



An Roinn Talmhaíochta,
Bia agus Mara
Department of Agriculture,
Food and the Marine

Pesticides and Drinking Water

Aidan Moody
20 June 2018

Environmental Protection Agency
National Water Event 2018



- What is the issue?
- Why is there an issue?
- How big is the problem?
- Work of NPDWAG
- Examples of advice and best practice information
- Sustainable Use Directive



Multiple exceedances of legal limit for **MCPA in drinking water sources**



Drinking water standard for individual pesticides = 0.1 microgram/L



One foil seal contains enough pesticide to breach 0.1 microgram/L level along **30 km** of a typical stream

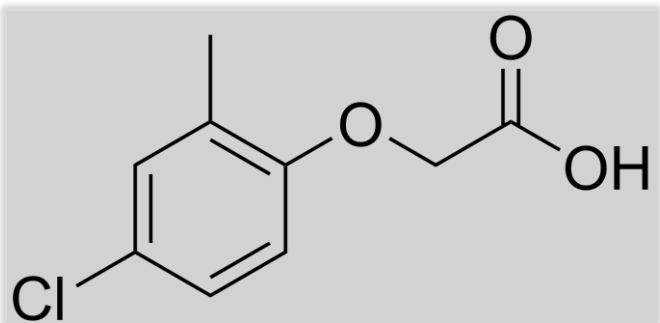


- 0.1 microgram/L = 0.1 ppb (1 part in 10 billion)
- Equivalent to one drop in an Olympic-sized swimming pool
- Not a health-based standard



Substances most likely to be detected are high-use, water-soluble and relatively persistent in water.

(4-chloro-2-methylphenoxy)acetic acid (MCPA)

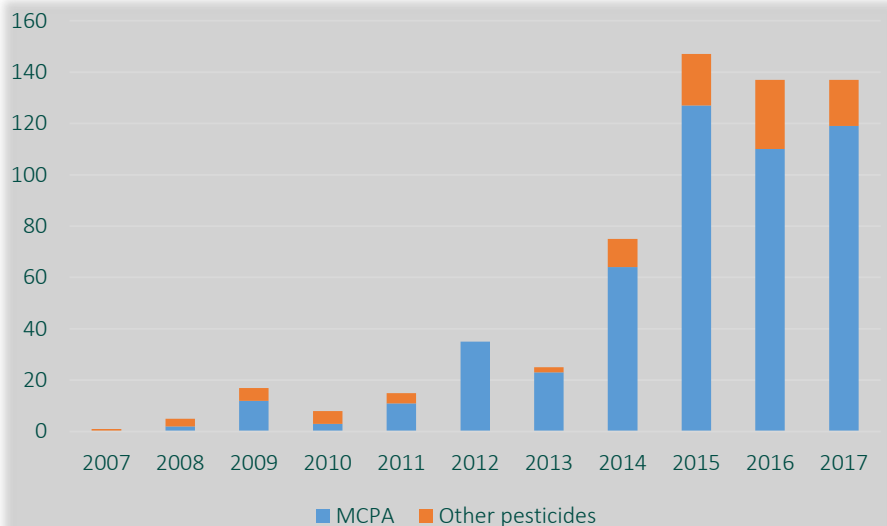


- Highly soluble in water (29390 mg/L at pH 7 and 25°C).
- Does not adsorb strongly to sediment or suspended matter.
- Half-life in aquatic systems: approximately 20 days.

