages of their application refer to the fact that they intend to monitor the blight organism as it reacts to the resistant plant however this should have been made more explicit throughout the application.

If the GM potatoes do not get blight naturally, what strain of P. infestans will be used to inoculate the plant to watch for resistance development? Will this strain have a negative impact on surrounding potato crops in the wider Carlow area, affecting both organic and non organic potato crops? Yet again, there is uncertainly as to the environmental consequences.

IOFGA are requesting more information from the trials in the Netherlands and also in the UK to be released to the public so we can make up our minds about whether any "unanticipated effects" have occurred. IOFGA feel that Teagasc have been negligent in this regard and they should not be afforded a licence due to insufficient information pertaining to the safety aspect of the crop.

6. SOIL HEALTH

The proposed trial is to be carried out on land that was previously in pasture. Teagasc intend to spray the growing area with glyphosate before the trial is carried out. Each year the plot will rotate which gives a very short window to actually fully observe the effects of growing GM potatoes on soil microbiology and nematode and earthworm diversity in the soil. For a truly effective experiment it is essential to determine the effects on soil microbiology and biology for a longer period than the average 100 - 120 days that the main-crop potato will be growing in the soil. Furthermore, it would be prudent management of the ground if the area was not sprayed with glyphosate before the trials are conducted, as it will be almost impossible to distinguish between the impact of glyphosate and the growing of the GM potatoes in this short timeframe.

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7. MARKETING THE GM POTATO?

Will Teagasc or any other of the 22 institutions who are carrying out these experiments develop potato lines for the marketplace as a result of this trial? If so who will "own" these new GM varieties and is there a plan to take out a patent on them?

As this is an EU funded project there are obviously some plans as to what will happen when results of the trials are finalised, IOFGA are requesting more information on this matter as it has economic and environmental consequences.

8. SUBSTANTIAL EQUIVALENCE

In this licence application Teagasc state that, alongside the GM plants there are also comparative plants "which will be grown in parallel to the GM lines within each site". No detail is made of how these plants will be treated therefore it is not correct to use the term 'substantial equivalence' in this context.

IOFGA would like more detail regarding the non GM lines to be used and how they will be treated and what proximity there is between both GM and non GM plants as cross pollination may be an issue. Insufficient information on this subject questions the motivations of this trial and the omission of critical aspects renders the application inadequate.

9. POLLEN FLOW STUDIES

As this is a new manufactured unnatural organism pollen flow studies must be a necessary component of this trial, this is a new organism and all precautions must be taken with this plant to ensure there is not cross contamination between this plant and other crops.

IOFGA do not accept the precautions taken by Teagasc with regard to pollen spread in this trail. Pollen spread by wind is one issue however previous field trials have proven that insects can spread pollen over much greater distances than the proposed 40 metre exclusion zone. One experiment found that significant cross-

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pollination of potatoes by insects took place at distances of over 1000 meters.[5] *(Note 5)* Therefore while Teagasc state that they will construct a buffer zone of 40m from the GM trial site, IOFGA would like to see more detail on the buffer zone to ensure that it is not a permeable buffer due to the fact that pollen can be carried as far as 1000m from the parent crop. Teagasc do not appear to have taken all of the necessary precautions in this trial to ensure that cross pollination is not a danger therefore we are requesting that the EPA deny a licence to Teagasc for this proposed trial.

10. GENETIC INHERITANCE

What is the guarantee that the blight resistance created will be passed on in true potato seed? If that gene is successfully passed on and over the 4 year term is shown to be less resistant what measures will be taken to ensure the resistance is retained?

All of this points to a further dependence on genetically engineered solutions to a genetically engineered problem! In this context there are no winners except the biotech industry and its academic partners.

11. AIMS OF THE AMIGA PROJECT

The stated aims of the AMIGA (Assessing and Monitoring the impacts of Genetically Modified plants on agro-ecosystems) project are to;

- Provide baseline data on biodiversity agro-ecosystems in the EU
- Identify suitable bio-indicators that permit a better integration of GM field experimentation across specific agro ecosystems in the EU

[5] Skogsmyr, I. (1994) Gene dispersal from transgenic potatoes to conspecifics: A field trial. Theoretical and Applied Genetics. **88**: 770-774.

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- Deliver an improvement of knowledge of the long term impacts of specific GM crops
- Assess the economic effects of cultivation of GM crops in the EU (p22 Teagasc application)

While Teagasc have been given the specific tasks within this overall aim to;

- Quantify the impact of GM potato cultivation on bacterial, fungal, nematode and earthworm diversity in the soil, compared to a conventional potato system
- Identify integrated pest management strategies (IPM) and components which could be positively or negatively affected by the adoption of GM late blight resistant potato
- Employ the project's resources as a tool for education and demonstration in order to proactively engage and discuss the issues that most concern stakeholders and the public at large in regards to the cultivation of GM crops in Ireland (p23 Teagasc application)

It is clear that this is a pre-market risk assessment trial carried out in conjunction with other institutions. IOFGA would like to see clear evidence on what measures will be taken if the results from this study show that there will be negative impact both environmentally and economically from the production of these GM potatoes.

How have Teagasc measured the economic risk of placing Ireland in a position of a country which now grows GM crops. What is the economic value on our biodiversity? What is the economic value of risking our reputation as a GM free nation? In 2011 our export market in food and drink was valued at €9.1b and it would be economic suicide to weaken this market by growing GM crops. The economic risk is huge for the sake of growing GM potatoes that are blight resistant when there are already blight resistant potatoes readily available on the market.

12. PRECAUTIONARY PRINCIPLE

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The precautionary principle must be allowed to prevail as the environmental and economic risks to releasing a GM potato on the Irish environment greatly outweigh any benefits proposed by a GM potato with good short term blight resistance.

After considering the above matters IOFGA believes it is critical that the EPA refuse the licence application from Teagasc to grow GM potatoes in Oakpark as it will directly threaten the natural and economic environment. To quantify the impact is virtually impossible in either side of the argument, this is in itself, in our opinion, worthy justification. Furthermore, the environmental liability remains unclear, without strict liability for environmental damage resulting from the release of GMOs no project of this type should be considered.

While it may not be within the remit of the EPA to consider issues of liability concerning the cultivation of GM crops, as there are serious consequences liability and risk must be considered by the EPA when assessing the proposed trial. In the Environmental Liability Bill of 2008, under section 3.2 it lists exemptions from the costs of remedial action under *Permit and State of Art Defence under 8 (4).* Two possible exemption scenarios are listed, however reference is specifically made to fields trials and GM cultivation to state that *"However, the application of these exemptions is subject to an exception, whereby it does not apply to the operator of the activity specified in the ELD Regulations where this relates to cultivation including fields trials. The specified activities concern the cultivation of Genetically Modified Organisms"* [6] *(Note 6).* To date in GM technology risk and liability have been contentious issues as the pattern has been established that liability is passed from those who generate the risk to the government and then to the taxpayer. In this particular case taxpayers would foot the bill as Teagasc are a state funded organisation. On the issue of liability alone there are sufficient grounds to adopt a precautionary approach and reject the licence.

Public acceptance plays a critical role in the issue of GMOs. To date, the trend in European public opinion is towards a clear and

[6] Transposition of the Environmental Liability Directive in Ireland, Tom Flynn

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unmistakable rejection of GM food. It could be an impediment to Irish agricultural exports as well as indicating a complete lack of EU consumer awareness to permit the cultivation of GM potato trails.

IOFGA does not support GM cultivation. We are concerned that the cultivation of GMOs marks an irreversible decision, which has implications for our export markets, our green image as well as our green collar job strategy and finally our organic strategy. Therefore we are calling on the EPA to reject the application by Teagasc to trial GM potatoes in Oakpark.

(61)

www.no2gm.com

no2gm Submission

RE:

NOTIFICATION (G0469-01, REFERENCE NO B/IE/12/01) ON 27/2/2012 FROM TEAGASC, OAKPARK, CARLOW

FOR THE PROPOSED DELIBERATE RELEASE OF GM POTATOES INTO THE ENVIRONMENT FOR PURPOSES OTHER THAN PLACING ON THE MARKET IE; TO PERFORM A FIELD TRIAL

No2gm are a non-political, voluntary, not-for-profit organization made up of citizens and organizations who wish to protect our environment and keep Ireland free from genetically modified organisms (GMOs).

The steering committee of no2gm comprises representatives from the Irish Organic Certification Bodies, Organic Trust and IOFGA, the Leitrim Organic Farmers Co-operative, the Irish Doctors' Environmental Association (IDEA) and Sonairte, The National Ecology Centre.

We are fundamentally opposed to the licence application from Teagasc to trial GM potatoes in Oakpark in Carlow. This is a direct threat to our GM free status. It is economic and environmental suicide for a state agency to gamble with our reputation in this manner with blatant disregard for Irish food producers.

When Teagasc first announced on "Twitter" that they had submitted a licence to trial GM potatoes no2gm decided to appeal to the public to get involved and give their opinion on this issue. We have launched a formal petition site via Care2 Petition site, http://www.thepetitionsite.com/1/stop-gm-potato-trials-in-ireland/ and at the time of writing this submission we have 2,522 signatures and rising. People who have taken the time to sign this petition may not have the time/resources to make a formal submission to the EPA urging them to reject the Teagasc licence application however their objections on this specific issue should be considered by the EPA. The science of GM technology is difficult for many consumers to understand and indeed is often presented in a manner that makes it inaccessible, however this does not negate the fact that many people are against any form of GM cultivation in this country.

We have carefully studied the application made by Teagasc on February 27th and we feel that the licence to trial GM potatoes must be denied by the EPA on the following grounds;

ENVIRONMENTAL IMPLICATIONS OF GROWING GM POTATOES

The potential environmental impact of genetically modified organisms (GMOs) is regulated under the following pieces of legislation;

- EU Directive 2001/18/EC on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EC transposed into Irish law under the Genetically Modified Organisms (Deliberate Release) Regulations 2003 (S.I. No. 500 of 2003);
- EU Directive 2003/29/EC on genetically modified food and feed;
- EU Regulation 1830/2003 concerning the traceability and labelling of food and feed products produced from genetically modified organisms and amending Directive 2001/18/EC;

- EU Directive 98/81/EC amending Directive 90/219/EEC on the contained use of genetically modified micro-organisms transposed into Irish law under the Genetically Modified (Contained Use) Regulations 2001 (S.I. No. 73 of 2001);

- Regulation 1946/2003 on the transboundary movement of GMOs, transposed into Irish law under the Genetically Modified Organisms (Transboundary Movement) Regulations 2004 (S.I. No. 54 of 2004).

The Environmental Protection Agency is the authority in Ireland that implements GMO Regulations on:

- The contained use of Genetically Modified Organisms
- The deliberate release of Genetically Modified Organisms into the environment

GM cultivation has been heavily legislated in the EU for obvious reasons of contamination of the food chain. Consumers, farmers and policy makers have worked to regulate the industry and taken the "precautionary principle" approach. Therefore it is worth examining the legacy of the commercial cultivation of GM crops in the US as they have the longest consistent track record in GM cultivation. The 2009 report by Charles Benbrook of the Organic Centre in the US explored the impact of the adoption of GM corn, soybean and cotton with regard to pesticide use. Data from the USDA was the principal source of material and his findings conclude that "GE crops have been responsible for the increase of 383 million pounds of herbicide use in the US over the first 13 years of commercial use."[1] The report goes on to conclude that this increase in herbicide use swamps the decrease in insecticide use attributed to corn and cotton, making the overall chemical footprint of GE crops decidedly negative. The report also identifies and discusses in detail the primary cause of the increase – herbicide resistant weeds.

In this specific trial proposed by Teagasc one of the primary reasons being presented as justification for the AMIGA project is to reduce the amount of fungicides that farmers currently apply to potatoes. Farmers are spraying fungicides up to 15 times in a growing season which has a huge negative impact on the environment particularly on soil microbiology and biodiversity. However there is no guarantee that a GM blight free potato will mean that fewer pesticides are used as report after report (including peer reviewed studies) have shown evidence to the contrary.

Therefore within the context of this proposed trial we are not convinced that less chemicals will be required when growing GM potatoes over the proposed 4 year course of this trial. *P.infestans* has shown itself to be an extremely versatile organism that mutates constantly and it is guaranteed that once the organisms mutate to the greater resistance engineered into the plant that more fungicides will be used to control the blight. The other alternative is that

[1] Impacts of Genetically Engineered crops on pesticide use in the United States: the first thirteen years by Charles Benbrook, the Organic Center 2009

more expensive GM trials will need to be conducted to justify the initial experiment with greater economic and environmental costs.

Soil Microbiology

In their application Teagasc state that two of their aims under the AMIGA project are to;

"Quantify the impact of GM potato cultivation on bacterial, fungal, nematode and earthworm diversity in the soil, compared to a conventional potato system"

"Identify integrated pest management strategies (IPM) and components which could be positively or negatively affected by the adoption of GM late blight resistant potato"

On this first aim we would insist that both areas are treated in the same way. It is our understanding that the area proposed to grow the GM potatoes is pastureland and will be treated with glyphosate. We would insist that the same treatment is used for the non-GM potatoes to ensure proper control plots are used. We would also like to see an organic trial being carried out to observe soil microbiology, however despite its relevance that is another issue. Main crop potatoes stay in the ground on average between 100-120 days depending on the weather and this is not long enough to really observe long term impacts on soil microbiology. A 4 year rotation is also not long enough to determine the impacts on soil life or other insect populations.

Teagasc are proposing to hold this trial in the open fields so we would insist that more detail is presented in the methods in how they will ensure that cross pollination does not occur between the two species. We know that pollen travels further that the 40m outlined in this trial as Teagasc's own research shows that it can travel in excess of 1000m. This is a major concern for potato growers, both conventional and organic in the area. Teagasc have been conducting GM research in greenhouses and controlled environments which we would like to see some information on the findings from these trials. Also as this particular trial is part of a wider EU trial with 22 institutions involved, some of these experiments have been conducted for two years now and we have not seen any information on the results and important implications of these trials. We are demanding that this information is released into the public domain before any decisions on allowing this proposed trial to continue are made. If Teagasc and their EU counterparts want to really bring consumers and growers on board with this issue they need to be more transparent in their findings to date ***before*** the trial takes place.

The potato variety chosen Solanum tuberosum v. Desiree produces a high quantity of berries which rodents ***do*** eat despite what is outlined in the proposed licence application by Teagasc. High levels of glycol-aklaloid levels do not deter rodents and as berries may last for up to ten years in the soil this is an issue for the presence of GM potatoes in the soil.

The second aim outlined above with regard to IPM strategies and components which could be affected by a GM late blight resistant potato brings up the interaction with other organisms eg wildlife in the immediate area. We would like to see biochemical studies to support equivalence in protein and enzyme structure carried out to minimize issues with wildlife and insect populations ***prior*** to open field trials being carried out.

Pollen Flow

While it is accepted that pollen dispersal between potato fields may be less of a problem that with other plant species, the level of fertility can vary considerably between cultivars and therefore any risk of pollen dispersal depends on what varieties are grown locally. Desiree is a solanum variety commonly grown in the local and wider area and this makes it an unsuitable variety to use for this proposed trial. Also Teagasc, as one of the biggest institutions who have been involved in potato hybridisation over the past few decades, grow a large variety of potatoes that may be an issue with regard to pollen flow.

A monoculture crop (GM or non GM) with space between plots is a highly artificial situation and pollen dispersal, seed dispersal, hybridization with wild relatives or feral crop populations all have a role to play in nature. How each of these issues will be affected by the introduction of manufactured genes is not predictable and as a result renders this trial unsuitable for open fields in Ireland.

Reaction with organisms other than *P. infestans*

In an ecosystem many parts are at play, this is further complicated by an agro-ecosystem were there are advanced levels of permutations and combinations taking place resulting in varied situations. In this proposed trial it is stated by Teagasc that these genetically manufactured genes have been inserted into the new plant and that they will **only interact** with *P. infestans* however while this may be the case in a laboratory or other controlled environment, in nature this is highly unlikely. Something is expelled to make room for the newly inserted gene and therefore this may have serious implications in how the plant reacts with its surrounding environment and the other living organisms in that environment. Once this has been altered it will be impossible to reverse.

Precautionary Principle

In light of the above environmental concerns, no2gm are calling for the EPA not to grant Teagasc a licence to grow GM potatoes. There are too many variables and unanswered questions regarding the impact on agro-ecosystems when GM crops are planted. We are calling on the EPA to observe the "precautionary principle" in light of the above concerns raised.

ECONOMIC IMPLICATIONS OF ALLOWING A LICENCE TO TRIAL GM POTATOES IN IRELAND

In February 2012, BASF and Monsanto, the world leaders in GM, dramatically and suddenly closed down their research facilities throughout Europe citing the fact that after 20 years of trying to sell GM technology, there is clearly ***no market for it in Europe***. Survey after survey shows that, European consumers do not want to eat GM food, European farmers do not want to grow GM crops and the decisions of policy makers in Europe reflect this.

It is within this context that Teagasc have taken the inexplicable decision to release this unwanted technology into the pure and natural Irish food chain. This project is being funded under EU Framework 7 which is being funded by EU taxpayers who do not want to eat GM food so we must question is this an efficient use of limited resources to develop an unwanted technology?

The major consequence of growing a GM potato in Ireland threatens the Irish export market which was reported to be worth €9.1billion in 2011 and under the Food Harvest 2020 is projected to rise to over €12billion by 2020. Irish food producers produce high quality goods and almost 90% of this is destined for the export market. We are supplying premium products for high end markets throughout Europe and the rest of the world. The reason that Irish food is in demand is because it is perceived as green and natural. We have a fantastic reputation as a food producing country and one which will be tarnished significantly if we decide to cultivate or even trial GM crops in Ireland. There is no demand for GM food in Europe which constitutes our biggest market. It would be economic suicide for Ireland to consider such a move to a sector in growth. It is irresponsible of Teagasc to consider going ahead with this trial as it threatens the markets for Irish food producers. If these trials are allowed to go ahead, Ireland's unique selling point as a GM-Free Island will be lost forever and to quote the BBC Environment Correspondent, Mike McKimm, "Perhaps the biggest threat from GM crops is to Ireland's (north and south) reputation as a green and natural environment. It is a great marketing credential. The GM argument is the same no matter what part of the world you visit. But few island nations like Ireland are still GM free but grow just one GM crop in the open and that reputation is gone". (March 22nd, 2012)

Another economic factor is that while Teagasc are at pains to point out that agri-business/industry are not involved in this trial, as this is a premarket assessment project at some point this will be put on the market maybe not by Teagasc but by one of the other 22 institutions involved in the trial. This raises the question of patents and market price etc with regard to these GM potatoes and it is interesting to note that there is a lot of confusion among the media and consumers as to whether this GM potato was developed by BASF or indeed in a university in the Netherlands, either way it does suggest close ties with the agri-business biotech companies. No2gm are calling for the licence to be denied as it is a direct threat to our market potentials.

SCIENTIFIC IMPACTS OF PROPOSED GM TRIAL

Genetically Modified Organisms are defined in EU Legislation as 'those in which the genetic material is altered in a way that does not occur naturally by mating or natural recombination'.

Where GMOs comprise bacteria, viruses, viroids and animal and plant cells in culture they are referred to as Genetically Modified Micro-Organisms or GMMs.

In their application title Teagasc have stated that this is a GM trial, however as their application continues it states that it is a cisgenic rather than a transgenic GM trial. Under cisgenic modification plants need to be sexually compatible and using the above definition of GMO as defined by the EU this covers plants which are not sexually compatible ie are transgenic. From the information presented in the licence application *Solanum venturii* does not seem to be sexually compatible with *Solanum tuberosum v. Desiree* which would suggest that this is not a cisgenic trial as outlined in the application. No2gm would also like to see further genomic studies to show the point of insertion of the two "cisgenic constructs" as well as affirming that no other genetic material from the plasmid was incorporated into the Desiree genome in the genetic modification process. In light of this no2gm are requesting that this trial does not take place in the open field and rather should be carried out in Containment 1 level before being released into the environment. This minimises the risk of potential gm material being released and also increases security parameters for the trial which is a major issue for Teagasc.

Blight resistant potatoes

There are a range of late blight potatoes available to growers on the market, some of them developed by Teagasc and others which are in the Sarpo range (Mira, Axona etc) bred in Hungary. Therefore this trial is not innovative and will not confer any greater blight resistance than is currently in potatoes that have late blight resistance.

Toxicity levels

The potato variety *Solanum tuberosum venturii* does not appear to be an edible potato, if so what are the toxicity risks associated with consumption of the potato? Is this trait carried through to the next generation and if so why choose this variety as it may negatively affect the non GM Desiree variety?

GM Interaction with other cell organisms

Can Teagasc guarantee that once the blight resistance gene is inserted that it will not interact with any other organisms in the plant? We know that in nature (not always in a laboratory) plant cells/genes interact with each other in many different ways therefore it is likely that the inserted gene will interact with *P. infestans* but also with other plant genes, these interactions may not be

beneficial and may indeed be hazardous to organisms in the surrounding ecosystem.

CONCLUSION

Within the context of GM crop cultivation protection of human and environmental health is paramount. The EPA has the authority to decide this for Irish consumers, farmers and also for flora and fauna. No2gm do not feel that this technology is safe for animal or human consumption and that it is not good for Irish biodiversity. Instead of trying to push an unwanted food technology we would be better served to impose a five year moratorium on GM cultivation in Ireland as there is too much at stake environmentally and economically.

As with all forms of GM cultivation there is a major issue with liability, who will pay once the technology is released into the environment and cannot be controlled? In this case as in most cases it will probably be the taxpayer.

No2gm are asking the EPA to consider all of the above factors when making their decision as once the decision is taken to grow (even trial) GM crops in Ireland we cannot go back and we have lost an enviable marketing and environmental position as a GM free island.

(62)

Gavin Lynch, BSc Ag Hons
Intack
Donard
Co. Wicklow
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NOTIFICATION (G0469-01, REFERENCE NO B/IE/12/01) ON 27/2/2012 FROM TEAGASC, OAKPARK, CARLOW

FOR THE PROPOSED DELIBERATE RELEASE OF GM POTATOES INTO THE ENVIRONMENT FOR PURPOSES OTHER THAN PLACING ON THE MARKET IE; TO PERFORM A FIELD TRIAL

March 24, 2012

To Whom It May Concern:

I am writing to you to register my objection to Teagasc's application to grow GM potatoes in the open at their research farm in Oakpark, Co. Carlow.

I am a full time farmer with an honours degree in agricultural science, and have a good knowledge of the science involved in this area. While there are many well- documented ethical and economic concerns relating to the introduction of GM technology, I realize that it's not within the remit of the EPA to give consideration to these issues. Here I will make my case against allowing these field trials on the basis of documented scientific evidence. Below, find listed a number of points which I hope you will give due consideration to when reviewing Teagasc's application.

1. This is a poorly designed experiment. Teagasc state that one of the purposes of this research is to "Quantify the impact of GM potato cultivation on bacterial, fungal, nematode and earthworm diversity in the soil, compared to a conventional potato system". As the soil at Oakpark is most likely an inert material after years of intensive cultivation and treatment with biocides, there is little point in measuring soil biodiversity when starting from such a low base. Measuring soil biodiversity here while growing GM potatoes would be akin to checking the pulse of a corpse after administering drugs. There is nothing to suggest that a control study was carried out on

the same plot while in pasture to act as a comparison. Also the research proposes to only measure soil biodiversity during the growing period. Monitoring soil life over such a short period will undoubtedly yield no useful information.

2. Measures to avoid the spread of GM pollen are totally inadequate. While Teagasc have given consideration to pollen spread by wind, previous field trials have proven that insects can spread pollen over much greater distances than the proposed 40 metre exclusion zone. I would refer your attention to *Skogsmyr, I. (1994) Gene dispersal from transgenic potatoes to conspecifics: A field trial. Theoretical and Applied Genetics.* ***88****: 770-774*. In this experiment, it was found that significant cross-pollination of potatoes by insects took place at distances of over 1000 metres.

3. Measures to contain True Potato Seed (TPS) from these GM potatoes are also totally inadequate. Predation of seed/berries by small mammals and birds is extremely common. The variety which has been modified, (Desiree) is widely recognized to produce berries prolifically. Aside from a small fence around the trial plot, no other measures have been outlined to avoid the inevitable predation of TPS. There is also a significant risk of shed berries remaining viable in the soil after the trial is concluded. Here, I would refer your attention to *Lawson, H. M. (1983) True potato seeds as arable weeds. Potato Research, Volume 26, Number 3, 237-246, DOI: 10.1007/BF02357120.* In this experiment conducted in Aberdeen, Scotland, it was found that TPS survived in the soil over a 7 year crop rotation and volunteer seedlings presented a significant problem in subsequent crops. These 3 factors combined, ie; Desiree's prolific berrying capacity, the high probability of predation by birds/mammals and the persistence of TPS in the environment would surely be reason enough to deny a license to Teagasc for this trial.

4. Thomas Sprat once said "...whoever has fix'd on his cause, before he experimented; can hardly avoid fitting his experiment to his observations, to his own cause, which he had before imagin'd; rather than the cause to the Truth of the experiment itself". Referring to experiments whereby a preconceived truth would be illustrated merely to convince people of the validity of the original thought. While I would not for a minute question the character or integrity of those involved in applying to conduct this trial, it is apparent from the application that those involved have already settled upon a "cause and truth". Page 28 of the Teagasc

application seems to predict the outcome of the trial; "as conventional fungicide programmes impact significantly on a range of non-target organisms, it can be expected that this scenario will be reversed in the presence of the cisgenic A15-031 and that the environmental impact of the GM line will be minimal compared to conventional agricultural practice." Similarly, page 33 states; "Any effect is expected to be comparable to that of non-genetically modified potatoes under conventional agricultural practice. Due to a reduced need for fungal treatments an increase in soil micro-flora is hypothesised and will be the focus of research." Semantics are also important here, as the title of Teagasc's application does not mention the comparison with conventionally produced crops. Therefore, the favourable result in the GM Crop plot can be presented as an achievement of the GM potato rather than the result of a simple fungicide toxicity study. None of what I have highlighted here would form the basis of 'good science' in anyone's book.

5. There is a significant and documented risk of horizontal gene transfer from the GM potatoes via *agrobacterium tumefaciens*. I refer you to recent research from Bristol University; Bailey, A. M. Foster, G. D. and Knight, C. J. (2010) Investigating *Agrobacterium*-Mediated Transformation of *Verticillium albo-atrum* on Plant Surfaces. ***PLoS ONE:*** Research Article, 10.1371/journal.pone.0013684. This research identified a natural process (stimulated by a hormone released by the wounded plant) that would allow synthetic genes to move across organisms and out into the wild. *Agrobacterium* can survive within plant tissue following artificial transformation in tissue culture, and can be detected within regenerated transgenic plants. This research shows that these bacteria have the potential to readily move the same genetic modifications to fungi in a natural environment (the potato was the subject used in this experiment). There is an unacceptable and unavoidable risk here, of the escape of genetic material from these GM potatoes into the environment.

6. While it may not be within the remit of the EPA to consider issues of liability concerning the cultivation of GM crops, as the EPA is the sole authority with power to stop these GM trials, I must point out some serious concerns in this area. Liability and risk, in relation to GM technology, is described by Robert Hartwig, chief economist for the Insurance Information Institute, thus, "Genetically

engineered foods are among the riskiest of all possible insurance exposures that we have today". Where insurance cover is considered (by EU, Irish and UK reports) it is envisaged that this would be made possible by capping the insurers liability with the state accepting the remaining liability. The liability is passed from those who generate the risk to the government, and hence onto the taxpayer. There are strong parallels here with the current banking crisis, where in both cases we have novel instruments, which are either under-regulated or self-regulated, where most or all of the risk generated is assumed by the taxpayer. To give just one example of the attitude on liability and risk within the GM industry, Monsanto's Phil Angell, the company's director of corporate communications is on the record stating; "Monsanto should not have to vouchsafe the safety of biotech food. Our interest is in selling as much of it as possible. Assuring its safety is the FDA's job." The FDA then avoid responsibility by relying on the Federal Food, Drug, and Cosmetic act section 402(a)(1), which places a legal duty on developers to ensure that the foods they market to consumers are safe and comply with all legal requirements. There does appear to be a consensus however on where the ultimate responsibility lies, with the farmer according to the FDA, while Monsanto attempts to ensure this by the use of "technology stewardship agreements" with growers, which places liability on growers themselves. In fact, the existence of Monsanto in its present form is due to an exercise in risk avoidance where the parent company, Pharmacia, absorbed valuable assets from Monsanto leaving "new Monsanto" with little more to its name than an off-patent weed-killer, which struggles to maintain an acceptable safety record and its GM related assets. Therefore a company which is introducing products which risk doing irrevocable damage to our food production system, is itself poised to evaporate almost as quickly as the value of those assets, should that risk be realised. The purpose of including the above section is to highlight how the ongoing culture of poor regulation and risk avoidance will ultimately leave taxpayers on the hook for any adverse consequences of allowing GM crops to be grown in the open in Ireland.

7. Teagasc scientists are operating on the assumption that the inserted gene (Rpi-vnt 1.1) can express only one trait ie, blight resistance. Although the one gene, one protein, one function hypothesis was widely held as fact in the early days of GM technology, this theory

has been conclusively disproven over many years of research. The biotech industry and associated research partners (Teagasc) erroneously believe that their foreign gene will behave exactly as it does in its natural setting. The working assumption is that genes determine characteristics in linear causal chains: one gene, gives one protein, gives one function. Current scientific understanding tells us that genes behave in complex inter-related non-linear networks: causation is multi-dimensional and circular; and genes are subject to environmental feedback regulation. All these factors are excluded by the central reductionist dogma of the biotech industry, which prefers to adhere to the "one gene, one protein, one function" model of yester-year. This narrow reductionist mindset allows GM companies to assert that their foreign gene will only produce the one intended protein and therefore will behave in the precise and controlled way they expect. Control and precision is also what biotech investors demand. That the GM companies assume that their inserted foreign gene will only express the one intended protein is a manifestly risky assumption. In fact, the number of genes in nature that actually express a single protein can be counted on two hands. Most genes code for many proteins. In fact, the fruitfly holds the record for the highest number of proteins expressed by a single gene - 38,016. Teagasc have either failed to either give consideration to this fact, in which case, they are negligent in their research, or they have omitted information on the nature of the modified organism from their license application. Whatever the case may be, it would be prudent to conduct laboratory based experiments on what other proteins are expressed by Rpi-vnt 1.1s and to look for any unexpected anomalies at a cellular level. Aside from the Rpi-vnt 1.1 gene, there are also the carrier genes and promoter which have been inserted into this potato. As little as we know about how the inserted gene may behave in its new location, we know even less about how the carrier genes and promoter may interact in this novel organism. To potentially release this genetic material into our environment without having looked at these issues in depth would be negligent. Michael Antoniou, molecular geneticist at King's College London says... "It's the imprecise way in which genes are combined and the unpredictability in how the foreign gene will behave in its new host that results in uncertainty. From a basic genetics perspective, GM possesses an unpredictable component that is far greater than the intended change."

8. In their license application, Teagasc have stated that the GMO to be trialled is cisgenic rather than transgenic. This is by no means

clear-cut. The accepted definition of a cisgenic GMO is the genetic modification of a recipient plant with a natural gene from a crossable, sexually compatible plant. Such a gene includes its introns and is flanked by its native promoter and terminator in the normal sense orientation. As far as can be told, *Solanum venturii* is not sexually compatible with the commercial potato, in fact protoplast fusion hybrids could not even be obtained. This fact would obviously suggest that we are not dealing with a cisgenic cross at all. S. venturii has never been used for consumption by humans which would suggest that the gene product, Rpi-vnt1.1, deserves further testing by animal feeding. The 'death domain' is a group of regulatory proteins with responsibility for cell death, an important function within all organisms. With all GM organisms, there is a risk that putative death domains can be transferred from one organism to the other, and to different locations on the genome. *Lee M, Walters F, Hart H, Palekar N and Chen J. (2003) The mode of action of the Bacillus thuringiensis vegetative insecticidal protein Vip3A differs from that of Cry1Ab endotoxin. Applied and Environmental Microbiology 2003, 69,4648-57.* We are not told by Teagasc whether or not the cell death domain has been mapped in the Rpi-vnt1.1 gene product. Toll like receptor proteins from plants and animals have seldom been directly tested for the toxicity, however, a toll like receptor protein was found to induce tumor necrosis factor in baboon lung cells [Cell Immunol. 2011 ; 268(2): 87–96. doi:10.1016/j.cellimm.2011.02.009]. The toll like receptor protein genetically modified into food crops deserves careful testing.

9. If anyone were to conduct a risk/benefit analysis on whether or not to allow this trial to go ahead, it would be apparent that the potential risks as outlined above will by far outweigh any potential benefits. It is estimated that it takes approximately ten years to develop a GMO and get it to the stage where it can be planted in the open. *Phytophtera Infestans* on the other hand, now only takes seven years to evolve comparitive advantage over new blight resistant genes. This simple fact alone makes all of this research redundant. The genetic engineering being carried out here is based on the use of the 4 discovered R genes (R1, R2, R3, and R4). These genes were isolated from South American wild potato species. It is now becoming more widely accepted that this type of breeding/engineering will fast become a dead-end, due to the speed of evolution of the phytophtera infestans organism. According to Professor Jim Deacon, from the Institute of Cell and Molecular Biology at the University of Edinburgh; "For long-term

control, this form of resistance breeding based on a few major resistance genes seems destined to fail. So, many plant breeders now prefer to develop cultivars that have polygenic or 'field resistance' to the pathogen. Such plants have combinations of several minor genes, none of which gives absolute resistance, but together they slow the rate of development of the fungus and enable the plant to tolerate infection. We must also consider the fact that these same trials are being carried out at other locations around Europe (by nations that have lost their GM-free status already). As I have highlighted, the risks involved in allowing Teagasc to carry out these trials by far outweigh any possible benefits.

For Ireland to risk releasing unquantified and untested genetic material into our environment and to lose our GM-free status for the sake of conducting a poorly designed experiment (the results of which are a foregone conclusion), which is actually being carried out elsewhere, on a potato that will never be eaten, would be folly on a monumental scale.

Regards,

Gavin Lynch, BSc Ag Hons

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12th March 2012

Submission From:
Kathryn Marsh
Castleview
Tobersool
Balbriggan
Co. Dublin

To:
The EPA
P.O. Box 3000,
Johnstown Castle Estate
Co Wexford.

Re: notification (G0469-01, Reference No B/IE/12/01) on 27/02/2012 from Teagasc, Oak Park, Carlow for the proposed deliberate release of GM potatoes into the environment for purposes other than placing on the market i.e. to perform a field trial

For the sake of simplicity issues are not dealt with in order of importance but rather as they appear in the notification

Re Section 2 a (i) *Under Irish field conditions S. tuberosum cv. Desiree will produce berries with viable true potato seed but the plants that arise from true potato seed are agronomically weak and are not capable of competing against weeds and grasses, as observed during Teagasc gene flow studies. In addition, complete control of volunteers arising from true potato seed during the same studies was achieved by ploughing, harrowing or employing a broad spectrum herbicide (e.g. glyphosate).*

1. Under normal field conditions in Ireland potato berries are collected and hoarded by rodents despite their high glyco-alkaloid levels. Should it be decided that a license should be granted the site must be rodent proofed

2. Studies done in Scotland to assess the importance of true potato seed as a weed species in seed potato crops have demonstrated that tps persists in soil for at least ten years. Should a license be granted monitoring should take place for at least this period to ensure that there is no germination of transgenic seed

Section C
1. Description of the methods used for the genetic modification.
The cisgenic potato line A15-031

The definition of cisgenic used by the European Commission says that the cisgenic combinations must be sexually compatible. While Teagasc has put considerable effort into establishing that s.tuberosum and s. nigra are not sexually compatible I could find no evidence of similar research conducted with s.tuberosum and s. venturii. In fact it seems clear that a decision was made at an early stage in this research that genetic modification would be used because it was unlikely that a viable natural hybrid between the two species carrying the gene for resistance to phytophthora could be obtained and indeed that protoplast fusion hybrids could not be obtained. The

organism should therefore be regarded as transgenic, despite the fact terialhat the Rpi-vnt1.1 gene inserted included its native promoter and terminator.

Section D7

A comparison has been made here with s.demissum. However, s.venturii is believed to have higher glyco-alkaloid levels than s.demissum

D8 While it is accepted that the material developed in this trial would be destroyed at the end of the experiment it seems remiss and naive to avoid feeding trials since there is no point in doing any of this work if the end design is not to eventually develop a blight resistant potato for human and animal feed as well as other purposes.

D.10

Since the experiment in that each of the four plots will only be carried out for a few months, since the plots have previously been in established pasture, and since the pasture will be killed with glyphosate which has known long and short term impacts on soil life which are constantly being found to be more extensive than previously believed we would suggest the detectable impact of the glyphosate is likely to be indistinguishable from any impact of the reduced use of fungicides.

D.11
The application does not contain any sources for of the statements that *The Rpi-vnt1.1 gene introduced into S. tuberosum cv. Desiree is solely related to conferring broad spectrum resistance against multiple genotypes of P. infestans. It does not serve a function in abiotic stress.*

E.1

Three purposes of the proposed release are mentioned here. However, it is my understanding that it is also intended to monitor changes in the phytophthora organism itself, particularly in response to the challenges made by the inserted gene, as it moves across the infected crop.
This should have been mentioned in the license application

Upon completion of this notification, it is not the intention of Teagasc to seek consent for the placing on the market of the GM potato lines cultivated in this study.
Is it the intention of any of the other 22 public organizations involved in this research to develop marketable lines based on the results of this study. While Teagasc is not a commercial organization several of the universities and other institutions involved have commercial partners, campus companies etc

E 2
The very short period of study at each of the four sites and fact that it is to be carried out for only a single course of a four course rotation minimizes they likelihood of finding any meaningful results. Should a license be granted we would expect that at least two, and preferably three rotations would be mandated. We appreciate that this

would greatly increase both the cost and the time involved but the experiment as at present designed does not appear to present a valid sample

G.1 b

It is stated here that animals and birds do not take potato berries because of the high glyco-alkaloid levels. I have observed rodent hoards of potato berries on several occasions. As previously mentioned the seeds contained within such berries have a soil life of up to, and possibly over, ten years. I have myself germinated home collected tsp found at the back of a kitchen drawer after several years.

G2 see comments above

G4 *Agronomic assessments will be made during the growing season to ensure that the performance of the GM lines is substantially equivalent to that of the respective comparator plants, which will be grown in parallel to the GM lines within each site.*

The concept of substantial equivalence is a very variable one. It is not clear what management systems are to be used with the comparators and what impact those management systems might have on performance (or for that matter what allowance would be made for plant death if no fungicide is used on comparators)

As Teagasc has extensively studied the degree of pollen flow from S. tuberosum cv. Desiree and the consequence of this gene flow across several sites in separate years at Oak Park 37, no additional pollen flow studies are planned during this study

However this organism is not Desiree – pollen flow studies should therefore be conducted

This process will be repeated each year, for 4 years after the initial GM plantings.

As previously mentioned tsp perists in soil up to ten years

Further Questions

Is the resistance passed on by inheritance in true potato seed

Does the Rpi-vnt1.1 gene confer any other characteristics besides hypersensitive resistance to the spread of phytophthora within the infected plant

Kathryn Marsh

(64)

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GUARANTEEING ORGANIC INTEGRITY SINCE 1992

Submission to the EPA
from Organic Trust Limited

Regarding

Notification G0469-01 Ref No. B/IE/12/01 Dated 27.02.2012

From Teagasc, Oakpark, Carlow

For the Proposed Deliberate release of GM Potatoes into the environment for purposes other than placing on the market – i.e. to perform a field trial.

Organic Trust Limited

The Organic Trust Limited was founded in Ireland in 1991 by a core group of dedicated organic producers including some of the pioneers of organic production in Ireland. The Organic Trust was established as a voluntary non-for-profit organisation to provide a credible system of organic inspection & certification on which the consumer can depend.

With a current membership of 600+, the Organic Trust Ltd certifies a significant percentage of organic farmers and processors producing food using sustainable organic methods. The Organic Trust Limited certifies the bulk of organic processors in Ireland, many of whom are exporting their produce abroad and whose livelihoods are being placed under threat should this experiment be approved.

The membership of the Organic Trust Limited object in the strongest possible terms to the proposed GM Potato trials for which Teagasc have made application, on the following grounds:

1. **Cross Contamination**

Pollen

The pollen-flow safeguards being offered by Teagasc are totally inadequate. The suggestion that pollen will not spread further than 40 meters totally ignores the potential transfer of pollen by insects such as bees. In organic production systems, an organic bee hive must be placed 3 Km from any source of contamination to allow for the natural pollen collection distances covered by bees.

Within a 3Km distance of Oak Park, there are a number of conventional and organic farms which face the potential cross-pollination of their potatoes with pollen from the test site.

TPS (True Potato Seed)/Berry

The particular potato variety being used i.e. Desiree, is a prolific producer of berries on the potato plant. Both birds and rodents are known to take and attempt to eat the berries from potatoes. Potato berries are known to live in the soil for many years and a very worrying prospect exists in relation to the strong possibility that many years from now rogue berries from these trials will contaminate the lands at Oak Park and further afield.

Question:

In their submission, Teagasc make no provision for any eventuality where cross contamination could occur – in the event of contamination of an organic or conventional unit from the test site, will Teagasc or the EPA (as the licensing authority in this incidence) be liable for losses experienced by the farmer due to such contamination? It should be noted that contamination of an organic unit with GM plants results in the immediate loss of organic status of the land area involved and the simultaneous loss of the organic licence by the organic licensee. In this regard, what level of insurance cover which will be being taken out by the responsible agency(ies) to address such an eventuality?

2. **Validity of The Test**

The validity of the proposed testing methods are questioned by the Organic Trust Limited based on the following:

- To date, the grounds at Oak Park have been the site of hundreds of field experiments with many types of crops under various conditions. It is our understanding that a high level of fungicide and biocides have been used on this site over the years, far in excess of those potentially being used on a regular farm holding (which is not a test site). These soil conditions do not replicate those that exist for potato farmers in Ireland, therefore, both the results of cropping from the tests and the examination of the effect GM propagation has had on the soil will not be relevant to conditions relating to potato growers in Ireland. Teagasc propose to only monitor the soil life during the growing period - this proposal will tell us nothing of the effects of GM on soil biodiversity in the long term.
- Teagasc describe this experiment as cisgenic rather than transgenic. However the EU Commission state that for something to qualify as Cisgenic the combinations must be close for relative breeding and sexually compatible. Teagasc offer no evidence that this is the case with s.tuberosum and s.venturii. This being the case, the EPA must insist that Teagasc re-apply for the licence (or preferably, withdraw their licence application in totality) as they have used the 'non transgenic' argument as a leading principle in seeking approval for this experiment.
- There are in existence a number of blight resistant potatoes on the market such as Sarpo. These potatoes were produced using **non-GM** natural methods which pose no threat whatsoever to the environment. The EPA must only approve research for which there is no environmentally safer alternative; this is not the case with the Teagasc proposal.

Question:

Teagasc propose to destroy the resulting crop from these trials. This clearly implies that the crop is considered toxic and therefore unsuitable for use as an animal feed – in effect the resultant crop is deemed inedible. Therefore, what are the exact toxicity issues in relation to this particular variety?

Security

Throughout Europe - and indeed here in Ireland - public outrage at the planting of GM crops has resulted in the destruction of these testing sites by concerned citizens.

While these protesters may be well intentioned in their motives, their actions can also lead to cross contamination problems. **Oak Park is a wide open area** with many potential entrances and exits. How do Teagasc propose to prevent any contamination of their own and adjoining sites in the event of the crops being dug up by protesters?

Current indications from Teagasc that local security firms and CCTV will be employed are considered totally inadequate in light of previous experiences in Europe and Ireland regarding the numbers and tenacity of the protestors involved.