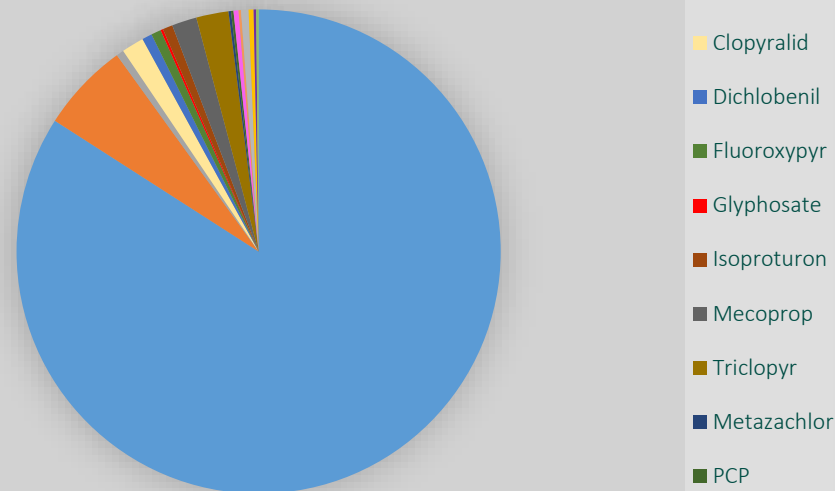
Drinking water exceedances



MCPA accounts for over 80% of exceedances

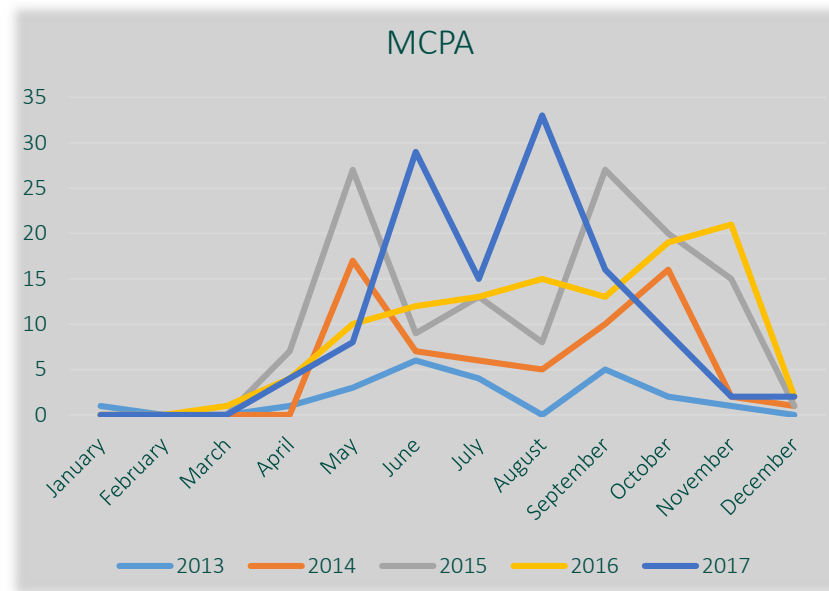
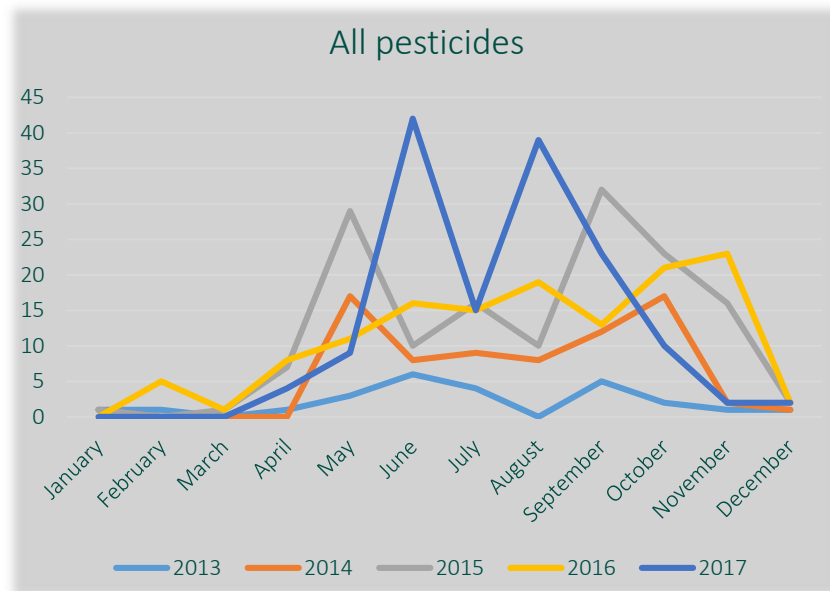