Conclusion

The Organic Trust Limited believes the EPA has a duty of care to the Irish public. We feel that we have provided sufficient valid arguments to prevent the issuing of this licence to Teagasc. Irish and EU based farmers, consumers and food processors have consistently and persistently rejected the idea of GM produce entering the food chain and this must not be disregarded when making a decision on whether or not to grant this licence. The public will not thank any State body (i.e. either Teagasc or the EPA) for gambling with their environment despite the reasons being mooted, but to do so for a technology which Irish citizens and their European counterparts do not want would be inexplicable.

The membership of the Organic Trust Limited calls on the EPA to abide by the precautionary principle:

*"If an action or policy has a suspected risk of causing harm to the public or the environment, in the absence of scientific consensus that the action or policy is harmful, the burden of proof that it is **not** harmful falls on those taking the action"*

One thing is certain in relation to GM technology and that is to expect the unexpected. To date super-weeds, huge increases in the use of herbicides, allergen issues and now the reduction of the effectiveness in the BT Maize were all unforeseen side-effects of this technology.

The Organic Trust Limited strongly believes that there is nothing in the Teagasc application which would justify taking the risks outlined above and as such calls on the EPA to reject this application in totality and refuse to grant Teagasc a licence for these trials.

Signed on behalf of Organic Trust Limited

Helen Scully
National Co-ordinator & Certification Manager
Organic Trust Limited

Colin Keogh
Quality Assurance Manager
Organic Trust Limited

65

Stephen Mahon
32 Aras na Tra
Cois Cuain
Salthill
Galway

The EPA
P.O. Box 3000,
Johnstown Castle Estate
Co Wexford.

20 March 2012

To whom it may concern,

I strongly oppose the GM potato trials in Carlow because as a citizen I believe Ireland's valuable reputation for safe and healthy food production will be damaged in the long term.

The value of this reputation cannot be overstated. This asset must be protected even regardless of current scientific merits because any doubts about the safety of our food products will destroy our global market advantage for safe Irish food.

Protect our image.

Sincerely,

Stephen Mahon

(66)

17 Finnspark,
Finnstown Cloisters
Lucan
Co Dublin

The EPA
P.O. Box 3000,
Johnstown Castle Estate
Co Wexford.

Re: Notification (G0469-01, Reference No B/IE/12/01) on 27/02/2012 from Teagasc, Oak Park, Carlow for the proposed deliberate release of GM potatoes into the environment for purposes other than placing on the market i.e. to perform a field trial.

Dear Sir/ Madame,

The following is a submission in relation to the above application. For clarity I request the EPA refuse permission for the application and proposed trial. My submission is accompanied by the required fee of €10.00 as notified by the EPA's website.

In considering as obliged by the regulations the impact to human health and the environment as required under SI 500/ 2003 and in general, I make the following observations primarily in relation to:

- Legislative requirements under the Habitats & Birds Directives
- Economic Considerations, and wider strategic risks
- Legislative requirements under the SEA & EIA directives

Legislative requirements under the Habitats & Birds Directives:

In brief – the EPA as the consent authority is obligated to address the legislative obligations of Art 6 in its entirety of the Habitats Directive[1] and National Regulations thereof not limited to the screening and appropriate assessment obligations of Art 6(3) and 6(4).

For convenience Art 6 paragraphs (2),(3) and (4) are quoted:

> *2. Member States shall take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this Directive.*

[1] *

3. Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

4. If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.
Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.

It is noted that the applicant's documentation on the impact of the proposed trial protected sites, habitats and species is extraordinarily inadequate.

It is submitted that such does not provide the EPA with a sufficient and arguable basis to determine that a grant of permission for the proposed trial is consistent with the obligations of Art 6 of the Habitats Directive, and therefore the application must be refused.

It is noted that a number of the Natura 2000 sites in Carlow are riverine in nature and therefore the extent of impact to be considered clearly and arguably extends beyond the county boundary. It is also submitted that further to the judgement of the European Court of Justice, ECJ in case C-127/02 commonly referred to as the Wadenzee decision, the consent authority is obligated to adopt a precautionary approach to the impacts on protected habitats and species. It is submitted there is **insufficient information** in the application to support an assessment and determination All transportation requirements for all phases of the trial not limited to staff and materials, in particular waste management for interim waste outputs and final trial outputs to determine with the legislatively requisite absolute scientific certainty that the proposed trial does not constitute "a likely significant effect" and/ or does not constitute an "adverse impact on site integrity" not limited to but particularly in respect of:

- Waste management for interim waste outputs and final trial outputs
- Site hygiene management

- Operational oversight of all stages of the trial, in particular proposals for security and saboatage considerations in respect of the trial
- Transference of altered biological characteristics outside the confines of the site consequent on the trial and its effects

Additionally, the technological data for the specific trial and indeed the techniques in general cannot afford the requisite scientific certainty either.
In an extract from a BBC news report detailing the contraction of Monsanto's operations in Europe – notes :

> *"..., industry observers say it tests the imagination to believe that the decision to retreat from Europe is entirely unrelated to the results of three years of British field trials into the effects of growing GM crops on surrounding plant and animal life.*
>
> *Just published, the largest analysis of its kind ever undertaken indicates that in two cases - oilseed rape and sugar beet* - ***there is harm to the local ecosystem.***"

The BBC news extract referred to is available at the following URL:
http://news.bbc.co.uk/2/hi/business/3198312.stm

I submit the EPA is obligated to consider that the proposed trials in pursuing their respective application would have outlined no significant negative risks or effects, yet the outcomes have proved the contrary.

In this regard it is particularly noted that the purpose of the deliberate release is described as follows in the application material for the trial in question: **

> *The purpose of the release is to:*
> □ *Quantify the impact of GM potato cultivation on bacterial, fungal, nematode and earthworm diversity in the soil, compared to a conventional potato system;*

It is therefore clear that the trial is considered to have potential impacts on bacterial and fungal activity – wherein the control of the impact of same is necessarily limited given airborne transmitters and also the consumption and absorption thereof by other species. Additionally the impact on other species consequent on the consumption of earthworms etc is neither managed nor adequately quantified or contained by the proposals outlined. In light of the complex interactions of ecosystems and foodchains – the environmental and economic consequences of this trial are of serious issue and should be refused.

Given the strength of viewpoints on either side of the debate; the complexity of the issues at stake; the timeframes to really evaluate accurately the impacts; the extent of resource required to conduct accurate impact analysis; the irreversible nature of the impacts; and the difficulty of effecting and containing a realistic trial - that such inherent scientific uncertainty is entirely inconsistent with the obligations of the 'precautionary approach'.

It is submitted the EPA must in addressing its obligations under the Habitats Directive must consider how the ECJ in Waddenzee describes the second task is to be undertaken by the national competent authority under Article 6 (3) of the Directive. In Waddenzee, at pages I-7470/I-7471, paragraph 55 et seq the ECJ said that:-

> *"... it lies with the competent national authorities, in the light of the conclusions of the assessment of the implications of a plan or project for the site concerned, to approve the plan or project only after having made sure that it will not adversely affect the integrity of that site [56] "It is therefore apparent that the plan or project in question may be granted authorisation only on the condition that the competent national authorities are convinced that it will not adversely affect the integrity of the site concerned. [57] So, where doubt remains as to the absence of adverse affects on the integrity of the site linked to the plan or project being considered, the competent Authority will have to refuse authorisation.[58] .....the authorisation criterion laid down in the second sentence of Article 6(3) of the Habitats Directive integrates the precautionary principle....."*

Thus, the ECJ builds the precautionary principle (as identified in case C-157/96 National Farmers Union and Others [1998] ECR I-02211) into Article 6(3). This was expressed in page I-7471 paragraph 59 of the Waddenzee Judgment as follows:-

> *"Therefore, pursuant to Article 6(3) of the Habitats Directive, the competent national authorities, taking account of the conclusions of the appropriate assessment of the implications of mechanical cockle fishing for the site concerned, in the light of the site's conservation objectives, are to authorise such activity only if they have made certain that it will not adversely affect the integrity of that site. That is the case where no reasonable scientific doubt remains as to the absence of such effects. (see, by analogy, Case C-236/01 Monsanto Agricoltura Italia and Others [2003] ECR I-8105, paragraphs 106 and 113)"*

The content and scope of the precautionary principle was explained in Case C-236/01 Monsanto [2003] ECR I-08105. That case concerned the interpretation of Article 12 of Regulation (EC) No 258/97 of the European Parliament and of the Council of the 27th January 1997 concerning novel foods and novel food ingredients and genetically modified food. Article 12 of the Regulation entitles a Member State to temporarily restrict or suspend

trade in food or food ingredients when it has detailed grounds for considering that the food or food ingredients endangers human health or the environment. Article 12 also entitles the Commission to examine the grounds relied upon by the Member States to suspend trade. In Monsanto Italy invoked Article 12.

In order to comprehend the relevance of the Monsanto decision, it is helpful to identify the relevant paragraphs of the latter judgement at pages I-8205 to I-8207:

> *"[106]. If the twofold objective of Regulation No. 258/97, namely ensuring the functioning of the internal market in novel foods and protecting public health against the risks to which those foods may give rise, is not to be adversely affected, protective measures adopted under the safeguard clause may not properly be based on a purely hypothetical approach to risk, founded on mere suppositions which are not yet scientifically verified (see to that effect, as regards a non-harmonised field, the judgment of the EFTA Court in Case E-3/00 EFTA Surveillance Authority –v- Norway, EFTA Court Reports 2000-2001, p.73, paragraphs 36 to 38).*
>
> *[107]. Such protective measures, notwithstanding their temporary character and even if they are preventive in nature, can be adopted only if they are based on a risk assessment which is as complete as possible in the particular circumstances of an individual case, which indicate that those measures are necessary in order to ensure that novel foods do not present a danger for the consumer, in accordance with the first indent of Article 3 (1) of Regulation No. 258/97.*
>
> *[108]. As regards the burden of proof on the Member State concerned under Article 12 (1) of Regulation No. 258/97, that provision requires the Member State to have 'detailed grounds' for considering that the use of a novel food endangers human health or the environment.*
>
> *[109]. It follows that the reasons put forward by the Member State concerned, such as result from a risk assessment, cannot be of a general nature. None the less, in the light of the limited nature of the initial safety analysis of novel foods under the simplified procedure (see paragraph 79 of the present judgment) and of the essentially temporary nature of measures based on the safeguard clause, the Member State satisfies the burden of proof on it if it relies on evidence which indicates the existence of a specific risk which those novel foods could involve.*
>
> *[110]. In addition, given that, as the national Court has rightly observed, the safeguard clause must be understood as giving specific expression to the precautionary principle (see, by analogy with Article 11 of Directive 90/220, Greenpeace France & Others, cited above, paragraph 44), the conditions for the application of that clause must be interpreted having due regard to this principle.*
>
> *[111]. According to the case-law of the Court, it follows from the precautionary principle that where there is uncertainty as to the existence or extent of risks to human health, protective measures may be taken without having to wait until the reality and seriousness of those risks become fully apparent (Case C-157/96 National Farmers Union & Others [1998] ECR I - 2211, paragraph 63, and Case C-180/96 United Kingdom –v –Commission [1998] ECR I-2265, at paragraph 99).*
>
> *[112]. Therefore, protective measures may be taken pursuant to Article 12 of Regulation No. 258/97 interpreted in the light of the precautionary principle even if it proves impossible to carry out as full a risk assessment as possible in the particular circumstances of a given case because of the inadequate nature of the available scientific data (see to that effect Pfizer Animal Health –v –Council, cited above, paragraphs 160 and 162, and Alpharma –v- Council, cited above, at paragraphs 173 and 175).*
>
> *[113]. Such measures presuppose, in particular, that the risk assessment available to the national authorities provides specific evidence which, without precluding scientific uncertainty, makes it possible reasonably to conclude on*

the basis of the most reliable scientific evidence available and the most recent results of international research that the implementation of those measures is necessary in order to avoid novel foods which pose potential risks to human health being offered on the market".

Here we see the ECJ describing the function of a national competent authority carrying out a risk assessment using the precautionary principle in the area of consumer and environmental protection. This forms the basis of the Court's ruling in *Waddenzee* as to the requirement that the decision maker may not entertain a reasonable scientific doubt when it makes conclusions on a risk assessment. It is submitted that a simple finding by the EPA which it might consider in this case as to the absence of a likelihood of significant environmental effects cannot fulfill the requirement that in point of law the EPA may not entertain a reasonable scientific doubt as to the absence of adverse effects on the integrity of the site. Therefore the body of evidence must be provided and assessed.

It is clear from paragraph 113 of the *Monsanto* judgment as cited above that the application of the precautionary principle involves risk assessment. The principle demands that the national competent authorities conducting the risk assessment must have evidence which makes it possible to conclude that the plan or project under consideration will not adversely affect the integrity of the site.

Adapting the language of paragraph 113 (page I-8207) of the Monsanto case to Article 6(3) of the Directive, it may be said that the provision is to be interpreted as requiring the EPA to have specific evidence, without precluding scientific uncertainty to enable it reasonably to conclude on the basis of that evidence that the project will not adversely affect the integrity of the site. A mere speculative decision not evidentially grounded as to the absence of a likelihood of significant environmental effects cannot suffice for the hard edged, evidence –based decision as to the absence of adverse effects on a site's integrity.

Notwithstanding the above, the extent of data collation and analysis required to be submitted by the applicant and then subsequently assessed by the EPA makes this application unviable and uncompetitive.

Further costs to be considered in this regard include the inevitable cost of litigation challenging any decision to allow this trial and the potential fines from the European Union for breach of directives.

Economic Considerations, and wider strategic risks

There will undoubtedly be numerous submissions arguing for the importance of Irelands current GMO free status, and I support fully the argument that such presents Ireland with an incredibly important competitive advantage. In the context of the current economic crisis, Irelands indigenous industries particularly the Agri-Food industry and our tourism sector are critical for not

only economic recovery but economic survival, and represent collectively a significant proportion of GDP and employment. Given that over half of Ireland's Agri Food production is exported with over 70% of that being sold within the EU, the preferences of the EU market must be a critical consideration, and the market research pointing to a rejection of genetically modified product must be considered. It must also be considered on what basis can the economic interest of this one trial – funded by an agency outside of the state in the Netherlands, can be justified in terms of the damage it will do to the brand image of Ireland's environment and food production credentials, and to the irreversible impact it will have on the environment in which we produce food and offer services?

It is noted that while the within application is for a "cisgenic" trial, the Netherlands are pursuing commitment to "transgenic" potatoes. Therefore it also must be asked and answered - that while the proposed trial is also being conducted in Finland and the Netherlands – why is there a need for Ireland's non-GMO status to be compromised? Are there not other locations where this trial can be conducted which have already undertaken GMO trials? The question must then also be asked if there is infact a wider strategic and commercial intent to compromising Ireland's GMO-free status and what benefit accrues to whom? and who is driving this trial?

The economic impact in particular to farmers who have invested in development of an organic product is particularly problematic. There is a body of scientific evidence available to indicate negative impacts on insects feeding on genetically modified crops,[2] in particular on their reproductive capacity. Therefore the impact on an already problematically low population of insects providing pollination services also has to be considered and the wider economic cost that could have on food production in general. Again in this regard the purpose of the deliberate release is described as follows in the application material for the trial in question:

> *The purpose of the release is to:*
> □ *Quantify the impact of GM potato cultivation on bacterial, fungal, nematode and earthworm diversity in the soil, compared to a conventional potato system;*

It is therefore clear that the trial is considered to have potential impacts on bacterial and fungal activity – wherein the control of the impact of same is necessarily limited given airborne transmitters and also the consumption and absorption thereof by other species. Additionally the impact on other species consequent on the consumption of earthworms etc is neither managed nor adequately quantified or contained by the proposals outlined. In light of the complex interactions of ecosystems and foodchains – the environmental and

[2] SUMMARY OF CONCERNS ABOUT TRANSGENIC CROPS
Compiled by Vern Grubinger, Ph.D
Director, University of Vermont Center for Sustainable Agriculture
September, 2000, and journal and papers referenced therein.

economic consequences of this trial are of serious issue and should be refused.

Finally in the context of the provisions of Art 7 of the Habitats Directive, it is noted that ***proposed*** Special Protection Areas for Birds are covered by this provision in addition to those of Art 6. In brief this means that the stricter and higher level of protection afforded pursuant to Art 4(4) of the Birds Directive also pertains to these sites, and as clarified by the European Court of Justice economic considerations cannot be used as a justification by a member state in deviating from the protections afforded under the law. Again the precautionary approach is required in this instance.

For convenience Art 7 is quoted below and relevant ECJ judgements are provided to ground the argument in the paragraph above and to outline it in more detail:

> ***Article 7***
> *Obligations arising under Article 6 (2), (3) and (4) of this Directive shall replace any obligations arising under the first sentence of Article 4 (4) of Directive 79/409/EEC in respect of areas classified pursuant to Article 4 (1) or similarly recognized under Article 4 (2) thereof,* ***as from the date of implementation of this Directive or the date of classification or recognition by a Member State under Directive 79/409/EEC, where the latter date is later.***

The EPA is undoubtedly aware that while certain sites have been designated as SPAs, further to a judgement of the ECJ – boundaries in many instances are required to be realigned resulting in a re-designation process, with sites also enjoying a pSPA status or "proposed SPA" status. While in certain instances this has not been initiated, the ECJ has also clarified that a member state can enjoy no benefit from a delay in action. In brief the authority for the point, that only sites already classified under the Birds Directive are amended by Article 7 of the Habitats Directive, is Commission v France, Case c-374/98, Basses-Corbieres. It is noted that this same case continues on to outline why no benefit should accrue to a state consequent on a default on its obligations in relation to any delays which might occur in processing intended actions by the state, which for example in the instant case would include the intention of Ireland to modify the site boundary and formally re-designate the site and any delay incurred in advancing same. This later point is highlighted lest any challenge arise consequent on the exact timing of the re-designation process relative to either the application, or the consent process for the within consents. For completeness it is also noted that the legal mechanism Ireland, as a Member State has adopted for fulfilling the requirements of the Birds Directive with reference to SPAs has been by way of statutory instrument pursuant to s3 of the European Communities Act 1972.

Finally in the judgement of the ECJ in Commission v Germany, Case 57/89, 1991 ECR 1-883 (Leybucht Dykes Case), the court addressed the situation where notwithstanding negative impacts to a pSPA, the Consent Authority

wished to proceed. It addressed specifically the basis on which exemptions to the obligations pursuant to these Articles could be granted, and they are confined to very specific grounds, pertaining to the nature of interests to be served. At point 22, the court dealt with the grounds upon which a Member State may reduce the area of an SPA. The judgement clarified that theses are grounds that correspond to:

*"a general interest which is superior to the general interest represented by the ecological objective of the directive – **economic and recreational requirements do not enter into consideration".***

Therefore in conclusion on these points it is submitted, there are extensive legal obligations under the Habitats and Birds directives which the EPA must fulfil in respect of this application and very specific restrictions in what it can consent to and on what basis.

Legislative requirements under the SEA[3] directive:

In the context of the regulations SI 500/2003, it is submitted that the assessment and consequential plans stipulated bring this application under the remit and provisions of the SEA directive, and that a Strategic Environmental Assessment is required.

Article 3
Scope
1. An environmental assessment, in accordance with Articles 4 to 9, shall be carried out for plans and programmes referred to in paragraphs 2 to 4 which are likely to have significant environmental effects.
2. Subject to paragraph 3, an environmental assessment shall be carried out for all plans and programmes,
(a) which are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use and which set the framework for future development consent of projects listed in Annexes I and II to Directive 85/337/EEC, or
(b) which, in view of the likely effect on sites, have been determined to require an assessment pursuant to Article 6 or 7 of Directive 92/43/EEC.

The Directive defines plans and programmes as follows:

For the purposes of this Directive:
(a) 'plans and programmes' shall mean plans and programmes, including those co-financed by the European Community, as well as any modifications to them:

[3] **DIRECTIVE 2001/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL** of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment

— which are subject to preparation and/or adoption by an authority at national, regional or local level or which are prepared by an authority for adoption, through a legislative procedure by Parliament or Government, and

*— which are required by legislative, **regulatory** or administrative provisions;*

The regulation SI 500/2003 makes numerous references to the 'plans' required as part of the obligations for deliberate release programmes. It is submitted therefore that the application can only be considered in the context of an Strategic Environmental Assessment which has not been conducted, and which as a matter of proper planning and sustainable development should be properly conducted. In the context of the EPA's valued role in championing the proper adherence to the directive I submit that this is a particularly critical consideration for the consent authority's deliberation.

I thank the EPA for its consideration of my remarks

Yours sincerely

Attracta Uí Bhroin

Enc. BBC webpage referenced within

(67)

Afri
ACTION FROM IRELAND

Afri Submission to the EPA Relating to the Teagasc Application to undertake a field study with genetically modified (GM) blight resistant potatoes.

The following submission has been prepared by Afri, a non-governmental organisation which was founded in 1975 in response to the scandal of hunger in a world of plenty. Food and famine have always been our core themes, and the annual Afri "Famine Walk" has been a flagship event since its inauguration in 1988. Afri exists to promote the vision of, and strive to bring into being, a more just and more equal world where everyone has access to basic necessities such as food, water and shelter. Afri works in partnership with marginalised people affected by, or engaged with, issues of equity and food security, especially in the global 'South'. This submission is in response to the application submitted by Teagasc on the 27th February 2012 seeking to study GM potatoes in the research centre in County Carlow.

Background to the Submission

Afri has long sought to raise awareness about famine and the causes of famine in the world, especially through our Famine Walk held each year for the last 24 years in Louisburgh, County Mayo. This walk commemorates the tragedy of the Great Famine and in particular the loss of lives that occurred in Doolough, as a direct consequence of the failure of the potato and the response by those in authority. During the Irish Famine there was an overarching dependence on the "lumper" potato. This potato was very popular due to its high yield. However, it has a low resistance to blight, which was evidenced in 1845 when the potato crops failed in Ireland with disastrous consequences.

While the political and economic causes of the Great Famine are well known, the fact that it was also an environmental disaster is often overlooked. This environmental catastrophe occurred as a result of the over-dependence of the population on a very limited variety of potatoes: only about three different types of potato were grown in the 1840s; this is in stark contrast to places like the Andes where about 200 different varieties of potatoes would typically be grown to ensure security

of food supply.[1] The Andes example represents best practice as it is widely known that it is essential to have a variety of species in order to ensure food security: "Diversity is a vital component of the ecosystems which sustain human activities and enable us to cope with changing environmental conditions – thereby ensuring future food security."[2]

Key concerns

1. Blight Free Potato and the need for GM

A key question at this juncture is whether Ireland actually needs to produce GM crops. It has been shown that GM crops increase the need for pesticide control[3] and, in fact, other farming methods are more successful at controlling pests and disease than GM.[4] There are also serious health concerns about GM food which have never been adequately researched, nor is this something that Teagasc is proposing to do: they are simply researching the "potential impact [GM blight resistant potatoes] could have on our ecosystems".[5] One study found that eating GM food had an unexpected result in the gut but no further research was subsequently carried out.[6] Furthermore, it is clear that there is no appetite for GM food at European consumer level.[7]

The suggestion that a GM potato would prevent a famine like that which occurred in Ireland ever happening again is disingenuous. A major cause of the Irish Famine was the monoculture that prevailed at the time. Focusing on producing a "blight free" potato to the exclusion of other varieties would lead to an inevitable decrease in biodiversity. Over the course of the past century a staggering 90% of Irish vegetable varieties have become extinct[8]; promising a holy grail of a blight free potato would very likely result in dependence on one variety to the exclusion of other varieties. In reality biodiversity is better.

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[1] Clare O'Grady Walshe, *Seeds of Hope in a World of Insecurity,* (Dublin: Afri, 2010), p. 5.
[2] *Ibid,* p.8
[3] Charles Benbrook, Ph.D., "Impacts of Genetically Engineered Crops on Pesticide Use: The First Thirteen Years". (Colorado: The Organic Centre, November 2009). http://www.organic-center.org/science.pest.php?action=view&report_id=159. Accessed 17 March 2012.
[4] N. Beintema et al., *International Assessment of Agricultural Knowledge, Science and Technology for Development: Global Summary for Decision Makers* (IAASTD, 2008). http://www.agassessment.org/index.cfm?Page=IAASTD%20Reports&ItemID=2713 Accessed 17 March 2012.
[5] "Teagasc applying to field test GM potatoes as part of EU Research Study", Teagasc website, http://www.teagasc.ie/news/2012/201202-27.asp Accessed 19 March 2012.
[6] T. Netherwood et al., "Assessing the survival of transgenic plant DNA in the human gastrointestinal tract" *Nature Biotechnology* (2004) 22: 204–209
[7] "Minister's decision on GM foods criticised", *Irish Times*, 9 February 2011.
[8] Clare O'Grady Walshe, *Seeds of Hope* (2010), p. 13.

Afri
ACTION FROM IRELAND

2. Exclusion Zone

One argument put forward by Teagasc in relation to the GM field tests is that they will be extraordinarily careful and will ensure that an extra-large contamination zone will be applied in the course of their tests.

However, a report by Institute for Prospective Technological Studies found that while the risk of contamination of GM potatoes to organic potatoes is low compared with other crops it is not within the threshold standard of 0.1%.[9] Contamination is possible via volunteers working on the farms. Quite simply, organic and GM potatoes cannot exist side by side without contamination occurring. Therefore, it appears logical to us that the organic route, which is tried and trusted, and in high demand by consumers, should be the path to follow.

Even if it may be possible in this instance that no contamination does occur, the question must be asked as to whether the end justifies the risk to farmers who do not support GM and whose reputation is based on being non-GMO? In 2011 it was shown that the food and agricultural sector was worth 8% of our GDP.[10] At a time of great economic uncertainty is it worth jeopardising one of the positive things Ireland has going for it? As an island Ireland has the potential to market itself as a GM-free zone, rather than going down this perilous route.

Recommendation

Afri strongly urges the EPA to refuse a licence to Teagasc given the scientific uncertainty around the risks to human health, the possibility of contamination (despite Teagasc's stated commitments to avoid this), and the consequences for biodiversity. The importance of biodiversity is acknowledged by the EU and they have pledged commitment to the halting and reversal of biodiversity loss by 2020, stating that:

> *Biodiversity – the variety of Life on Earth – makes our planet habitable and beautiful. We depend on it for the food, energy, raw materials, air and water that make life possible and*

[9] "Scenarios for co-existence of genetically modified, conventional and organic crops in European agriculture", *Institute for Prospective Technological Studies* (2002), p. 73: http://ftp.jrc.es/EURdoc/eur20394en.pdf Accessed 20 March 2012.
[10] "Fears GM move will damage our food reputation", *Irish Times*, 22 February 2011.

drive our economy. And we look to the natural environment for equally important things like aesthetic pleasure, artistic inspiration and recreation.[11]

At this critical point, the EPA has both an opportunity and a responsibility to uphold Ireland's reputation as a green, clean and GM-free food producer. A decision to permit GM trials now cannot be rectified at a later date.

Furthermore, the International Assessment of Agricultural Knowledge, Scientific and Technology for Development (IAASTD) undertaken in 2009 by 400 scientists and development experts from over 80 countries was approved by 58 governments, including Ireland. It states that "policies that promote sustainable agricultural practices... stimulate more technology innovation, such as agroecological approaches and organic farming to alleviate poverty and improve food security."[12] Most notably GM is tellingly not promoted as one such technological approach despite the participation of the GM sector in the negotiation of the report.

Afri recommends that further support should be given to the Irish Seeds Savers Association who **already supply** blight-resistant potatoes and are doing vital work to meet Ireland's obligations under the Convention on Biodiversity and ensuring that native Irish seeds are preserved. Currently, they are building an "ark" to house a diverse variety of Irish seeds.

This is the future and the best way of ensuring that a tragedy on the scale of the Great Famine of the 1840s never occurs again, rather than the foolhardy promises of a GM blight-free potato.

Dated: 22nd March 2012

[11] European Commission website on Nature and Biodiversity: http://ec.europa.eu/environment/nature/index_en.htm Accessed 17 March 2012.

[12] IAASTD Summary for Decision Makers of the Global Report (2009), pp. 23-24: http://www.agassessment.org/reports/IAASTD/EN/Agriculture%20at%20a%20Crossroads_Global%20Summary%20for%20Decision%20Makers%20%28English%29.pdf Accessed 22 March 2012.

Independent

(68)

Maureen O'Sullivan TD
Dublin Central

Environmental Protection Agency
P.O. Box 3000
Johnstown Castle Estate
Co. Wexford

27nd March, 2012

A Chara,

I am writing with regards to the issue over Teagasc's request to the EPA to begin GM trials on potatoes. I understand it is the first time that a GM trial has been pursued in Ireland.

I believe it is important to consider the public's concerns over the 'open' trial of genetically modified potatoes in Ireland and the factors involved on a number of levels; environmental, economic and social.

Environmentally, once GM trials begin and GM food production is in place this cannot be reverted. I believe this warrants considerable public debate before any decision is made and should be left to the public to decide whether it should go ahead.

The Aarhus Convention, not currently signed by Ireland, but is enacted by a number of European Union member states, should be taken into consideration which would give the Irish people a role in the decision making process. It states it is 'the right of everyone to receive environmental information that is held by public authorities' and I believe consumers, food producers and civil society have the right to be educated on this matter and any other matters pertaining to agriculture in Ireland.

I respect Teagasc's openness with regards to consulting with stakeholders, focus groups and the public through open days and including them in the discussion; however public opinion should be sought before the trial begins rather than during it. I believe this would contribute to ensuring trust and transparency on behalf of the public to a state funded body and authority.

I feel this would be a more inclusive way to approach this development.

Thank you,

Maureen O'Sullivan

Maureen O'Sullivan TD
Independent
Dublin Central

(69)

-----Original Message-----
From: John Heney [mailto:heney.john@gmail.com]
Sent: 27 March 2012 13:24
To: Bernadette Murray
Subject: Submission Re GMO trials

Dear Ms Murray,

As per instructions I have paid €10 fee via laser card to Ms Dargan in your Dublin office and received telephone confirmation.

I would also like to thank you very much for all of your help. Below is my submission.

Kind regards

John Heney

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Tipperary
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To;
The Environmental Protection Agency
Johnstown Castle,
Co. Wexford

Dear Sir/Madam,

I would like to make the following submission in relation to the proposed trials "Assessing and monitoring the impact on the agri-environment of genetically modified potatoes with resistance to Phytophthora infestans, causative organism of late blight disease (2012 – 2016).

As a lifelong producer of grass-fed beef, a premium Irish product internationally recognised as the chief plank of Ireland's food marketing strategy, I believe that holding such trials can have no other effect, than seriously damage the credibility of the food that I and my fellow Irish farmers produce.

Science as it has evolved, has consistently shown that as a profession it is not infallible. Even though many in the profession still appear to support this infallibility claim, it has been repeatedly demonstrated that all scientific research is in fact just "work in progress". For instance Rachel Carson was once dismissed and indeed demonised by many in the profession when she warned of the dangers of synthetic pesticides

The unfortunately reality is that in spite of repeated assurances from the scientific fraternity to the contrary; an upsurge in the instances of GM contamination and cross contamination are increasingly being documented [http://www.gmcontaminationregister.org/]

This is a critical issue for the Irish farming, because after many years of hard work Ireland has developed a clean green image for its food exports which is the envy of our many global competitors.
Research projects such as these proposed trials, while interesting in their own right, run the risk of totally undermining Irelands huge competitive advantage as a food producer in return for very dubious gains.

Yours truly

John Heney

(70)

The FIG
17 Finnspark
Finnstown Cloisters
Lucan
Co Dublin
27 March 2012

Re: **Field trial to test GM potatoes, Teagasc, Oak Park, Carlow**

GMO Register No G0469-01

Dear Sir/Madam,

Please find below our submission points in relation to the above application – this is submitted via email further to our having send via the postal system a a postal order for €10.00 to cover our submission re the public consultation on the proposed Field Treial of GM potatoes.

As indicated in the covering letter (copy also provided) with the required payment - our submission would be sent to you electronically before the closing date – which we are now doing. We would appreciate confirmation of receipt regarding same at your convenience.

We wish to make the following points:

We submit the application requires assessment under the SEA directive (Directive 2001/42/EC). In brief and not limited to the requirement of regulations SI 500/2003 for numerous 'plans' associted with the planned release of Genetically Modified Organisms, we contend that this brings the application within the remit of plans and programmes required by regulation as provided for in the definition of of plans and programmes covered by the provisions of the directive and national regulations thereof. Notwithstanding the about we also submit that given the nature of the application and the wider strategic context in which it should be assessed, we submit it would be best practice and advisable and consistent with proper planning and development for an SEA to be conducted. Given the EPA's role with the advancement of the SEA protocols and best practice – it would be particularly disappointing if this requirement was not addressed fully.

We submit that the provisions of the Habitats Directive Art 6(3) in particular need to be considered and indeed Art 12. The impact of this release on Natura 2000 sites in Ireland and on protected species needs to be considered. The application is deficient in considering same. The onus is on the consent authority to determine with scientific certainty there the likely significant effects and the effects on site integrity. We submit there is insufficient information available to do so in the application, and the extent of analysis and assessment required would be most substantial.

Yours sincerely

Justin Byrne
Chair
The FIG
Figireland@gmail.com

(71)

Environmental Protection Agency
EPA Head Office
Johnstown Castle

27 March 2012

Response to: Notification number B/IE/12/0
Assessing and monitoring the impact on the agri-environment of genetically modified potatoes with resistance to Phytophthora infestans, causative organism of late blight disease (2012 – 2016)

From: Stella Coffey. The following requested via email to have their names appended to this objection: Charlie Williams, Laura Cosgrave, Tom Pollard, Richard Auler.

The following general comments are in response to overall issues regarding the Teagasc document and the application process:

Time for response
The time limit (27 Feb- 27 March) for responses to the the Teagasc application is inadequate, particularly considering the document has 35 pages, and that its technical nature requires research and consultation for advice.
EPA should address the inadequacy of the time in which to make representations for future applications.

Right of the public to information and participation in decisions concerning their environment and their health as it relates to the environment
People in Ireland have a right to access to information and public participation in decision-making regarding their environment, and their health as it relates to the environment, under the Aarhus Convention, aka the Convention on access to information, public participation in decision-making and access to justice in environmental matters.
This right has been infringed by the manner in which the information for this GM potato trial has reached the public.

In addition, under Article 7 of the Aarhus convention, and as specified in paragraphs 3, 4, and 8 of Article 6 of the Convention, the public's right to participate in the policy decision-making process regarding GM cultivation in Ireland has not been upheld. In 2007 government policy stated a commitment to Ireland being a GM free zone. Change in this policy took place without public participation. Considering the nature of the issue, ie, GM, and the primary target of its effects, ie, food, exclusion from participation in its policy development is a serious infringement of that right.

Purpose of the Teagasc trial
The 3rd purpose stated by Teagasc for the trial is as follows:
"Employ the project's resources as a tool for education and demonstration in order to proactively engage and discuss the issues that most concern stakeholders and the public at large in regards to the cultivation of GM crops in Ireland"

'Engaging and discussing' GM crop cultivation with the public and stakeholders AFTER the field cultivation of GM crops (by their very nature, crops outside of secure contained growing cannot be prevented from shedding pollen, tubers and seed) is underway is

outrageous. Having it as a research purpose is unreasonable and unacceptable and smacks of marketing matters rather than biosafety and biodiversity ones.

If this particular purpose is being influenced by the EU aspects of this project, it is not obvious from the application. The public have a right to know the origin and the current rationale for this third purpose.

Difficulties accessing relevant information

Access to information relevant to this licence application has been difficult.
At times emails sent to info@teagasc.ie bounced back.
Difficulties regarding access to references used in the application are detailed elsewhere.

I wished to examine the AMIGA project proposal in order to fully assess the Teagasc application. When I contacted the Teagasc office seeking a copy of the AMIGA project proposal I was referred to the AMIGA website. The proposal was not available there. I then contacted AMIGA and was told the document was 'private' at which I expressed surprise as the project is publicly funded and funding decisons were finalised. I then contacted the EU DG Research and Innovation (RDT) who said a response would be issued within 15 working days as per regulation (3 April). I was further informed on 23.3 that a further 15 working days would be required as each of the 22 participants had to be consulted about releasing the document to me.

For a publicly-funded project this is most odd and certainly infringes on my right to access to information under the Aarhus Convention. It also undermines the credibility of the Teagasc application statement of 'no involvement by the ag-biotech industry in the proposed field experimentation in Oak Park'. Until I have access to the AMIGA project proposal I can only assume that there is at least indirect ag-biotech involvement in the Oak Park trials. Furthermore it is reasonable to assume until otherwise disproved by evidence, given the well-documented involvement of 'the ag-biotech industry' in DuRPh, the Potato Genome Project, and allied potato and potato blight consortia at EU level, that there is, at the very least, indirect 'ag-biotech industry' involvement in the Oak Park trials.

Hopefully the AMIGA project proposal will be eventually accessible to me. However it is being denied to me during the timescale for submitting 'respresentations' regarding this licence application. This does not fit with contemporary standards of transparency.

Compliance with the SI No 500 of 2003

The Second Schedule, C.2 (1) includes the statement: "It is important not to discount any potential adverse effect on the basis that it is unlikely to occur".

However the Teagasc document has numerous examples that seem to discount adverse effects. For example, H6, p29:
"The Rpi-vnt1-1 is derived from the wild potato species S. Venturii and there is no evidence to suggest that this cisgene , or any other Rpi genes that exist in conventional potato varieties exert any toxic or allergenic effects to human health. The impact on human health is therefore negligible."

A reasonable interpretation of the Teagasc risk assessment is that it does not comply with the requirements of SI No 500 of 2003 as it appears to discount virtually all potential

adverse effects with words like 'negligible' and 'no propensity'.

Definitions

A major shortcoming regarding making sense of this application is the absence of a definition of the term 'agri-environment' as used in the title. Apparently this term is commonly used in the public administration aspects of agriculture at EU and national levels, eg, as in REPS. However, having the term as a core element of a research task's title without an accessible definitive meaning supplied is incomprehensible and undermines the proposed research and the credibility of this licence application. Indeed without an explicit definition of what is being assessed, a cynical observer might note that its absence gave great flexibility to the research design at least until the results started coming in.

Another major definition failure involves 'cisgenic'. The term is used in the Teagasc application, according to my computer counting facility, 48 times and without any definition provided. This omission further undermines the credibility of this application, particularly as one could reasonably interpret the repeated use of 'cisgenic' as a planned effort to gain acceptance from a reluctant public for a 'less threatening' variation of GM crops. This item will be dealt with in greater detail later.

Biosafety Aspects

The Cartagena Protocol spells out the relavant aspects of biosafety in a way that is totally at odds with how Teagasc, in this application, appears to virtually ignore the known risks of genetically engineered plants in its proposed trial. Minimising of risk and repeated assumption regarding the absence of risk based on spurious arguments are used throughout this application. In effect, this application virtually ignores the known biosafety issues regarding GM crops; in doing so it contravenes the Cartagena Protocol.

Resistance & Biodiversity

Biodiversity is now widely recognised as a vital source of biological resilience for dealing with future shocks and impending climate change manifestations. Biodiversity is also a matter about which we have international obligations.

GM potato cultivation uses a model that supports monoculture cultivation to fit with its food production model of industrial intensive (and unsustainable) farming. Large scale potato cultivation in general appears to ignore the fact that its model of large fields of cloned plants offers virtually no genetic diversity to pests; a mixture of genetic types in a potato field (South American small holders grow up to 12 varieties) is a good biosphere-friendly tool for maintaining healthy plants. Large scale cultivation of a cloned plant also has a reducing effect on surrounding flora and fauna with knock-on effects that diminish biodiversity in those areas so planted.

The Teagasc GM potato trial is at odds with what is known about resistance of organisms. Resistance involves concepts of evolution and mutation. A pathogenic oomycete, when faced with a resistant host, is likely to favour evolving strains that can sooner or later overcome the host's resistance, through meiosis-induced genetic variation and/or mutations. This situation is reflected in the history of the late blight, Phytophtera infestans, since the mid-20th century when 2 mating strains were first recorded. As the blight's genetic variation increased so did its ability to overcome the defences of more and more potato

varieties, to the point where few varieties can resist Blue-13. In other words, a potato that is resistant this year may fall prey to a newly-evolved blight strain next year. It is illogical and ill-advised to develop a risky (widely acknowledged as so) GM potato that is blight resistant, whose resistance could last for a short time only. Furthermore, there is a view that a single-gene for resistance is more risky (in terms of its resistance being overcome) than a plant with multiple genes for resistance. In other words, a GM potato with a single resistant gene is theoretically less robust than it ought to be.

References in the application

Some of the references used in this application are available only via academic-type libraries. Some require payment of substantial fees for access. One reference is unavailable, seemingly as it has not yet been published. Using an unaccessible (at least to the public) paper as a reference is unacceptable.

I would deem at least one paper, ref 19 p11, (Haverkort et al, 2008) to be of dubious quality for the following reasons. While Potato Research describes itself as a peer-reviewed journal, it appears not to subscribe to the by-now, widely accepted practice whereby authors declare their interests. In this way, readers can take the implications of such declarations into account when judging a paper's contents. While in the potato community, many may know that the paper's leading author, AJ Haverkort, is the project manager of the DuRPh cisgenic potato project, the financial interests' of the last two named authors as two of the group of 6 scientists who hold patents on aspects of cisgenic potatoes is unlikely to be well know. I find it incredible, especially after the high-profile peer-reviewed scandals to-date, that such information is not explicitly stated on this paper. For this reason, I consider this paper to be unacceptable as a reference.

B. Information relating to the recipient plant and the parental plant

B1, p7. Regarding to the information from the Teagasc study tracing gene dispersal, it is unwise to draw conclusions from that study as it reports that 'a more detailed statistical analysis of this dataset was limited by inclement weather during the trial'. From that information reported in the study's documentation, it is therefore not accurate to state that the 'management and flowering characteristics of cv Desiree under Irish conditions have been thoroughly examined'.

B2 (a)(i), p7. The rationale presented in this section is illogical. Impact of pollen from plants at location A would not manifest for at least another generation on tubers at location B; the target of pollen impact would be the flowers and seeds of its contemporaneous neighbour.

Details of the Teagasc gene flow studies referred to here are required.

Is 'complete control' of volunteers being achieved an accurate description? Give details.

The use of a now-discredited and highly-controversial herbicide, glyphosate is noted.

B2(a)(iii) p8. Include physiological information here. Agronomic detail alone is inadequate.

B3(b), p9. The paper in reference 9 is not available so the claim of a 'significantly reduced'

number of recorded volunteers cannot be confirmed. Note again the use of herbicides.

The behaviour of true potato seed described in this section does not tally with OECD (1997) document.

B4. A colleague is dealing with aspects regarding pollen dissemination in a separate objection.

B7. This section appears to be, solely, a list of potato pests organisms from fungi, oomycetes, bacteria, viruses, insects and parasitic nematodes.

Provide a list of the pre-trial inhabitants of the soil and air (use of the term 'organisms' in the heading suggests flora-type organisms should be included along with the fauna-type ones), permanent and occasional. Deletions and insertion to that list and in their populations must be part of the monitoring exercise.

While the B section title refers to the parental plant, and, presuming the 'where appropriate qualification refers to situations where the inserted gene originates in a non-plant organism, no information appears to be provided in this section regarding the parent plant, S. venturii.
Information on the following is required: its phylogenetic position, particularly when compared with S. tuberosum cv Desiree; whether tuber-bearing and its tuber-bearing features; whether edible to humans or animals; its sexual compatiblity with S. tuberosum both in nature and in the laboratory; its pollen formation and dispersal; its seed formation and their viability; sexual compatability with S. nigrum and S. dulcamara.

C: Information relating to the genetic modification in section

The genetic engineering process is identified in C.1 as Agrobacterium tumefaciens-mediated transformation or ATMT which further involves a binary plasmid as a vector. According to C 2, p14, the plasmid contained the NPTIII gene. As I understand it, this is the antibiotic resistant component. Provide evidence of the extent of the NPTIII gene's removal.
I wish it to be noted that, in terms of the information conveyed to the public, it would be more accurate to state that an antibiotic resistant marker was used, specify the process used to remove it, and give an audited figure regarding the capability of the process to achieve 100% removal of antibiotic markers.

Regarding the plasmid map in Fig 3, no evidence is presented that the area between R and L is actually what was transferred into the GM Desiree cv.
No DNA sequencing or molecular analysis information is provided.