Total no. of exceedances 2007-2017
breakdown by individual pesticide

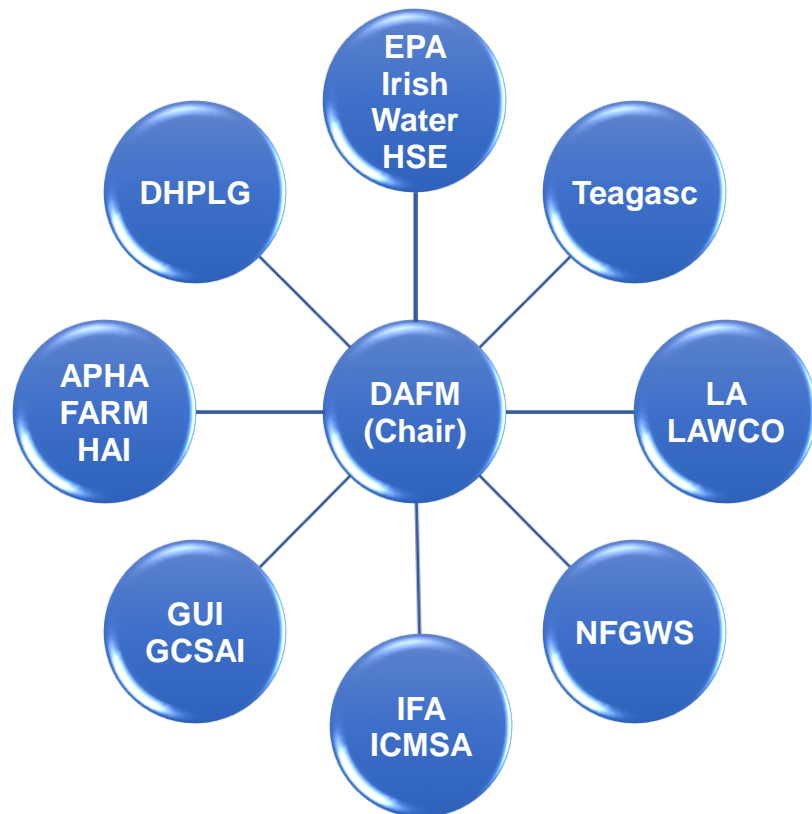




Pesticide exceedances – seasonal variations



National Pesticides and Drinking Water Action Group

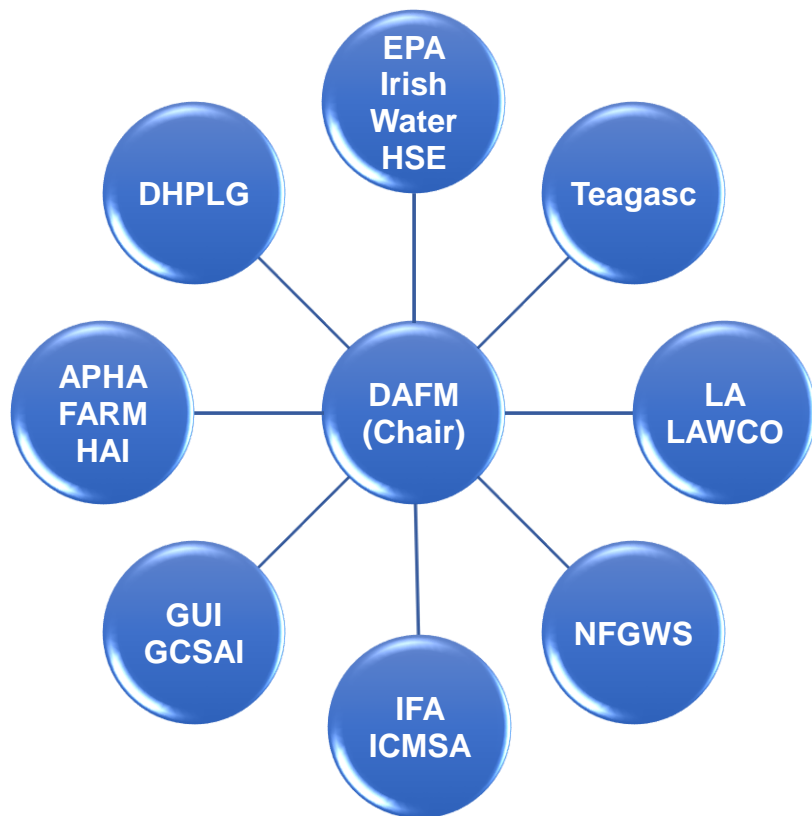


Purpose

Support the achievement of compliance with the Drinking Water Directive pesticide standards (0.1 µg/L, 0.5 µg/L).

Membership

Wide range of key stakeholders across different sectors
(Government departments and agencies, local authorities, industry representative bodies, farming organisations, water sector, amenity sector)



Aims



Enhance collaboration

Develop linkages

Raise awareness

Share information

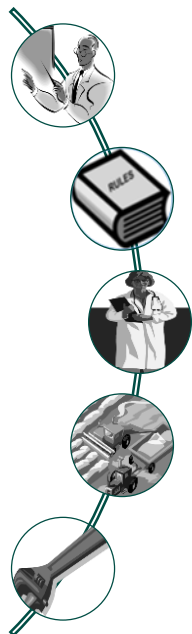
Identify policy/implementation gaps

Escalate issues

Track progress



The Five Rs



Raising awareness

Regulation

Research

Reducing inputs

Restructuring water supply network

Video on best practice for using MCPA for rush control



<https://youtu.be/xQqtZ7jifUs>

(Irish Water, Teagasc, DAFM)





Advice leaflets - Protecting Drinking Water from Pesticides

Protecting Drinking Water from Pesticides - Leaflet Series

Herbicide Use in Grassland (including MCPA).

Advice for Farmers and other Professional Users.

Advice for Gardeners and Household Users.

General awareness-raising poster.

www.epa.ie/water/dw/protectingdrinkingwatersupplies/

Focus on MCPA and rush control

BEWARE! Spraying rushes can very easily lead to breaches of the drinking water standard for pesticides, particularly if using MCPA products.

Why?

- MCPA is water soluble and takes several weeks to break down.
- Rushes thrive in poorly drained areas (with a water table near the surface) which are prone to runoff to nearby water bodies.

What to do?