D: Information relating to the genetic modificatio in section

The applicant should provide a more detailed exposition of S. venturii, the source of the gene with increased resistance to P. infestans, particularly given the importance placed on the 'cisgenic' term and the implied 'close relation status' of S.venturii to S. tuberosum cv Desiree. In addition, the applicant should provide information on the following: Is S. Venturii tuber-bearing?; is it edible?; is it cultivated?

D2, p16. Where is the evidence regarding the production or otherwise of amplicons?

D2(b), p17. Teagasc states "No sequence has been deleted". It is more accurate to say that no deletion of host genomic DNA has been detected. It appears that loss of genomic DNA has not been looked for. If unexpected alterations of the behaviour of S. Tuberosum cv Desiree-Rpi-vnt1-1 are positively detected, this information will be important.

D4(a), p18. Where is the evidence that no changes were observed between the GM line and its equivalent non-GM line?

D4(b), p18. Is the material referred to in this section from S tuberosum cv Desiree-Rpi-vnt1-1? Provide evidence from the Netherlands glasshouse and field trials of gene dissemination. Was the cv Desiree 'previously studied' at Oak Park a GM line? Where is the evidence relevant to gene transmission from those Oak Park studies?

D4(c), p18. Provide evidence of the impact on frost tolerance of S tuberosum cv Desiree-Rpi-vnt1-1 tubers?

D5, p19. Where is the evidence from tests in Netherlands, of phenotypical stability alluded to in the A15-031 line?
Provide evidence of the number of generations for which resistance has been consistently expressed.
One trait appearing not to have been affected does not mean that other traits haven't been affected. Is there evidence of other traits (including non-agronomic ones) having been noticably affected?

D6, p19. The "A15-031 material is not expected to interact any differently with the agri-environment (with the exception of how it resists P infestans) than . . . S tuberosum cv Desiree". This statement is contrary to a significant amount of data on the effect of GM crops on target and non-target organisms in its environment, and to what is widely recognised across the board as unpredictable effects of transgenic organisms.

I do not agree that discussion of horizontally transferred antibiotic resistant genes is irrelevant as no evidence is provided that 100% of the antibiotic resistant gene was removed.

Provide the known data on what is known about gene transfer from S tuberosum cv Desiree-Rpi-vnt1-1 within its agri-environment and about other genetically modified S tuberosum cv Desiree lines.

D7, p19. What is the basis of the assumption that the Rpi-vnt1-1 gene "has evolved to solely prevent infection by P infestans"?
Please state the assumptions on which the following are based: "This Solanum genetic sequence is not expected to exert any toxic, allergenic or harmful effects on animal/human health and /or the environment?
Provide evidence of all soil effect trials, all non-target organism trials, all animal and human feeding trials involving S tuberosum cv Desiree-Rpi-vnt1-1.

D8, p19. Provide more details of plan for disposal of the plant material: the information here is inadequate.

D10, p20. "Due to this level of specificity between host and pathogen no effects on other organisms other than P infestans can be expected by the release": this is not a valid assumption as it ignores the pleiotropic effect of genes, the probability of mutagenic effects of the transgenic event, and/or any epigenetic effects.

Is the control crop going to be sprayed? Details please.

The comment in D10 regarding a change in fungicide treatment surfaces an apparently further major flaw of the proposed trial: The trial appears to be assessing and monitoring the impact . . .of genetically modified potatoes with GM resistance to industrial-agriculturally produced potatoes. There is no attempt to compare with other methods of potato production. The complicating factor is this: a possible reduction in fungicide use with the S tuberosum cv Desiree-Rpi-vnt1-1 can be expected to affect the soil flora and fauna and will not be discernable from effects of the S tuberosum cv Desiree-Rpi-vnt1-1 on soil organisms.

A further issue is made obvious: the detrimental effect of fungicides and other biocides on soil, and subsequently on plants growing in that soil – science-based evidence is available[1]. There is also science-based evidence of undesirable effects of synthetic NPK partial fertiliser use on soil and plant nutrition, and the role of these effects on plant health and plants' ability to withstand disease.[2]

It is deeply ironic that one of the arguments supporting this trial made by Teagasc is to minimise the toxic effects of the fungicides used currently. Is this an admission that biocides that are apparently part of good farming practice and standard cultivation practice are undesirable? A response on this matter would be welcome.

D11, p20. "solely related" appears to be a repetition of assumption in D7. What is its basis?

D13, -20. Evidence must be provided for claims made here re unanticipated effects of other trials. Note, effects monitored must be more than agronomic ones.

E: Information relating to the site of release

E2, p21. Note bumblebees are a documented pollinator of S. Tuberosum. Teagasc notes their presence on the site.

E3, p21. A separation of 40 metres from other potato crops is inadequate when unpredable effects are taken into account. The history of GM crop cultivation indicates that the exclusion zone regarding contamination by gene flow from pollen is a man-made construct that doesn't allow for nature what with weather, animal movement, human error and unforeseen circumstances.

1 Mudich A (1967) Effect of trace elements bound to superphosphate on the resistance of potato tubers Pytophtera infestans (Mont.) de Bary. Acta Phyto Ac Scien Hungaria, 2, pp 295-302. Martin C (1976) Nutrition and virus diseases of plants, Fertiliser Use and Plant Health. Int Potash Institute. 1976, pp193-200

2 Albrecht WA . Walters C (ed), (1975) The Albrecht papers. Acres USA.

F: Information relating to the release cxt Article 14

F1, p22. The AMIGA project appears to be quite secretive and, as detailed above, I have been unable to gain access to its project proposal. Therefore I'm unable to assess the Teagasc research proposal in the context of the AMIGA project's own project proposal.

Strong reservations about the in appropriateness of the 3rd stated purpose for these trials have already been expressed.

Teagasc states "Critically, there is no involvement by the ag-biotech industry in the proposed field experimentation in Oak Park . . . public research body . . . not . . placing on the market". The use of the term "critically" could be interpreted as saying more about the intentions of the the writer to nudge the reader to a certain conclusion, than confirming the suggestion of zero ag-biotech involvement.

While there may be virtually no direct ag-biotech involvement in the Oak Park trials, there are ag-biotech footprints and fingerprints all over some of the other 21 AMIGA participants. The previous paragraph contains a reference to the Durph project, where the S tuberosum cv Desiree-Rpi-vnt1-1 was developed. The Durph project has a slogan of three aims, the third of which is profit. All of Durph's publicly-funded projects are subvented significantly by Dutch and international industry, as is the university in which it is located.

Given the above I can only conclude that the writers set out to convey zero ab-biotech involvement in the Oak Park trials, as an antidote to views of opponents of GM crops to the corporate role in the biotech industry and the disturbing trends of ag-biotech monopolisation which are a severe threat to food security globally.

F3, p23. Clarify whether the 2012 trial will include planting a control.

F4, p23. Again, this section seems to suggest that S tuberosum cv Desiree-Rpi-vnt1-1 will be compared to a control that includes pesticide use. As pesticide use impacts on biodiversity, it seems reasonable that the GM potato should be compared with non-GM potato without pesticides and a non-GM potato with pesticides in order for any reasonable conclusions to be forthcoming.
Please identify the defoliating agent which will be used.

G. Information on control, monitoring, post-release and waste treatment plans
G1(a), p24. Use of a 40 metre exclusion zone to the nearest neighbouring potato crops is undesirable from the perspective of an observer who expects pollen movement. It is notable that there is a history of contamination from trial crops and commercial crops despite declared safety margins.

G1(b), p24. 40 METRE EXCLUSION ZONE
Provide evidence to confirm statements re animal and/or bird predation of the potato berries and their glycoalkaloid content. What evidence is available for berries of S. Tuberosum cv Desiree-Rpi-vnt1-1?
What broad spectrum herbicide is being considered for use in this instance? If it glyphosate, Teagasc must first re-assess this choice in light of the recent cumulative

evidence of negative impacts of glyphosate on the biosphere and the incorrect assumptions made in the past about the length of its period of persistence in the soil.

Is it correct to assume that Teagasc's main control action for S. Tuberosum cv Desiree-Rpi-vnt1-1 involves repeated use of glyphosate? ('a commercially available herbicide' as in G2, p25). If so, on biosafety and biodiversity grounds alone, this should not be so.

G2, p25. Regarding the decision to monitor for volunteers, is evidence available regarding the source (whether tuber or seed) of volunteers for conventional potatoes? Is evidence available of same for S. Tuberosum cv Desiree-Rpi-vnt1-1?

G4, p26. Please indicate how this AMIGA primary research objective is going to be achieved in terms of isolating the effects of any or all synthetic fertilisers and/or biocides used 'in accordance with standard conventional practices for the cultivation of commercial potato" (in F4, p23).
Provide details of name and ingredients of all fertilisers and biocides which will be used during this trial.
Indicate the specific biodiversity indicators, both above and below ground, which will be monitored.

In particular, can the applicants state that the GM and non-GM lines be treated identically? The aims of the experiment (to apparently simultaneously) test for effectiveness of resistance and for environmental microbiological effects of the transgenes would appear to be scientifically incompatible.

Does the information regarding a Walsh Fellowship feeding study not contradict the final line in G3, p25?

The observations during the growing season MUST include much more than 'agronomic assessments'. A complete list of what will be regularly monitored during the release period must be provided.

It would be more accurate to describe the assessments made during the growing season as 'to ascertain whether' than 'to ensure' the trialled crops performance.

It is unacceptable not to include pollen flow studies in this trial. Previous Oak Park studies have not been carried out on pollen flow in the wild on S. Tuberosum cv Desiree-Rpi-vnt1-1 and it is unacceptable to draw conclusions from non-GM pollen flow studies considering the evidence of unpredictable effects in GM crops.

G6, p27. The description of the security situation at Oak Park is at odds with the very recent burglary of beehives from Oak Park.

H. Risk Assessment.

H1, p27. 'Potatoes are not competitive outside the confines of the managed cropping system' is a statement that belies the persistence of potatoes in and near compost heaps, not to mention what is suggested about potato volunteer and groundkeeper persistence by the monitoring techniques described under 'Observations after release' in G5, p26.

H1 is replete with assumptions regarding the competitiveness or otherwise of S. Tuberosum cv Desiree-Rpi-vnt1-1 and assumptions 'does not alter' 'not anticipated to confer any difference' re persistence or invasiveness. However no evidence is provided to confirm those assumptions.

The risk management implications are stated as 'will be negligible' and with 'no propensity' to become more persistent. This is directly as odds with The Second Schedule, C.2 (1) of S.I. No 500/2003 which states: 'It is important not to discount any potential adverse effect on the basis that it is unlikely to occur'. H2, p28 contains a similar type of statement.

H3, p28. Provide full details of Irish-specific research and give references for the peer-reviewed literature alluded to.

Give concise comprehensive details of the risk management strategy.

This section includes the statement 'Critically, there is no risk of the cisgene being introduced into conventional potato crops as potato is propagated clonally'. What of situation where true seed germinates, plant grows and matures and its tubers end up among conventional ones? Just saying it won't happen (as in Three Mile Island disaster) doesn't overcome nature (gene pollution aspect) or human error possibility.

H4, p28. The final paragraph of this section appears to assume that the only environmental impact of S. tuberosum cv Desiree-Rpi-vnt1-1 is linked to the change in fungicide use. Ditto in H5, p29. This assumption is at odds with too many known factors.

H6, p29. This section states that the Rpi gene in conventional potatoes has been overcome by P. infestans. So it is not reasonable to assume that Rpi and Rpi-vnt1-1 would have identical effects re toxicity, allergenic or other effects on human health without evidence. What studies are the basis for this conclusion? In the absence of such evidence it is not reasonable to assume 'the impact on human health is therefore negligible'.

H7, p29. By what means has the trial site been made rabbit- and rodent-proof?
It appears that aerial insects and soil fauna are being ignored by what is proposed in this section.

Table Pages 31-33
pp31-33 contain a six-columned table. Without an accompanying heading on the table to give it context, it is impossible to judge the relationships between the contents of its rows and columns.

Some overarching comments

- This application indicates that Teagasc assume that the only alteration to the S. tuberosum cv Desiree-Rpt-vnt1-1 plant is the transgene. It would be much more accurate to state that whenever transgenic plants are examined, unanticipated alterations are found.
  A hundred or so papers present that information.

- The technical details of the genetic engineering described in section C belie Teagasc's media presentation of a nothing-to-worry-about cisgenic potato with the insinuation that it is not transgenic. The spin used by Teagasc in its public statements on radio, newspapers and on its own website is utterly disengenuous. Teagasc failed to even attempt to convey the actual details of the process to the public. Instead the absence of an antibiotic resistant marker was repeatedly referred to. This is also misleading.

- The use of glyphosate as part of control of volunteers and as biocide for GM plant remains is contrary to acceptable biosafety- and biodiversity-focused cultivation of crops.

- The Teagasc application repeatedly refers to the GM Desiree cv as 'cisgenic'. The first reference in the text is "the cisgenic potato line A15-031". No definition is provided for the term anywhere in the application, but somehow the implication seems to be that 'cisgenic' is less risky than 'transgenic'. This implication is further enforced in how conclusions are drawn about 'cisgenic' plants, particularly in the risk assessment section.

  My desk research has shown that the 'cisgenic' concept is hotly-contested even regarding its numerous definitions. The term appears to have more to do with 'market acceptance' and 'consumer acceptance', and with the business aspects of potato production rather than the science of potato cultivation and its disease issues. Papers such as Haverkort et al in ref 19, p11 of the Teagasc report and Schouten HJ, Krens FA, Jacobsen E. EMBO Report 7 (2006) include aspects of food, farming and research policy, food safety and GM regulations, consumer acceptance and market development as well as scientific matters. It is not helpful to confuse questions of risk and food safety by introducing issues of market penetration or consumer acceptance.

  I found the science issues regarding transgenic plants well defined and informative in the following paper and consider that it puts the cisgenic issue in a more honest way than in the Teagasc application:
  Wilson AK, Latham JR, Steinbrecher RA, 2006, Transformation-induced mutations in transgenic plants: Analysis and biosafety implications. Biotechnology and Genetic Engineering Reviews. Vol 23 pp209-234.

  From the evidence available to me it seems that the only difference between cisgene/cisgenesis and transgene/transgenesis is the source of the transferred gene(s): genetic engineering technology is common to both. It is the genetic engineering technique which gives rise to unpredictable effects and those effects are the source of the risk.How the term 'cisgenic' has come to be used regarding potatoes is informative of its value in judging its merits as a defining term regarding biosafety.

  At this point, some knowledge of the origin of the word 'cisgene' in important for context. Wageningen University is reported to be where it was first used in 2004 in a PhD thesis to describe a type of breeding. For whatever reason its use was quickly

taken up by scientists and others, particularly in Wageningen's potato-related projects, including DuRPh. A number of papers and reports were published, working groups set up, some with a view to using this new concept to create a loophole in the GM regulatory system. This is clearly stated in peer-reviewed papers. It is likely that the scientific terminology of cis- and trans- used for mirror-imaged isomers was the original inspiration for the word – cisgenic in contrast to transgenic. But by 2005 there was a serious current pushing the cisgene concept in potato and potato blight circles. It is likely that many of those scientists who are unfamiliar with genetic engineering, biotech and even those whose specialist knowledge is in another area, accept that cisgenesic is the opposite to transgenesic, with perhaps a consequent acceptance of minimal associated risk.

- The elements of cultivating potato as a food and starch crop which appear to have been considered by the designers of this research project include: increased virulence of P. infestans; increased use of fungicide especially in terms of imminent EU biocide restrictions considering their toxic nature; crop losses; loss of resistance in some potato varieties; scale and value of the potato industy.

  Aspects which appear to have had minimal or no consideration include: re-appraisal of P. infestans and potato relationship in the context of new agro-ecology and low input farming theory and practice; re-appraisal of current knowledge and concepts of disease; re-appraisal of optimal desirable nutritional profile of potato; re-appraisal of the current role of 'the market' and 'the industry' in directing favoured species; full-spectrum costing of all aspects of potato production.

  A recent review article[3], throws some light here: of the 622 GM fungus resistant plants trialled in the US to the end of 2004, none were commercialised. "The main blocks to market fungi-resistant GM plants are the lack of deeper understanding of the molecular-fungi interactions and the unsatisfactory levels of resistance", said the review's author.

  A factor which slows discovery of other ways of looking at disease and food plants is that the mindset, research strategies and skills sets in universities and other ag research facilities have all favoured the high-tech biotech route while simultaneously starving other ways of looking at and doing food production. Despite this, other options have emerged that work with nature in a respectful rather than dominating way, that aim to understand the biotic connections and working with the soil-food-web to produce nutrient-dense food. Interestingly, a sceptical Australian agricultural sector has been forced to accept that a biodynamic approach has been hugely successful in bringing stripped degraded land to a stage of producing highly sought-after nutrient dense food. And now that the work of Francis Chaboussou[4] has been translated into English, his knowledge, distilled from decades of lab and

3 Meyer H: Systemic risks of genetically modified crops: the need for new approaches to risk assessment. Environmental Sciences Europe 2006 23:7
Islam A: Fungus resistant transgenic plants: strategies, progress and lessons learnt. Plant Tissue Cult Biotech 2006, 16:117-138.
Stuiver M: Engineering fungal resistance in crops. In Plant biotechnology: current and future applications of genetically modified crops. Edited by: Halford N. New York: John Wiley 2006:225-239.
4 Chaboussou F: Healthy Crops: A New Agricultural Revolution. The Gaia Foundation. English edition 2004. French edition 1985.

field work, is now more accessible. Chaboussou makes explicit the link between soil and plant health, disease and plant nutrition. Therein lies answers that most national agriculture agencies aren't even looking for, such is their focus on high-tech biotech. Perhaps a whole answer lies with a biotech that is in tune with nature, an appropriate tech biotech and where much of the knowledge is commonwealth!

- There is now enough evidence[5] of gene contamination from GM crop trials to put GM crop trials in a new category regarding biosafety issues. The evidence indicates that the involvement of government or state agencies is not a deterrent to this contamination.

Conclusions

Overall I find the research project outlined in this licence application to be poorly conceived, poorly defined and seems to bear many of the hallmarks of a funding-led project. So many elements suggest this project's strings are being pulled by EU- or even international agendas, at least some of which are devoting considerable resources of all types to haveing cisgenic accepted as a category of genetically engineered plants that will not be obliged to operate under the GM regulatory system.

I recommend that EPA reject this application for the following reasons:

1. It fails to adhere to SI Number 500 of 2003.

2. It does not fulfill my rights, or those of the public, under the Aarhus Convention regarding access to information and input into decisions, including policy, affecting the environment, and health as affected by the environment.

3. In dealing with a risky technology, good practice in risk procedure demands that part of the assessment must include an examination of other options particularly from the perspective of relative risk. There is no indication that that assessment of other options has taken place in the Teagasc application, or indeed, at the AMIGA project level.

4. It ignores relevant biosafety issues based on the false assumptions it uses

5. It ignores relevant biodiversity issues, some of which have international obligations attached

6. It contains numerous flaws, some more serious than others. Such flaws are incompatible with the responsibility of managing risky material in experimental conditions. It is in the national interest that this matter is considered.

I would like those reviewing this objection to consider the following words of EF Schumacher for a moment:

> "Modern man . . . talks of a battle with Nature, forgetting that, if he won the battle, he would find himself on the losing side."

5http://www.aphis.usda.gov/newsroom/content/2007/10/content/printable/RiceReport10-2007.pdf
http://agcanada.com/daily/testing-seen-as-best-defense-against-triffid/
http://www.plantphysiol.org/content/147/2/487.full.pdf+html

27/3/2012

Re. Notification No. B1E/12/0. (72)

Gortrua
New Inn
Co. Tipperary

Objection to Teagasc GMO potato trial

A Chara,

We, the undersigned, believe that Teagasc is using a potato they describe as a 'cisgenic' line in their proposed trial.
The term 'cisgenic' is said to describe ' close relative breeding '. However 'cisgenic' is a classification subset of 'transgenic' i.e involves genetically engineered transferral of a gene from a different species and is therefore the same as 'transgenic'.
It is universally accepted that 'transgenic organisms' can have unpredictable effects. This is a risk we wish to avoid. For this reason we strongly object to this GMO potato trial.

Tomo'Donnell
Ruth Bowen
Cle Burke
Mary Stafford
Mary Moylan
Luke Hickey

Michael Hickey.
Ute Brinkel
Maggie Crosse.
Cecily Purcell
John Purcell
Mary Sleator
Lb Hickey -

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Theresia Guschlbauer and David Teevan

Brittas, South Lodge, Carrick on Suir, co. Tipperary

26/3/2012

We, the undersigned, wish to object to Teagasc's trial planting of GM potatoes as we think that transgene technology is uncertain and unproven and is likely to cause unpredictable effects, which would not occur in traditional potato breeding. There is not enough scientific proof to ascertain that GM crops are safe and until this is the case, GM crops should not be introduced into Ireland.

The Teagasc GM potato would furthermore set up a GM precedent here and open the door to other GM food crops, something that would have irreversible effects on Ireland's unique ecosystem and by and large 'clean' agriculture.

Yours sincerely

Theresia Guschlbauer

David Teevan

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FROM: GM-FREE IRELAND NETWORK
c/o Michael O'Callaghan
29 Quai du Mont Blanc, CH-1201 Geneva, Switzerland
moc@gm-freeireland.org • www.gmfreeireland.org

27 March 2012

TO: EPA Headquarters
PO Box 3000,
Johnstown Castle Estate, Co. Wexford, Ireland

RE. Teagasc notification of 27 February 2012 for GMO potato experiment (G0469-01, n° B/IE/12/01):
"Assessing and monitoring the impact on the agri- environment of genetically modified potatoes with resistance to Phytophthora infestans, causative organism of late blight disease (2012 – 2016)"

About us:

The GM-free Ireland Network is an association of individuals and organisations collaborating to keep the island of Ireland off-limits to the environmental release of genetically modified organisms (GMOs) including viruses, algae, bacteria, seeds, crops, trees, insects, molluscs, crustaceans, fish, poultry and livestock. Our 130 organisational members (and the populations of the 18 counties and towns which oppose the cultivation of GM crops) represent over 1 million citizens on both sides of the border. Our members include farmers, foresters, food producers, food distributors and exporters, leading chefs and restaurants, NGOs, professional associations, doctors, economists, lawyers, journalists, students, and consumers.