- Use non-chemical control methods e.g. cutting, drainage, sward improvement.
- If spraying, target only the rush affected areas.
- If spraying, cut rushes one month before or one month after spraying to improve the effect of the spray.
- Consider weed wiping with an appropriate herbicide as a rush control option.

REMEMBER!

A **SINGLE** drop of pesticide lost to a water body such as a typical small stream (1 metres wide, 0.3 metres deep), for example, can be enough to breach the legal limit for pesticides in drinking water of 0.1 part per billion along 30 km of its length.

Always read and follow the product label.

Be aware of how near water bodies (ditches, streams, ponds, rivers, lakes, etc.), drains or wells are to where you are working.

Find out if the treatment area is in the vicinity of a drinking water abstraction point or well.

For further information on related topics such as container storage, triple rinsing, Integrated Pest Management or a list of approved Pesticide Advisors visit:

www.pcs.agriculture.gov.ie, www.teagasc.ie
or www.epa.ie

A **SINGLE** drop of herbicide can breach the drinking water limit in a small stream for 30 km



Protecting Drinking Water from Pesticides

Herbicide Use in Grassland

Promoting best practice in the use of pesticides to protect drinking water



Herbicides* and drinking water

Drinking water monitoring results for Ireland show that a number of herbicides commonly used on grassland, such as MCPA, are being detected more frequently in recent years. Careless storage, handling or use of pesticides can easily cause breaches of the legal limit for pesticides in drinking water.

It is essential to take great care and follow best practice procedures when using any pesticide and particularly so in the case of herbicides used on grassland.