Our knowledge of the agricultural, economic, health, environmental, political, and security aspects of GMOs is informed by the expertise of our members and partners including the International Commission on the Future of Food and Agriculture, the Assembly of European Regions, the Independent Science Panel on GM, the European Network of GMO-free regions, the European NGO Network on Genetic Engineering, Greenpeace Europe, Friends of the Earth Europe, the International Federation of Organic Agriculture Movements, IUCN - World Conservation Union, Slow Food International, Consumers International, and other leading scientists, farming bodies, consumer groups, government agencies, NGOs and politicians around the world.

We support the IUCN resolution for a global moratorium on the release of GMO crops, and the Assembly of European Regions / Friends of the Earth campaign for the preservation of traditional and organic agriculture and for GM-free Zones and Regions in the EU.

Purpose of this submission (prepared in haste and not proofread due to short deadline):

We regard Teagasc's proposed experimental cultivation of GMO potatoes in Irish fields as unethical, highly irreponsible, and unacceptable. We urge the EPA to refuse consent for the following reasons:

1. It would damage our national economy by destroying Ireland's status as a GMO-free crop zone;

2. It threatens biodiversity and risks contaminating Irish potatoes in perpetuity;
3. It requires the use of glyphosate which is linked to birth defects and cancer;
4. The Teagasc document contains scientific mistakes and is also incomplete;
5. It is clearly designed as a PR exercise to manufacture consent for GM food and farming;
6. Teagasc disseminates industry propaganda and repeatedly denies scientific evidence on GM crops;
7. Teagasc admits the related GM patents could be sold or licensed to corporations such as Monsanto;
8. This un-needed experiment is a waste of Irish and EU taxpayer's money.

We shall now provide a more detailed view of these objections. Please recognise the fact that they are inter-connected.

1. It would damage our national economy by terminating Ireland's status as a GMO-free crop zone

For decades, Irish farmers, food producers and distributors have worked hard, in collaboration with Bord Bía, to market their produce under the brand *Ireland — the food island.*

If the EPA provides consent for this field trial, it will immediately terminate Ireland's status as a GM-free crop zone. Regardless of the likelihood of permanent contamination of our country's potato crop, the fact of legal cultivation will damage this brand identity and send a signal the end of our national commitment to a safe GM-free food policy.

This will have negative consequences for our agri-food sector and tourism sectors.

For detailed information on this see:

- *GM-free Irish label good for business: Added value, increased market share, better branding and unique selling point: the most credible GM-free food brand in Europe.* GM-free Ireland Network press release, 17 November 2009: http://www.gmfreeireland.org/press/GMFI46.pdf
- *GM-free production: a unique selling point for Ireland - the food island.* 47-page briefing with GM-free market survey, 17 Nov. 2009: http://www.gmfreeireland.org/GMFI-briefing-3.pdf
- *Video: GM-free food production: a unique selling point for Ireland - the food island:* 17 November 2009 press conference on the business case for Ireland's GM-free label, with Richard Corrigan (Michelin star chef and TV host), Darina Allen (Slow Food Ireland, Good Food Ireland, Free Choice Consumer Group, Artisan Food Forum, and the Farmers Market movement), Malcolm Thompson (Irish Cattle and Sheepfarmers Association), Evan Doyle (the Taste Council, Organic Trust and Euro-Toques Ireland), Dr. John Fagan (Cert ID), and Michael O'Callaghan (GM-free Ireland): http://vimeo.com/7981730

2. It threatens biodiversity and risks contaminating Irish potatoes in perpetuity

As far as we know, there are no Irish regulations about GM field trials. This is an ad-hoc experiment where the rules of the game are made up by the applicant.

Contamination by wind / insect / wildlife / human pollen drift:

Section B 1 claims that the management and flowering characteristics of cv. Desiree have been "thoroughly examined" "under Irish field conditions." But Irish field conditions are already changing rapidly because of global climate change, so that field conditions in 2012 may not correspond to those in 2016 (when the trials are due to end), not to mention subsequent years and decades. Moreover, long-term global climate change is expected to include short-term variations whose chaotic nature is by definition impossible to predict.

Section B. 2 (a)1 of the notification claims that the plants that will arise from true potato seed are agronomically weak and "not capable of competing against weeds and grasses", as observed during Teagasc gene flow studies. The notification contradicts that claim in the next sentence, which refers to the existence of "volunteers arising from true potato seed during the same studies". It then goes on to state that complete control of these volunteers required ploughing, harrowing or use of glyphosate or some other broad spectrum herbicide. Again, although this method of control might work under the scientific supervision at Oak Park it does not correspond to standard farm practice and is therefore likely to fail in the real world if the GM potatoes were subsequently approved for cultivation.

We will address the issue of glyphosate in Section 3 of this submission.

Section B. 2 (b) of the notification cites 4 papers to justify Teagac's claim that the potential for transgene escape to Irish wild potato relatives is "negligible" because S. tuberosum is genetically incompatigle with Irish ecotypes of S. nigrum and S. dulcamara. If correct, would this still be true when Ireland's climate changes?

Section B 4 (a) cites only one scientific paper from 1988 to justify the somewhat unbelievable assumption that "true potato seeds are not spread by birds". Did the paper examine the thousands of birds of different species — including their behaviour and digestive tracts — that would be necessary for this assumption to be really credible? What about dispersion by amphibians and mammals?

Teagasc admits that another study reported on the "potential dispersal of transgenes up to 1000 m from the donor potato population with an inference that the pollen beetle (Meligethes aeneus) was instrumental in facilitating gene transmission."

But section B 4 (a) continues by citing 3 papers to claim that "dispersal of pollen from field-grown transgenic potatoes is limited (99.98%) to within 10m of the transgenic population." This claim was repeated as fact by the Teagasc scientist Dr. Ewen Mullins in a short interview clip on RTE Six-One news shortly after Teagasc notified the EPA about these proposed field trials - even though the notification clearly states in the next paragraph that a 2005 study by Teagasc found that "pollen-mediated gene flow in potato can extend out to 21m from the pollen donor

population."

These assertions of 10 or 21 m dispersion limits stand out to us as completely delusional, in view of Ireland's frequent gale force winds and because of the millions of wind-blown sand particles which are occasionally transported from the Sahara desert all the way across the Mediterranean sea, continental Europe and the UK to land in Ireland.

It is our opinion that Teagasc's proposed 40m "isolation distance" is bound to fail - particularly over the proposed 4-year period of the proposed trial, when numerous days of gale-force winds have the capacity to spread the GM pollen across the country and beyond our borders.

Bear in mind that as part of the public consultation on the so-called "co-existence" of GM crops with conventional and organic crops launched by the Department of Agriculture and Food in 2004, Teagasc - if memory serves us well - recommended separation distances of the order of 30m or 50m, which proved a total failure in Spain, leading to widespread contamination of conventional and organic farmers in that country, meticulously documented by Greenpeace and local NGOs in their 2006 report *Impossible Coexistence - Seven years of GMOs have contaminated organic and conventional maize: an examination of the cases of Catalonia and Aragon* (www.greenpeace.org/international/Global/international/planet-2/report/2006/4/impossible-coexistence.pdf).

Section B contains no information whatsoever about the danger of horizontal gene transfer of the modified DNA from the GM potatoes to non-GM potatoes, to wild relatives or to unrelated species. Surely EPA should look into this. See for example the 80 related papers listed in the sources for the Wikipedia page at http://en.wikipedia.org/wiki/Horizontal_gene_transfer

Section C: information relating to the genetic modification

No comment.

Section D: information relating to the genetically modified plant

Section D 5 claims the inserts are genetically stable based on consistant expression of blight resistance. This is not sufficient evidence that the GMO potatoes have stable genomes. Also, genome instability can continue after termination of research (e.g.. Monsanto RR soy) - (NIAB).

This section fails to mention whether the genomes of the modified GMO potatoes have been scrambled as an unintended consequence of their modification. EPA needs to look into this.

Section D 7 claims "no member of the NB-LRR protein class has so far been identified as possessing toxic and/or allergenic properties." EPA should ascertain whether any studies exist which justify this claim, and if so, if they were done in vitro or for real. Also, the assertion that the GM potatoes from these trials will not be used as animal feedstuff does not correspond to the real world of farming where they would, if approved, inevitably get eaten by farm livestock and wildlife.

Section D 10 fails to define the research protocols that will be used to investigate

potential changes in the interactions of the GMO potatoes with non-target organisms. EPA shoud require that this information be made explicit upfront for peer review, to as to ensure the credibility of Teagasc research results.

Section E: Information relating to the site of the field trials

See our related site-specific comments in Section H below.

Section F: Information related to the release

Section F 4 states "While it is intended to capitalise on the high levels of P. infestans inoculum that is typical of Irish summers, in instances where disease pressure is low, artificial inoculations will be completed on bait plants (S. tuberosum cv. Bintje) within the plot."

Teagasc is thus prepared to introduce virulent strains of potato blight disease to Irish fields as part of this experiment. EPA should not provide consent unless Teagasc can credibly explain what measures, if any, it will take to prevent the blight from spreading across the country.

Section G: Information on control, monitoring, post-release and waste treatment plans

Section H:

As already mentioned above, we consider the 40m buffer zone to be unacceptable.

Section H 3 of the notification goes on to claim that any contamination would be "unlikely" and that its consequences would be "negligible" because "the transfer of the cisgene does not confer a selective advantage or disadvantage." This contradicts the point made in the next paragraph (H 4) which states that "the GM potato lines will exhibit broad spectrum resistance to multiple genotypes of P. infestans. By this absurd logic, the selective advantage of blight resistance in the GM potatoes compared to conventional non-resistant potatoes (made more explicit in the Table on page 31 of the notification) is made to disappear!

The notification admits "The cisgenic line A15-031 will produce tubers and berries that bear true potato seed and hence a potential for seed-mediated gene flow does exist." It continues "However, a comprehensive risk management strategy has been designed to contain both berries and tubers on site, pending removal for storage or destruction." This containment might work under the close supervision expected at Oak Park, but is likely to fail in the rough-and-tumble conditions of the real farming world if the GM potatoes contaminate non-GM varieties and/or if they are subsequently approved for cultivation. The end result is likely to result in some contamination. Being resistant to blight, the GM potatoes would presumably have a competitive advantage.

Teagasc then claims "there is no risk of the cisgene being introduced into conventional potato crops as potato is propagated clonally." This seems incredible, since the fact of clonal propagation for commercial propagation does not stop the wind, birds and bees from contaminating potato plants by pollen.

Section H 5 excludes mention of insects, amphibians, and birds in the list of non-

target organisms - even though these creatures are vital members of the surrounding ecological network.

Section H 6 claims "the impact on human health is therefore negligible" because "there is no evidence to suggest that this cisgene, or any other Rpi genes that exist in conventional potato varieties exert any toxic or allegenic effects to [sic] human health." Teagasc fails to back up this claim with any reference to published science. If any such exists, EPA needs to review it.

Section H 7 claims "the impact on animal health is negligible" because the GMO potatoes will not be used for animal feed and "measures are included to mitigate the impact of wild animals feeding on the site." Does this mean that Teagasc will not investigate the health impacts on domestic and wild animals, even though - if later approved for cultivation - the GMO potatoes will certainly be consumed by both? Teagasc fails to specify what measures it intends to use to prevent consumption by wild animals.

Section H 8 claims "the protein produced as a result of the expression of the Rpi-vnt1.1 gene only interacts with P. infestans effector proteins." Where is the evidence, if any, to support this claim? EPA needs to establish if any credible feeding trials been done with the protein, and if so, upon which species, under what conditions, for how long, and by means of what risk assessment protocols?

Paragraph H 9 states that apart from a positive impact on soil flora resulting from the lack or reduction of fungicide applications, "the impact of cultivating the cisgenic potatoes on the environment will be negligible" because the plots will be mechanically harvested 3 times. This does not correspond to standard farm practice, so once again, Teagasc's research protocol fails to match real world conditions.

The notification fails to provide any details on the scientific protocols that Teagasc intends to use to conduct its stated research objectives - the most important part of the whole project. Section H 3 only contains assumptions and blank statements. No references, no data, no results of previous field releases, nothing on science.

Why would Teagasc design a research protocol that would go against its own vested interests, since it has invested millions of taxpayer funds and years of scientific work to develop GM crops in the first place? Is this not a case of the fox guarding the henhouse?

Site-specific contamination risks:

(a) The Western boundary of Oak Park is formed by the busy railroad track carrying approx 24 daily trains to and from Carlow to Kilkenny, Waterford, Kildare, Dublin and thence to the entire Irish national rail network. These trains could could rapidly disperse GM pollen and/or insects or wildlife vectors across the Republic and Northern Ireland.

(b) The site is only a few hundred meters from the border of County Kildare, a GMO-free zone whose County Council unanimously declared its jurisdiction off-limits to GM crops in a 2006 Motion stating "that this County Council takes all possible measures necessary to promote and maintain Kildare as a genetically modified crop-free zone, in order to protect the interests of farmers and to encourage development of our valuable agricultural industry". (See *Co. Kildare becomes*

GMO-free Zone, GMFI press release, 24 October 2006: www.gmfreeireland.org/press/GMFI31.pdf).

(c) The experiment also risks contaminating potatoes in County Meath and County Westmeath, both of which have also declared themselves as GMO-free crop zones (see map of Irish GMO-free zones: www.gmfreeireland.org/map).

(d) Oak Park is only 30 km from the Wicklow Mountains National Park, and is close to numerous designated ecological sites including Nature Reserves, SACs (Special Areas of Conservation for wildlife habitats under EC law), SPAs (Special Protected Areas for birds under EC law), Natural Heritage Areas, Refuges for Flora, Refuges for Fauna, and Natura 2000 sites (Atlantic Bioregeographical region Sites of Community Importance listed in 2004/813/EC) which the EPA should protect from accidental release (contamination) by GMOs of any kind.

(e) Ireland's prevailing Atlantic winds blow from the West and North-West, and frequently reach gale force. If these winds were to carry GMO potato pollen from the field trials the relatively short distance across the Irish sea, they could easily contaminate many of the 40 English counties which have declared themselves as GMO-free crop zones, along with Scotland and Wales which strongly oppose the introduction of GMO crops. Further afield, the experiment could contaminate farmers in France, Luxembourg, Holland and Germany, causing expensive product recalls and contamination lawsuits. Unless Teagasc has secured liability insurance, Irish taxpayers would have to foot the bill for such contamination in Ireland and overseas.

3. It requires the use of glyphosate which is linked to birth defects and cancer

Teagasc's notification to the EPA admits it intends to spray the test site with Monsanto's RoundUp herbicide to remove unwanted leftover GM potatoes. This was also part of the aborted BASF / NIAB plan for a field trial of GM blight-resistant potatoes at Cambridge in 2007.

Although Roundup is still legal in the EU, and is still widely used by Irish farmers, golf course owners and local authorities, its use by Teagasc for this experiment is not acceptable because:

(a) Roundup (a cocktail of glyphosate and biologically active adjuvants) causes total human cell death within 24 hours at very low levels, and is scientifically linked to birth defects, spontaneous abortions, placental damage, embryo damage, endocrine disruption, cancer, non-hodgkin's lymphoma, multiple myeloma, and other diseases. Roundup is also lethal to amphibians and causes DNA damage in cells. For details info, see page 2 of the summary of the Health Effects of Glyphosate scientific report published by the GLS Bank in Germany: http://www.gmwatch.eu/images/pdf/gm_sum_eng_v12.pdf

(b) Contrary to Monsanto claims, Roundup is NOT biodegradable. For more on this see *The World According to Monsanto*, investigative documentary film by Marie-Monique Robin on YouTube at http://video.google.com/videoplay?docid=6262083407501596844

See also: *The World According to Monsanto: pollution, corruption, and the control of the world's food supply. Robin,* Marie-Monique. Translated by George Holoch. The New Press, 2010. ISBN 978-1-59558-426-7. Available at www.amazon.com/World-According-Monsanto-Marie-Monique-Robin/dp/1595587098/ref=sr_1_1?s=books&ie=UTF8&qid=1332824644&sr=1-1

(c) The inevitable runoff of Roundup herbicide from Oak Park to the adjacent river Barrow (a few meters away) could contaminate and jeopardise the health of the downstream fish, wildlife, and people of Carlow town, along with the Barrow's entire watercourse and its tributaries, its fish, and anyone who consumes them through Co. Carlow, Co. Laois, Co. Kilkenny, Co. Wexford, and Co.Waterford, through Wexford town to the St. George's Channel and the Irish Sea.

(d) Fish contaminated by Roundup from Oak Park in the Barrow could also migrate to the Burren river, and more importantly the Slaney river from Wexford harbour up to its source at Lugnaquillagh in the Wicklow Mountains National Park. The Slaney was, until the 1960s, one of the most important spring salmon fisheries in Ireland.

(e) Roundup runoff from Oak Park to the underground aquifers in Co. Carlow and Co Kildare could also contaminate the drinking water supplies for the surrounding populations. County Carlow alone has seven groundwater drinking supply sources:

- Muine Bheag (Bagenalstown) 2000 m3/day
- Ballinkillin 15 m3/day
- Oakpark 1000 m3/day
- Ticknock 10 m3/day
- Old Leighin 10 m3/day
- Bilboa 6 m3/day
- Leighinbridge 600 m3/day

Co. Carlow also has four surface drinking water supplies:

- River Slaney at Rathvilly 18,000 m3/day
- River Burren at Sion Cross 4,500 m3/day
- River Slaney at Tullow 1,200-1,500 m3/day
- River Burren at Raheenleigh, 900 m3/day

4. Teagasc's notification contains a major scientific mistake and is also incomplete

The notification describes the aim of the experiment as to "quantify the impact of the GM lines on soil microbial populations (e.g. bacteria, fungi, nematodes and earthworms)". Earthworms and nematodes (and some fungi) are NOT microbes — as every schoolboy ought to know!

Who owns the intellectual property rights on the Mexican wild potato genes? Were they stolen? Were the local indigenous people paid? If so, would this not be a violation of the Convention on Biological Diversity?

What evaluation, if any, was done on the original material from the Mexican potatoes?

Was the research protocol designed by AMIGA or by Teagasc alone?

Who would conduct the analysis of the findings of the proposed field trial. If they have vested interests in "positive" results, their analysis will not be credible.

How many different isolates of the blight pathogen does Teagasc intend, if necessary, to inoculate the GMO potatoes?

Will this infection not risk spreading the disease?

Will the blight-resistance be sustainable?

Does Teagasc have insurance cover for this experiment? Who will pay if contamination occurs or if something else goes wrong?

Will EPA monitor the experiment or will it rely on Teagasc to report its own mistakes, if any?

5. It is clearly designed as a PR excercise to manufacture consent for GM food and farming;

In our opinion, the Dutch project to develop these "cisgenic" potatoes including their relentless attempts to change the EU regulations in this regard and get their potatoes exempted is primarily set up as acceptance measure but not as a scientific plant breeding project.

6. Teagasc disseminates industry propaganda and repeatedly denies scientific evidence on GM crops;

We have no reason to doubt the integrity of those honest scientists who work at Teagasc. But although the organisation is widely acknowledged to do excellent work in many other areas of agriculture, Teagasc's scientific credibility on the subject of GMOs is near zero, based on its continued demonstrable track record of related disinformation and lies. Teagasc has spent millions of Irish taxpayer funds on research and development of GM crops, co-funding a Canadian GM industry propaganda conference in 2008, and maintaining a website whose content is worthy of Monsanto's spin doctors. Some members of Teagasc upper management continue to deny the scientific evidence of harm caused by cultivation of GM crops around the world. Some of their GM scientists' denial of science seems delusional.

(a) The Director of Teagasc, Prof Gerry Boyle, is or has been an agricultural consultant to the World Bank, which uses public tax-payer funding from the rich countries to promote GM farming in the developing countries. Boyle makes the astounding claim that the record of GM crops internationally has been "very good" – completely denying the scientific evidence of health dangers, reduced yields, GM superweeds, crop failures, widespread contamination, patent infringement lawsuits, product recalls, billion-dollar food industry losses, EU

market rejection and loss of biodiversity. See for example *GM crops: Research documenting the limitations, risks, and alternatives,* GM Watch, 29 June 2009: www.gmwatch.org/images/stories/gm-cropsgm-watch-version.pdf

(b) Teagasc's former director of crop research, Prof Jimmy Burke (now at University College Dublin) told the Joint Oireachtas Committee on Agriculture and Food that "the record of GMOs to date has been very good", and has also described the introduction of GM maize in Spain as a "great success", despite the widespread contamination of conventional and organic farmers in that country, meticulously documented by Greenpeace and local NGOs in their 2006 report *Impossible Coexistence - Seven years of GMOs have contaminated organic and conventional maize: an examination of the cases of Catalonia and Aragon* (www.greenpeace.org/international/Global/international/planet-2/report/2006/4/impossible-coexistence.pdf)

(c) Teagasc was the subject of international scandal for hosting the controversial *Agricultural Biotechnology International Conference* promoting GM seeds and crops at University College Cork in 2008, on behalf of a Canadian biotech industry front group called the Agricultural Biotechnology International Conference (ABIC) Foundation, managed by Ag-West Bio Inc. and funded by Monsanto. ABIC's Board of Directors includes Jimmy Burke (Teagasc's head of Biotechnology), the conference chair Ashley O'Sullivan (a former Monsanto employee), Roger Kemble (President of Syngenta Biotechnology Inc), and Malcolm Devine (former employee of Aventis CropScience and Bayer CropScience). See related press release at www.gmfreeireland.org/press/GMFI41.pdf

(d) Teagasc's so-called *Information Centre for Genetically Modified Crops in Ireland* website at www.gmoinfo.ie reads like a Monsanto press release. The last time we checked, the Teagasc greenwash failed to mention any of the scientific evidence of health dangers, the fact that GM crops have contaminated conventional and organic varieties — and entire food supply chains — around the world, or that contaminated farmers lose ownership of their seeds and crops under the WTO's international patent laws. The Centre's website also fails to mention the scientific evidence of health and environmental impacts, and the economic risks involved. This self-serving agribiotech industry hype being touted at Irish taxpayers' expense is a blatant example of why Teagasc can not be trusted with GMOs.

(e) In 2009, Teagasc published a study entitled *The GM debate and the Irish pig meat sector. Peadar Lawlor and Maria Walsh explore the viability of the Irish pig industry in the presence of a GM feed ban,* which falsely claimed that using Non-GMO animal feed would wipe out Ireland's pig farming sector. (www.teagasc.ie/publications/tresearch/tresearch200910.pdf). See our detailed critique at www.gmfreeireland.org/news/2009/nov.php#teagasc .

(f) The absurdity of Teagasc's claim that GM crops can be kept separate from (and safely "co-exist") with conventional and organic crops was made clear when the Irish Government Department of Agriculture, Fisheries and Food (DAFF) – which then operated under a policy to ban field trials and cultivation of GM crops) – was accidentally conducting field trials with an illegal variety of GM maize at the National Crop Variety Testing Centre at Backweston in Co. Kildare, and at three other undisclosed locations in Counties Kildare, Kilkenny, and Cork. It is unclear how much, if any, of the illegal GM maize seeds were sold and cultivated by Irish

farmers. See *Unauthorised release of GM event NK603 in conventional maize seed*, EPA press release, 22 June 2010 (www.epa.ie/news/pr/2010/name,30182,en.html) and *Illegal GM maize grown in Ireland*, GM-free Ireland press release, 23 July 2010 (www.gmfreeireland.org/press/GMFI50.pdf).

Teagasc's denial of scientific evidence and its routine dissemination of disinformation and lies about the dangers of GM crops constitute a legal breach of its own *Combined Code of Conduct (http://www.teagasc.ie/careers/workwith/CodeOfConduct.pdf)*, which is "required to meet Teagasc's obligations under the Code of Practice for the Governance of State Bodies and to demonstrate the organisation's commitment as a public sector body to the highest standards of governance". It is also in legal breach of the and *Code of Practice for the Governance of State Bodies.*

7. Teagasc admits the related GM patents could be sold or licensed to corporations such as Monsanto;

Dr. Ewen Mullins admitted this on the The Last Word radio programme on or around Tuesday 20 March 2012.

8. This un-needed experiment is a waste of EU taxpayer's money.

There is no need for GM potatoes. Several excellent varieties of non-GM potatoes resistant to late blight are already on the market (see The Sarvari Trust at http://sarvari-trust.org

There is no market for GM food in Europe and Ireland organic farming sector is booming.

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EPA
PO. Box 3000
Johnstown Castle Estate
Co. Wexford

Regarding the application from Teagasc for a licence to release a genetically modified organism (G0469-01, Reference No B/IE/12/01)

27/3/12

Sir/ Madam,

In reference to the above.

I note on the application that Teagasc intends to use this biological field study as a "tool for education and demonstration" while "quantifying the impact of genetically modified potato cultivation " on soil biodiversity.

I do not believe that it is within the remit of the EPA to licence any release of GM constructs in to the Irish environment for demonstration or education purposes. Biological laboratories are available, worldwide, for this purpose. They are securely constructed to minimise the potential contamination of the wider environment from "negative" effects, as mentioned by Teagasc, as an objective of their proposal.

Proposing a scientific experiment, as outlined, with all the inherent dangers, as acknowledged by the bio-secure methodology to be employed (however insignificant they may be) while at the same time promoting the whole project as a tool for education I find to be a crass indictment of our science establishment.

On this point alone I request that the EPA refuse the Teagasc application due to its cynical style and its confusion of pure scientific endeavour with the promotion of a biologically unsecure argument.

Yours sincerely,

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(76)

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Environmental Protection Agency
Richview
Dublin 14

March 27th, 2012

Re: Teagasc's application to the EPA:

Assessing and monitoring the impact on the agri-environment of genetically modified potatoes with resistance to *Phytophthora infestans*, causative organism of late blight disease (2012 – 2016)

The Lifeline Project is a community led campaign promoting the integrated use of urban resources (people, places, materials, systems) to achieve enhanced efficiencies and well-being. The inquiry focuses on Northwest inner city Dublin as a living laboratory for sustainable development. Project interests include local food systems, urban biodiversity, eco-tourism, green transport and innovative models of healthcare, recreation, and waste management. We would like to submit a representation in response to the above mentioned application. Please see documentation attached.

Sincerely,

Jackie Bourke
Director

The Lifeline Project response to:

Frequently asked questions in regards to proposed GM potato study

Grey = Teagasc
Black italics = The Lifeline Project

As the potato cv. Desiree will be given the DNA of a wild potato variety – why can this not be done by conventional breeding methods?

... the biggest problem is what we call 'linkage drag', which occurs when you try and breed in new traits from wild potato species. Linkage drag means that while you get for example improved disease resistance in your new variety its overall agronomic performance for other traits can be reduced

It appears that genetic engineering will produce an equally unreliable result:

"GM is one tool, it doesn't do everything." Resistance to blight, for instance, might be achievable by implanting one or two genes at a time, but eventually, the blight will adapt to those few genes. And other, more complex traits like nutritional quality and yield depend on many genes, few of which are known, and can only be bred into farmed varieties the old-fashioned way. (Pamela Anderson, head of the International Potato Center, Lima, Peru, 2008)

With most of the EU consumers not wanting GM on their tables, and farmers not wanting to grow it, why is it so important to waste taxpayers' money on this?

We are focussed on the Irish consumer and the Irish tillage sector. We have consistently been asked through our discussion groups, farmer meetings, public lectures etc... to produce Irish-specific information on the environmental impacts, so that people can make an informed choice. For over 10 years now we have witnessed the intractable GM debate between the anti- and pro-GM sides. There is a clear need for scientifically sound, Irish-specific information on this matter and that is what we propose to deliver.

'Teagasc is a unique organisation incorporating research, knowledge transfer and education in a single organisation to support agriculture in Ireland. Knowledge transfer supports innovation by farmers on how they manage their businesses and provides access to the technologies they can apply to improve their competitiveness.' (www.teagasc.ie)

If the motivation for this study is the Irish consumer, Teagasc's has a responsibility to invite the public to examine the issues and contribute to the development of their research into this issue.

Access to technology alone does not assure Innovation and competativeness in the marketplace. Social and economic factors govern consumer perferences in the food sector and nutrition and health outcomes are increasingly influential on choice as we adapt preventative models of healthcare. If the Irish consumer were made aware that a naturally blight resistant potato would eliminate the use of fungacide and promote human (consumers and well as farmers) and environmental health, would they choose these varieites over a standard TESCO commercial product?

Separately, it is important to note that the potato cultivar that we have sought a license to study is a 'cisgenic' line. Cisgenic refers to the transfer of genes within a species, but because of the method used to transfer the genes they are still covered by GM legislation. This contrasts with the traditional understanding of GM, which is transgenic. In this case, genes can be taken from one species and transferred into any other species.

The technique used in this trial is Agrobacterium tumefaciens mediated transformation,' which appears to be the same process used in Transgenesis. Both cisgenesis and transgenesis are considered forms of genetic modification and regulated as such by the EU. This indicates that it is the process (Agrobacterium tumefaciens mediated transformation in this case) that is of concern, irrespective of what plant or animal the genes are coming from.

It is virtually impossible for the average member of the public to understand the complexities of these technologies. The information Teagasc provides above is misleading as are the statistics they have mentioned below:

Significantly, in the most recent survey of European consumers it was reported that while only 36% of Irish people surveyed would accept a transgenic variety, 61% would accept a cisgenic variety.

The Eurobarometer study (Europeans and Biotechnology in 2010, European Commission) referred to here is evaluating European trends and the influences on public perception and the objective of the research is to estimate how consumer opinion is influenced by how the questions are asked. This is how cisgenis in potatoes development is described in the study text:

'Cisgenics, a technique also used to develop new strains of potato that are resistant to potato blight (a contributory factor in the Irish famine in the mid 19th century), can technically be compared to transgenics. In transgenics genes are taken from other species or bacteria that are taxonomically very different from the gene recipient and transferred into plants to promote resistance to herbicides or to insect pests – the latter by the incorporation of a gene that codes for Bacillus thuringiensis (Bt) toxin, for example.

This Is how Cisgenisis is described in the study question, which refers to apples production:

'(to) artificially introduce a gene that exists naturally in wild/ crab apples which provides resistance to mildew and scab.'

The study found that 27% of Europeans 'who expressed an opinion' support GM Food. 66.2% of the people who responded in Ireland felt that ciscenic products 'would be like GM food and should be clearly identified with a special label'...11.8% said they 'would be like normal apples would not need special labeling'...22.1% said they didn't know.

'While both GM food and transgenic apples are seen to be 'unnatural' by three out of four respondents, transgenic apples are more likely to be perceived as safe and not to harm the environment. This suggests that the preamble describing transgenic apples as a technique would 'limit use of pesticides, and so pesticide residues on the apples would be minimal" may have suggested a benefit both to the environment and to food safety.'

No survey sample size is given and readers are reminded that survey results are estimations, the accuracy of which, everything being equal, rests upon the sample size and upon the observed percentage.

Late blight resistant potatoes are around already, through conventional breeding methods, without the need for bacterial infection (GM). There seems little point to add new varieties.

Quite the opposite. The potato sector faces significant challenges in the next 10 years. Increased EU legislation will curtail the amount and type of crop protection products that farmers can use. As conventional potatoes get sprayed up to 15 times per growing season to preserve the crop, this will be a major issue for Irish potato growers. In addition, we have monitored Irish blight populations for over 30 years and in the last 4 years we have recorded the emergence of highly aggressive strains of blight disease that are also exhibiting levels of fungicide resistance. There are no varieties available to commercial farmers with complete resistant to late blight. Material is available with some resistance to late blight which are used by organic growers, but they too can require additional control measures to keep blight out.

As described in Pamela Anderson's quote above, late blight is notoriously adaptive. There is no more likely that GM potatoes will permanantly solve our future blight problems than the naturally blight resistant potatoes currently on the market. If naturally blight resistant potatoes can diminish dependency on fungicides, shouldn't Teagasc be supporting research into the development of these varieties and promoting their use in the marketplace <u>now?</u>

There is surely enough evidence out there that Ireland would benefit from a GM-free status, for its own food supply, and for the export market. This trial could reduce our foreign status significantly, when many countries on the European Mainland are reducing, and even banning, GM crops. We will lose our foothold, and our exports, at a very critical time in our economic history.

Ireland is not GM free and the proposed work will not be the first use of GM in the country. GM sugar beet was grown in field experiments some 13 years ago and we import almost 1 million tonnes of GM animal feed every year to support our food export industry. The proposed environmental study will therefore not compromise our export market.

If the evidence suggests that Ireland would benefit from a GM-free status, it is Teagasc's responsibility to focus on developing a strategy and policy to support this goal.

The proposed study is at odds with Ireland's green image and is at odds with initiatives by other agencies such as Bord Bia

It would be irresponsible of Teagasc to contemplate such a scenario as the organisation's role is to underpin the Irish agri-food industry and no other agency has done more to achieve this. Each year Teagasc invests millions in agri-environmental research projects, which support the development of environmentally conscious farming methods and minimise the impact of farming on our water and soils. The proposed study is about quantifying the impact of a blight resistant potato on levels of soil biodiversity. By acting in this manner Teagasc is addressing the GM question in a responsible and contained manner that will not impact on existing crop systems and will not compromise Ireland's world leading food export market.

The statement that this trial is a responsible way to address the GM question is Teagasc's opinion only. The validity of this approach (application) is currently under investigation by the EPA.

What scientific background do the scientists carrying out this trial hold? Have they worked with other agri-tech industries, and will one of the main industries be given the contract if the field trial 'succeeds'?

The scientists involved in this study are qualified crop scientists with no affiliation to any industry. Since the GM research programme was started at Oak Park in 2002, Teagasc have not received, nor sought, any funding from either side in relation to the GM debate. The variety being tested is not from a biotech company but from publically funded research in Europe. There will be no 'contract' at the end of the study. The objective of this work is to quantify the environmental impact of a blight resistant potato compared to a conventional potato system and make that information publicly available so as to address the current knowledge deficit that exists for Irish-specific crops.

It appears that this statement may not be accurate. If scientists involved in the Amiga project have been funded by the agri-tech industry and own patents on genes that are being used in this trial this must be revealed by Teagasc, with conflicts of interest stated.

In the USA, organic standards have been weakened due to the contamination by GM pollen (which now allow up to 2% GM in their crops). Although I understand this will not happen with GM potatoes under this trial, if they do get to the market, these potatoes will go to seed, and they will contaminate heritage varieties, so our organic standards will be compromised.

There is no commercial interest in this project and Teagasc is not in the business of developing GM crops for commercialisation. In regards to the coexistence of GM and non-GM potato systems, we have researched this with the goal of designing crop strategies to preserve the genetic integrity of non-GM potato crops. Coexistence is possible for potato due to the biology of the crop but there must be adequate regulatory measures put in place

by the Irish competent authorities to ensure that it is maintained. As outlined above potato varieties are preserved through the clonal propagation of tubers, as soon as a potato variety sets true seed the resulting plants are no longer the variety you started with, whether they cross with a GM or another conventional variety. The use of GM varieties would not therefore alter the risk of loosing heritage varieties compared to what we have lived with since potatoes varieties were first bred by man.

One of the papers listed on the Teagasc website as evidence on this issue and submitted to the EPA, 'Enhancing management practises to maintain the sustainability of current potato systems, 'Department of Agriculture, Food and Fisheries - Research Stimulus Fund, Project duration: December 2007- March 2011, has not been peer reviewed and is unavailable to the public.

Why is Teagasc spending taxpayer's money on this research?
This project is funded through the European Framework 7 programme and the Irish study is part of a larger EU project. Entitled 'AMIGA' (Assessing and Monitoring the Impacts of Genetically modified plants on Agro-ecosystems), the project has 22 partners from Research Centres, Universities, State Agencies and SMEs across 15 EU countries. The main objectives of AMIGA are to:

- Provide baseline data on biodiversity in agro-eco-systems in the EU,
- Identify suitable bio-indicators that permit a better integration of GM field experimentation across specific agricultural ecosystems in the EU,
- Deliver an improvement of knowledge on potential long-term impacts of specific GM crops,

It is important to note that the alternative to public-funded research is to wait for privately funded programmes to deliver the research assessments. While that work may be scientifically sound, it cannot claim to be impartial and as such would not contribute constructively to the public's desire for unbiased information on this matter.

This is an unfair statement. Publicly funded research will not come to an end If this specific trial, proposed by Teagasc, is not allowed to go forward. The suggestion that a privately funded research programme is enevitable or the only alternative, it is only hypothetical. Any research into GM will have to be determined through the same legislation and processes that are governing this application. A

Additional concerns

Time and public participation

Four weeks is not an adequate amount of time for the public to assess an application with such far reaching implications for our social, economic and environmental future. This trial has the potential to set future precedent in this area. The issues are volatile and extremely complex, beyond the knowledge base of the average Irish citizen.

The public is entitled to a fully informed public debate on the issues this application has brought to the attention of the public. This would include: An evaluation of our current GM-free status and what benefits a moratorium on all GM products could offer the Irish agri-food sector, the availability and success of non GM alternatives to fungicide control of late blight, Public participation in agri-food sector decisions and marketing strategies, etc.

Transparency and access to information

On March 10th I sent an email to info@teagasc.ie requesting further information on studies referenced on their site as evidence in support of their application bounced back. Several others I know had a similar problem during that week. I also copied this email to pat.murphy@teagasc.ie, frank.omara@teagasc.ie, gerry.boyle@teagasc.ie, none of whom have replied since.

On Friday March 16th I tried to contact Teagasc. The phone remained unanswered most of the afternoon and no message taking facility was provided. Reception finally answered at apx 4:15 I was told I shouldn't have used the info@teagasc.ie (although this was the instruction on their site), and was given the email for Ewen Mullins who immediately emailed me 2 of the 3 papers I requested. The third, 'Enhancing management practises to maintain the sustainability of current potato systems,' Department of Agriculture, Food and Fisheries - Research Stimulus Fund, is not publicly available and is still to be peer reviewed, but has been submitted as part of the EPA application.

National media: Cisgenesis

This term, is used frequently in the Teagasc's application, but no definition provided. The technique appears to be relatively new, first appearing in a PhD thesis in 2004: Towards consumer-friendly cisgenic strawberries which are less susceptible to Botrytis cinerea, J. Schaart. In Europe, currently, this process is governed by the same laws as transgenesis.

I believe the technical details of the proposed trial were misrepresented on National radio on the Today 16.03.12, The Pros and Cons of Experimenting with GM Potatoes to combat blight Broadcast: Pat Kenny (PK) and Suzanne Campbell (SK):

1. SC ' But Teagasc's answer to that, just to fill you in, is that, what they did, they didn't go down what they see as the typical GM route. It is a non patented product, it is from a South American potato that they feel has had millions of years of different exposure to blight.'

My limited research into the specifics of the EU Amiga programme suggests that the blight resistant gene Teagasc is using in this trial is, in fact, patented. If this is the case, Teagasc give misleading information in their application as was SC was inaccurate in her account on radio.

2. PK - 'So this is a potato gene, they've stuck in a potato! This is not Frankenstein, because this is what rose growers do when they do hybridization of roses, (SC - yes, yes) they take a rose that has a nice smell and one that has a beautiful purple color, try and put them

together, and they get a beautiful purple rose that smells sweet. And they've been doing that in their potting sheds for ever and a day. So this is kind of a kin to that. This is not taking the gene from the tetsy fly and transmitting it to a potato.'

SC - 'Yeah...'

Hybridization is hybridization. Genetic modification is genetic modification. Both cisgenics and transgenics are genetic modification and regulated as such. Pat Kenny's comment was both incorrect and uncorrected.

I am concerned that this coverage, aired less than two weeks before the deadline for representations and available as a podcast via Teagasc's news page, was misleading and have written to the Today show to complain.

On March 26, 2012, the Irish Times published an opinion piece on this subject: 'Use the C-word all you want: they're still GM potatoes' by Stella Coffey. For the record, the information she is reporting in her piece needs an official clarification by Teagasc.

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Environmental Protection Agency

27 MAR 2012

Environmental Licensing

Sitric Compost Garden Community

CULTIVATING COMMUNITY (AND FOOD)

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01 6772603
compost@desireland.ie

Environmental Protection Agency
Richview
Dublin 14

March 25th, 2012

Representation regarding Teagasc application:

Assessing and monitoring the impact on the agri-environment of genetically modified potatoes with resistance to *Phytophthora infestans*, causative organism of late blight disease (2012 – 2016)

IRELAND, THE HOME OF SAFE FOOD?

As an island with an independent culture, Ireland has a unique opportunity to take a proactive stand in the GM debate.

On Friday 23rd September 2011 Shane McEntee TD, Minister of State at the Department of ...Agriculture, Food and the Marine pointed out that it is our high food safety standards that underpin the growth of the Irish Agrifood Industry.

He referred to the expected increase in Irish food and drink exports to an all time record of €8.9 billion in 2011, an increase of more than 12%, or almost €1billion, on 2010 levels:

"This follows growth of €700m in 2010 and overall then we will have seen 25% growth in exports from the sector in two years. This is a tremendous performance by any standards. The opportunity for the Irish agri-food sector to continue on this growth path has been clearly identified in the Food Harvest 2020 Report against a background of surging population growth, changes in the dietary habits of developing economies and greater urbanisation".

Minister McEntee pointed out that the continued success of the industry depends ultimately on meeting consumer demands "an absolute prerequisite in this respect is food safety. Food safety is the foundation on which the industry can build other positive attributes such as the environmental sustainability and animal welfare friendly production. Irish food products already have an excellent reputation which we can continue to develop to maximise returns from a competitive market place".

The Minister believes that the responsibility for food safety rests primarily with food business operators. This is where we disagree. It is civil society, the indigenous consumers and growers of Irish food products who have a right to be fully educated on the implication of genetic engineering and instrumental in establishing the fundamental principles that guide future research and development in our agri-food sector

We are convinced that a moratorium on the use of genetic modification, until its impact is adequately understood, will render Ireland an ideal prototyping ground for GM free research and development, giving us a unique and valuable edge in the agri-food industry.

The Teagasc application: important points in our view:

1. The rational for this trial of GM potatoes is their potential resistance to blight and the cost this would save farmers on fungicides while helping them meet EU limits on use of chemicals. Teagasc, quite emotively (and unfairly!), use the Irish Famine to motivate support for the trial. In fact, it may very well be the development of monoculture which left Ireland so vulnerable during the famine period, highlighting the high value we place on biodiversity today. We could be the one EU country out of the 'AMIGA' consortium, (representing 15 EU countries and funded through the EU's Framework 7 research programme) who act as the 'control' (the one participant not using GM) and explore the cultivation of biodiversity and other alternative bio-technological techniques to stave off blight.

2. Because there is no turning back once GM is allowed in, we believe this is a decision for the people of Ireland, not the EPA. The Aarhus Convention, gives every citizen a right to information on and participation in the development of any product, project, or process that will impact on the health of their environment. Although we are one of 2 countries that haven't ratified this convention, it has been law in Europe for over 5 years now, and therefore is law here by default.

3. In their application Teagasc state the following as an objective:

'While the agronomic and economic benefits of using GM to deliver novel control strategies for late blight disease are clear, the intractable debate that has taken place between the proponents and opponents of GM, continues to highlight the public's wish for further, impartial information on the potential impact of GM crops in Ireland.'

In response Teagasc will also conduct an outreach programme with stakeholders and the public through focus groups and open days, to facilitate an inclusive and impartial discussion on the issues that most concern people.'

If an investigation of public opinion is a necessary part of the trial this must happen BEFORE the actual trial is considered, rather than while the trial is already taking place. This point links back to our rights under the Aarhus Convention and the directives it has generated. Firstly we should be given the information we need to construct an informed opinion and then we should be given a role in the decision making. A window of 4 weeks to object to an application as complex and controversial as this is completely inadequate.