How do herbicides get into drinking water?

Herbicides can enter water bodies from:

- **Point sources** (mainly in the farm or farmyard) – leaks from storage areas; spills or drips from handling operations such as mixing, filling and washing; or
- **Diffuse sources** (mainly in the field) – inputs arising during or after application from processes such as spray drift, runoff and drainage.

Weeds in Grassland

Low levels of weeds do not affect grass production and are beneficial to the environment.

A vigorously growing grass sward can out-compete weeds and prevent new weeds growing.

Don't underestimate basic grassland husbandry such as lime, fertiliser, topping or reseeding as weed control measures.

Spraying at the right time doubles the effect of the spray.

DOs when using herbicides:

- **DO** read the product label instructions carefully and plan the treatment in advance, taking care to ensure strict compliance with the specified conditions of use. Follow all health and safety instructions.
- **DO** inform yourself of the location of all nearby water bodies (ditches, streams, ponds, rivers, lakes and springs).
- **DO** find out if any groundwater body or surface water body in your locality is used as a drinking water source and, if so, the location of the nearest abstraction point. Ensure compliance with the safeguard (no-use) zones around drinking water abstraction points.
- **DO** ensure that pesticide products are stored in a secure, dry area which cannot result in accidental leaks or spills. Empty, triple-rinsed containers should be disposed of in accordance with the Good Practice Guide for Empty Pesticide Containers.
- **DO** ensure that application equipment is properly calibrated and in good working order.
- **DO** take every precaution during mixing and preparation to avoid spills and drips. Minimise water volumes (rain and washings) on the handling area.
- **DO** consider using drift-reducing nozzles if spraying. Keep the spray boom as low as possible to the ground and use the coarsest appropriate spray quality.
- **DO** clean and wash down the sprayer at the end of the day, preferably in the field and well away from water bodies or open drains. Tank washings should be sprayed onto the previously sprayed area, on a section far away from any water body, observing the maximum dose for that area.

* Herbicides are one of a number of pest control agents encompassed by the broad term 'pesticides'. The term also covers various other agents such as fungicides, insecticides, seed dressings and rodenticides.

DON'Ts when using herbicides:

- **DON'T** perform handling operations (filling, mixing or washing the sprayer) near water bodies, open drains or well heads. Maintain a distance of at least 10 metres and preferably 50 metres, where possible.
- **DON'T** fill the sprayer directly from a water body.
- **DON'T** spray if the grass is wet or if heavy rain is forecast within 48 hours after application. **DON'T** spray during windy conditions.
- **DON'T** spray near open drains, wells or springs.
- **DON'T** spray on waterlogged or poorly draining soils that slope steeply towards a water body, drain, well or on any other vulnerable area that leads directly to water.
- **DON'T** discard sprayer washings down a drain or onto an area from which they can readily enter a water body.



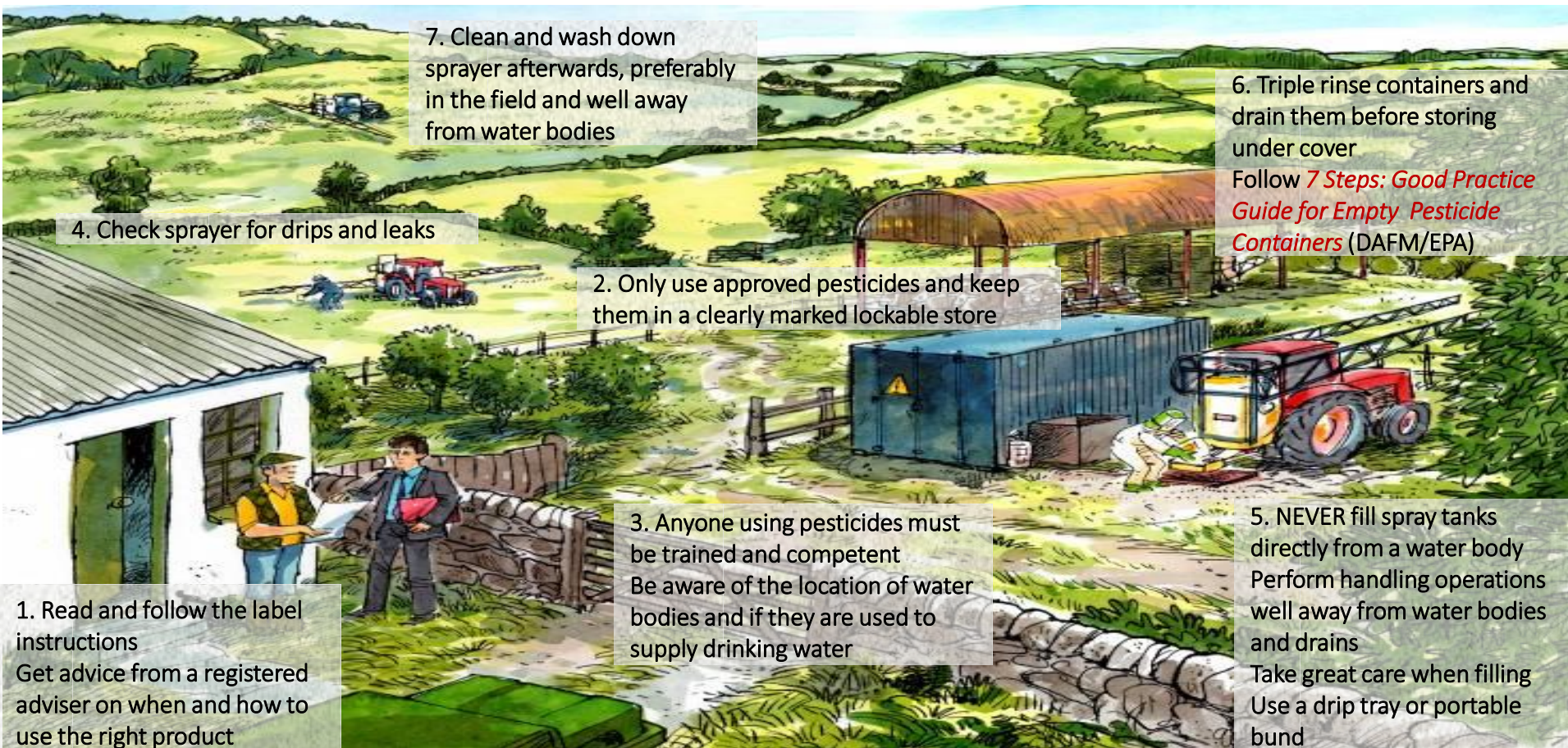
! Safeguard Zones !

Statutory 'no-use' zones (called safeguard zones) apply around drinking water abstraction points, ranging from 5 metres to 200 metres depending on the size of the supply. Your Local Authority or The National Federation of Group Water Schemes can advise on this.



Some key points

- Choose the right pesticide product.
- **Read and follow the product label.**
- Determine the right amount to purchase and use.
- Don't spray if rain or strong wind is forecast in the next 48 hours.
- **Make sure you are aware of the location of all nearby water courses.**
- Comply with any buffer zone specified on the product label to protect the aquatic environment. Mark out the specified buffer zone from the edge of the river or lake or other water course.
- **Never fill a sprayer directly from a water course or carry out mixing, loading or other handling operations beside a water course.**
- Avoid spills, stay well back from open drains and rinse empty containers 3 times into the sprayer.
- Store and dispose of pesticides and their containers properly.





Draft updated National Action Plan
(May 2018)

[\(http://www.pcs.agriculture.gov.ie/sud/reviewofnationalactionplanforthesustainableuseofpesticides-2018/\)](http://www.pcs.agriculture.gov.ie/sud/reviewofnationalactionplanforthesustainableuseofpesticides-2018/)

Information on protection of water –
pp.19-20



Stakeholders need to work together in partnership

Pesticide users must follow best practice measures

It's in your hands now



www.pcs.agriculture.gov.ie