Maggie Dunn

Maggie Dunn
Secretary
Sitric Compost Garden Community

78

desireland
healthcare design research

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Environmental Protection Agency
Richview
Dublin 14

March 20th, 2012

Re: Teagasc application:

Assessing and monitoring the impact on the agri-environment of genetically modified potatoes with resistance to *Phytophthora infestans*, causative organism of late blight disease (2012 – 2016)

Teagasc have used the famine as an analogy to support their application to the EPA to trial genetically modified (GM) potatoes in Ireland. The famine is a highly charged, emotional subject, particularly when we are now, once again, experiencing high levels of immigration. There were many reasons for the famine, cultural, political, agricultural, a complex mix that laid the ground for one of the earliest experiments in monoculture:

'By the 1830s one third of the people of Ireland had come to rely on one species of plant (potato) – and one variety for the most part– for 90% of their caloric requirements.' This situation can be contrasted with the 'Palatines,' a colony of small farmers living in Ireland during the famine period who, unlike the average peasant, were able to secure tenure to their land and cash for their labor (as apposed to rent). This gave them the freedom to cultivate a variety of crops and eat a balanced diet, remaining relatively unscathed by the famine. (Feehan, Faculty of Agriculture UCD, 2003)

Global concerns regarding climate justice and food ethics demand that we rationally examine the characteristics of famine in history and unpick their true source. Suggesting that blight was the exclusive cause of the famine in a discussion about the introduction of GM to Ireland (already an emotive topic) is a distracting tactic that diverts public attention from examining the complexities of this phenomenon which still exists today, as the wealthy eat organic beef and the poor, genetically modified crops grown from patented seed owned by multinationals.

In 2008 Pamela Anderson, head of the International Potato Center, Lima, Peru discussed their moratorium on the use of genetic modification: "GM is one tool, it doesn't do everything." Resistance to blight, for instance, might be achievable by implanting one or two genes at a time, but eventually, the blight will adapt to those few genes. And other, more complex traits like nutritional quality and yield depend on many genes, few of which are known, and can only be bred into farmed varieties the old-fashioned way.

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If: a. potato blight is famously prone to voracious mutation into increasingly virulent strains b. We have a perfect climate within which to bred it, c. The ability to depend on a GM for long-term blight resistance is decidedly uncertain, and d. research into naturally blight resistant potatoes is seriously underfunded, how can this trial be justified during the current economic climate when we are under an obligation to prioritize our research? But this is European funding, and as Ewen Mullins, of Teagasc explained on Midland 103 this week: 'the debate has become highly politicized and that's one of the main problems across Europe. At times it's not biological science, it's political science.'

Our agri-food sector is key to our social, economic and environmental future. We must focus our expertise on research that is specific to Ireland, it's exceptional agricultural resources and product development potential. As an island environment with an independent culture, we have a rare opportunity to make proactive use of our GM free status and specialize in areas of biological science that cultivate nutrient rich soil, genetic diversity while eliminating the need for pesticides. The internationally acclaimed Burren LIFE project, based in Clare, which uses farming for conservation to cultivate social as well as agricultural and environmental benefits, is rebranding Burren food production and has attracted over 10 Million in EU funding.

Only 27% of Europeans are in support of GM products (Eurobarometer, 2010), but Ewen Mullins, Teagasc researcher leading the proposed trial argues that there are 'no commercially viable naturally blight resistant potatoes available.' Part of Teagasc's remit is knowledge management. If the public were adequately informed about the issues, the excessive use of fungicides, their impact, and the EU legislation/fines ahead, would a naturally blight resistant potato become more commercially attractive?

The Sárvári Research Trust (http://sarvari-trust.org/), a not-for-profit company based near Bangor in North Wales, U.K. breed Sárpo potatoes which are highly resistant to late-blight disease. Their research focus' is on the late-blight pathogen, *Phytophthora infestans*, and how it manages to evade most methods of control. Six of their varieties are Nationally Listed in the U.K. Characteristics of the Sárpo varieties include high yield and deep-rooting for good drought tolerance and vigorous, weed-smothering foliage. Un-refrigerated storage is possible because of long dormancy. Their hardy constitution means that they have an exceptionally light carbon footprint. Is commercial viability merely a marketing challenge?

If Famine is the concern, simple waste management holds more immediate promise than GM: 'Avoidable waste of cereal-based food in the UK and USA could lift 224 million people out of hunger (the Food Ethics Council, 2009).

Are we experiencing a famine in creative thinking?

According to Teagasc's application one of the three purposes of this trial is to:

> 'Employ the project's resources as a tool for education and demonstration in order to proactively engage and discuss the issues that most concern stakeholders and the public at large in regards to the cultivation of GM crops in Ireland.'

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An investigation of public opinion is not the prerogative of Teagasc, I would argue that it is our civil right as governed by the Aarhus Convention and the EU directives it has generated. Under this legislation the public are entitled to information and participation in any decision that will impact on the health of their environment. This process is required before a trial of GM potatoes in Irish soil is considered, rather than while the trial is already taking place. If Teagasc are the organization promoting this trial, it would be a conflict of interest for them to lead this process.

Kaethe Burt-O'Dea

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The EPA
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Co Wexford.

26th March 2012

Re: Teagasc application to field test GM potatoes as part of EU Research Study

Dear Sir/ Madam

We write to express our formal objection to the proposal by Teagasc to field test GM potatoes as part of EU Research Study.

In our view, Ireland is uniquely placed to benefit from an agrifood industry which is explicitly underpinned by the highest of standards and which exploits the natural advantages we enjoy. Any steps to introduce GM food production will inevitably dilute those advantages.

On the contrary, we believe that a moratorium on the use of genetic modification would serve to place Ireland as the ideal site for GM free research and development, giving us a unique and valuable edge in the agri-food industry.

The Teagasc application should be rejected for a number of reasons:

1. The rational for this trial of GM potatoes is to seek to exploit a potential resistance to potato blight. This approach tends towards monoculture, whereas biodiversity is the more rational and valuable approach, notably if we are to exploit the natural advantages we enjoy in the agrifood sector.

2. If a GM trial is permitted, no matter how limited in scope, a precedent will have been established and the potential to remain a GM-free country will be lost for ever. There is a need for a much wider public debate on this issue before it could be permitted. The Aarhus Convention gives every citizen a right to information on and participation in the development of any product, project, or process that will impact on the health of their environment. While Ireland has not formally ratified, the underlying principles should be applied.

3. In their application Teagasc state the following as an objective:

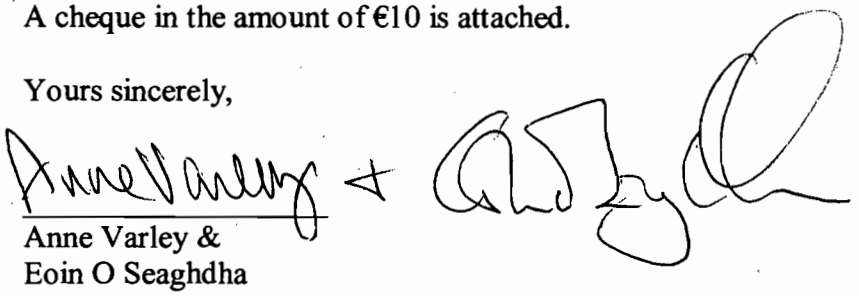
'While the agronomic and economic benefits of using GM to deliver novel control strategies for late blight disease are clear, the intractable debate that has taken place between the proponents and opponents of GM, continues to highlight the public's wish for further, impartial information on the potential impact of GM crops in Ireland.'

In response Teagasc will also conduct an outreach programme with stakeholders and the public through focus groups and open days, to facilitate an inclusive and impartial discussion on the issues that most concern people.'

If an investigation of public opinion is a necessary part of the trial, it is surely the case that this should be undertaken in advance of any trial being commenced. The public needs to be in a position to develop an informed opinion and given a meaningful role in the decision making.

A cheque in the amount of €10 is attached.

Yours sincerely,



Anne Varley &
Eoin O Seaghdha

80

Carrowduff Lower
Ballymacurley
Co. Roscommon
T. 086 284 1114

26 March 2012

Environmental Protection Agency
Richview
Clonskeagh Road
Dublin 14

Re: Teagasc field study with genetically modified (GM) blight resistant potatoes
G0469-01, Reference No B/IE/12/01

To Whom It May Concern,

I hereby state my objection to the Teagasc field study on GM potatoes on the following grounds:

Contamination
There is a high possibility of contamination (by seed and tuber) of other potato plants in the area of the trial site.

Reputation
I believe that our reputation as a 'GM-free zone' is of high value and that these trials will jeopardise this reputation.

Blight mutates
Phytophthora infestans—the disease that the potato is being engineered to withstand—regularly mutates. This is highly likely to render these trials obsolete and necessitate further trials.

Education
A stated aim for the trial is 'educational'. I don't believe that this is a good or safe way to teach/learn a lesson.

Security
The cost of securing such a site is likely to be extremely high.

Please do not hesitate to contact me should you require any further information.

Yours faithfully,

Pearse O'Reilly B.A., M.Sc., M.B.A.
Farmer (and potato grower).

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An Taisce

The National Trust for Ireland

The Environmental Protection Authority,
P.O. Box 3000,
Johnstown Castle Estate,
Co. Wexford.

26 March 2012.

Ref: ***GMO Register No G0469-01***
Re: Application by Teagasc: 'Assessing and monitoring the impact on the agri- environment of genetically modified potatoes with resistance to Phytophthora infestans, causative organism of late blight disease (2012 – 2016)'

Dear Sir or Madam,

The above application by Teagasc has been considered by An Taisce. We are opposed to the granting of the licence. We have set out our reasons in the attached document.

Yours Faithfully

John Harnett
Chairperson

An Taisce

The National Trust for Ireland

Ref: ***GMO Register No G0469-01***

Re: Application by Teagasc: 'Assessing and monitoring the impact on the agri-environment of genetically modified potatoes with resistance to Phytophthora infestans, causative organism of late blight disease (2012 – 2016)'

The granting of a licence by the EPA to Teagasc to carry out field trials on GMO potatoes in an open air environment will allow the cross pollination by these potatoes with other non GMO potatoes. The plants when they flower will be visited by bees and other pollinating insects. These insects will visit other flowering potatoes within their range and cross-pollinate the non GMO plants. This process repeats exponentially as these pollinated potatoes are harvested and some of them replanted the following year for a new crop and so on.

The strong potential exists even at trial stage for the altered GM potato gene to move into the greater potato environment in Ireland.

Brand Ireland

Ireland is perceived by tourists and the wider world as a green and pure country. (This is well documented in research including Nobel Prizewinner for Economics Simon Anholt). A land where the cows and sheep graze in open fields. A land where feed lots do not exist and animals are not reared intensively in sheds all year round.

This perception is supported by the reality, as Harvest 2020 states..." 90% of the diet of dairy and beef animals is composed of grass or silage that is grown on the farm on which the livestock is reared (on permanent pastures)".

The reality behind brands or "brand truth" is increasingly referred to by branding experts as the main driver of brand value – "You cannot make a promise that isn't true" Mary Shellman and David Bell of the Harvard Business School and authors of Bord Bia's Pathways for Growth, advising the government on how to build an umbrella food brand for Ireland based on verified and demonstrated green credentials.

The value of brands is long recognised by corporations who own them. John Stuart chairman of Quaker (originator of the Quaker Oats brand in the USA) in 1900 once said "if this business were split up, I would give you the land and bricks and mortar, and I would take the brands and trademarks, and I would fare better than you." This is why companies like Coca

Cola and McDonalds employ brand managers and measure their brands in contribution to shareholder value. McDonalds brand is estimated to account for 70% of shareholder value. This means that 70% of their share price is attributable to their brand which they recognise is an intangible asset. Such valuation would place a value on Brand Ireland at 70% of GDP per capita in Ireland which would equate to €27,700 per citizen in Ireland (based on IMF 2010 GDP per capita figures).

So too is Brand Ireland an asset and its shareholder is all Irish citizens who benefits directly and indirectly, economically and socially from how that brand is managed.

The licencing of this trial is a direct attack on the integrity of this pure green Brand which represents Ireland's most significant strength and unique selling point (USP) for tourism and food.

Tourism Brand Ireland

In a time when we see tourism as one of the enduring and fundamental long term industries of Ireland why would we damage or destroy one of or USP's – our pure green Brand..

We know that climate change is going to make mainland Europe, in the next three decades and beyond, hotter and dryer during the summer months. Our location combined with our green image means that our tourist product could be in ever increasing demand in the years to come.

The potato is forever connected to the zeitgeist of Ireland. The world knows that the population of Ireland more than halved as a result of the death and emigration arising from the potato famine of 1845. The Diaspora of Ireland link their heritage to Ireland in memory of the emigration journey that their forefathers endured because of the potato.

If we grant this licence the world media will pick up on the emotive and world renowned story of Ireland and the potato... Ireland and the GMO potato...on what we are allowing. The licencing of a trial for GM potatoes will be seen as acceptance by Ireland in the broadest sense that GM plants are going to be allowed in Ireland. The reasoning being - if they allow such an emotive crop to be grown as a gm variety why would they object to any other gm plant. This will also potentially drive an acceptance strategy in communications for the provider of GM seed around the world...*if Ireland...natural and pure... can accept GM for an emotive crop such as the potato ...then so can you.*

This change in our treatment of our environment will no doubt be picked up by the English European and American media. A point in case being the article in the New York Times on 24 November 2011 on research commissioned by Bord Bia on the reasons for falling potato consumption in Ireland.

This change will be reported in our major tourist markets. It won't stop tourists coming next year or the year after but it will slowly eat into our reputation capital as a pure green island.

We will achieve in one simple seemingly unconnected action the negative which Lord of the Rings achieved for New Zealand tourism in the positive. We have to realise that small actions sometimes have large consequences further down the line. We must not be naive in this multi interconnected world where tourists review, study and read about a country on their handheld devices that granting this licence will go unnoticed, uncommented upon or that the loss of purity will not be lamented by Irish citizens who own Brand Ireland. When it is gone it is gone you cannot go back to go!

Food Brand Ireland

The Irish potato market is worth €80m to €85m annually to farmers. The total value of Irish Food and drink exports in 2011 was €8.85 billion. So the value of the Irish potato crop approximates 1% of the value of our global food exports. In fact the Irish potato is not even generally exported, (10% of our production was exported in 2010 due to a shortage in Eastern Europe and Russia).

In food your reputation is everything. Your reputation in a business context is translated financially into your brand value. The programme for government and Food Harvest 2020 both commit to developing and building Food Brand Ireland as a brand with green credentials.

Harvest 2020 and Sustainability

Harvest 2020 recognises that the agricultural sector faces difficulties in meeting current and future requirements in emissions and under the nitrates directive.

"Currently the EU National Emissions Ceilings Directive is being reviewed with a view to setting new targets for 2020. These targets are likely to be significantly lower than the targets set for 2010 and this will pose serious challenges to current farm practices in Ireland."

"Under the EU Climate Change and Renewable Energy Package agreed in December 2008 a number of commitments have been set. These are the commitments to reduce the EU's greenhouse gas (GHG) emissions by 20% on 2005 levels by 2020 or by a more ambitious 30% in the event of a comprehensive global agreement. As part of the effort-sharing proposal of this package, Ireland is one of the countries facing the highest target of a 20% reduction on 2005 levels. While this proposal does not set out any sector specific reduction targets, there will be pressure on the agricultural sector as it currently contributes a high proportion of overall emissions in the Irish economy."

Clearly the existing EU targets that have to be met in the coming years are going to be very hard to achieve. The possible mitigation factors such as forestry, science and better agricultural practice will not go all our way. Harvest 2020 plans for a significant increase in agricultural output leading to significant increased difficulties in meeting these targets. If the targets are not met there will be no resolution for Ireland in dealing with the EU. The targets will have to be met or continuing fines will be imposed until the targets are achieved.

But there is a partial solution - a win-win solution.

It has been established that gm free food achieves a higher price from consumers in Europe. There are a lot of consumers who fear gm food and are willing to pay extra to avoid it.

If we retain our GM free status as an island we can create an international brand which will capitalise on this unique selling point. Harvest 2020 recognises that there will be an increased demand for food with rising incomes worldwide. This will also translate into consumers seeking better quality food and food that is GM free. As indicated with this GM free status agricultural producers can capitalise on the higher price paid for their produce. If they are obtaining a higher price per unit they can produce less agricultural output generating the same if not higher overall profit.

The removal of the need to produce more would reduce the level of emissions and nitrates into the environment making the EU targets all the more achievable.

Biodiversity

Research on GM crops on farmland Biodiversity in the UK carried out on more than 200 plots have demonstrated worrying trends. Bees and butterflies were found to be fewer in the GM fields as low as 68% less abundant in GM fields than in conventionally grown crops. The field margins of GM crops were also found to contain significantly reduced biodiversity. Other complex ecological relationships were found to be much impacted by GM crops, such as a reduction in the range of pollinators and other beneficial invertebrates. Harvest 2020 in its Vision and Targets acknowledges that consumers demand...."the highest quality in production and environmental standards...and are willing to pay a premium for this" Preparing the way for GM crops in Ireland is a regressive step on the objectives of Harvest 2020.

Crosspollination

Under Section E of the Summary information Format for the Release of Genetically Modified Higher Plants submitted by Teagasc to the EPA, it is advised that an isolation distance of 40 meters will be observed between other potato varieties. This approach ignores that there are other means of crosspollination other than the wind. Bees and other pollinating insects will travel to these GM potatoes and cross-pollinate other potato plants within a potential 3 mile radius not to mention 40 meters away. The application seeks to ignore the fact that as proposed the modified genes will certainly escape into the wider environment. This is not seen as an issue worthy of comment by Teagasc.

Objectives of the research proposed under the licence

The research objectives of the proposed research appear relatively modest, and the information outcomes could probably be anticipated from similar research already underway in continental Europe.

Invasive Species

A common misconception is that genetic modification of organisms is merely an accelerated version of evolution by natural selection, hastening a process that would happen naturally in the fullness of time. This is utterly incorrect. The insertion of genetic material from one species into another could never happen in nature. GM crops are totally novel plants created in the laboratory and that could not have evolved under natural conditions. They must therefore be considered an invasive species, there is general agreement that Ireland's natural environment must be protected. Considerable funding initiatives are being operated now to remove invasive animals and plants from Ireland. Allowing the GM potato into the open environment goes against all these principles.

Cisgenic

The Teagasc application refers to this as only cisgenic genetic engineering, this is not relevant, as the environmental concerns and constraints apply to both transgenic and cisgenic genetic engineering.

A temporary solution

The production of blight resistant potatoes does not grant indefinite resistance. It is inevitable that the blight producing fungus will evolve resistance in time. Thus the proposed project will in time result in a GM 'war' of escalating intensity as further genetic modification becomes necessary to deal with new fungus strains resistant to the present crop of GM potatoes.

Toxicity

The licence application by Teagasc states that .." no toxic or allergenic effects are expected on the basis of the improved resistance to *P. infestans* or the expressed AHAS protein. No effects on biogeochemical processes are expected, other than those that apply also to conventional potatoes".

It is noted however that the Second Schedule Genetically Modified Organism(Deliberate Release) Regulations 2003,C.2(1) requires that any potential adverse effect is not discounted on the basis that it is unlikely to occur.

Summary

There are significant reasons why this licence application should not be granted. The consequences of releasing this GM plant in the open environment, even in a small test area, will result in a large number of negative consequences in to the future.

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Miriam Berry,
Apt 1, 23 Temple Lane Sth,
Temple Bar,
D. 2

Dr Gerry Boyle
Director,
Teagasc,
Teagasc HQ,
Oakpark,
Carlow

26th March 2012

Dear Dr Boyle,

I'm writing this letter to you in the context of Teagasc's recent application to the EPA for a licence to grow GM in trials at Oak Park. It's universally accepted that transgenic organisms can have unpredictable effects. This is the risk which underpins my concern regarding the recent

Teagasc licence application. Unfortunately, the GM regulatory system in place has not accommodated a full public discussion of the issues relevant to GM technology and its introduction to Ireland.

To put a solution forward, as Teagasc has done, when it appears the problem has not yet been properly defined, is highly questionable. Particularly, when that solution involving releasing a plant (by its very nature capable of reproducing itself and therefore 'uncontrollable' in nature) into a field, appears not to take the national interest into account. As such, such a solution is simply <u>indefensible</u>.

There are aspects other than farmers' current use of 'up to 2%' fungicide

Sprays per crop to be considered regarding potato cultivation in Ireland.

My request is this:

For Teagasc to explicitly state ALL the reasons it is doing the research at Oak Park described in its GPA licence application on GM potatoes.

I hope that when the information requested is in the public domain, there can then be a full public discussion about the issue and all of its implications.

Meanwhile, perhaps Teagasc would consider withdrawing its licence application so that the public discussion can take place without the immediate threat of a GM potato planting at Oak Park.

Yours sincerely, Mira Bero

Suzanne Barror
31 Chelsea Gardens
Clontarf
Dublin 3

Dr Gerry Boyle
Director
Teagasc
Teagasc HQ
Oakpark
Carlow

26 March 2012

Dear Dr Boyle

I'm writing this letter to you in the context of Teagasc's recent application to the EPA for a licence to grow GM potatoes in trials at Oak Park. I feel as a concerned citizen that I do not have enough information on what the ultimate effects of this testing will be.

It is universally accepted that transgenic organisms (this definition is inclusive of cisgenic organisms) can have unpredictable effects. This is the risk which underpins my concern regarding the recent Teagasc licence application. Unfortunately, the GM regulatory system in place has not accommodated a full public discussion of the issues relevant to GM technology and its introduction to Ireland.

To put a solution forward, as Teagasc has done, when it appears the problem has not yet been properly defined, is highly questionable. Particularly so, when that solution involving releasing a plant (by its very nature capable of reproducing itself and therefore 'uncontrollable' in nature) into a field, appears not to take the national interest into account. As such, such a solution is simply indefensible.

There are aspects other than farmers' current use of 'up to 20' fungicide sprays per crop to be considered regarding potato cultivation in Ireland.

My request is this: For Teagasc to explicitly state ALL the reasons it is doing the research at Oak Park described in its EPA licence application on GM potatoes.

I hope that when the information requested is in the public domain, there can then be a full public discussion about the issue and all of its implications.

Meanwhile, perhaps Teagasc would consider withdrawing its licence application so that the public discussion can take place without the immediate threat of a GM potato planting at Oak Park.

Yours sincerely

Suzanne Barror