

EPA Green Enterprise

Project: Bioscope - looking at global markets for potential new food products from Irish fruit & vegetables.

CyberColloids Ltd. • Reference: 2019-ET-CP-96

Amount Of Grant Aid Awarded: €46,637



Project Objective: evaluate waste streams from the Irish fruit and vegetable sector for potential new food ingredients.

Background:

CyberColloids Ltd. observed a shift in global markets for food texture ingredients, with a move to more holistic, less processed products. The R&D company set about examining waste streams from the Irish fruit and vegetable sector for potential new texture ingredients.

- Fibre ingredients are just one of the new products emerging globally from fruit & veg wastes.
- *What are fibre ingredients?* Fibres from natural sources that are used to add nutritional value to foods and provide texture functions like thickening and gelling.
- There is a global market already for these products and it is forecast to significantly rise.

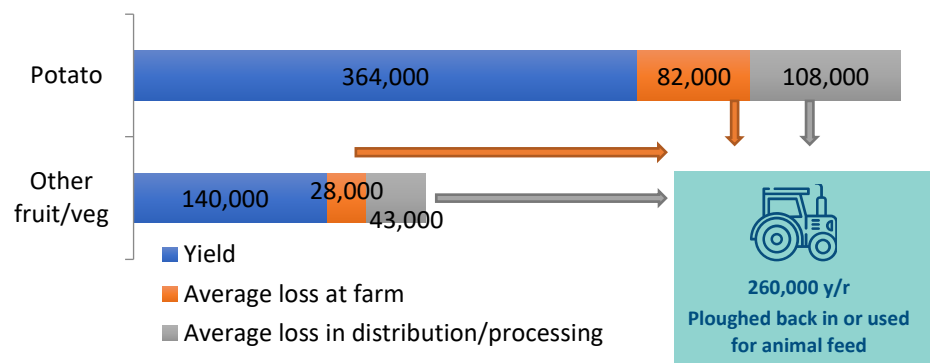
THE CURRENT GLOBAL MARKET FOR FIBRE INGREDIENTS IS \$5 TO \$7 BILLION; 35% IS FROM FRUIT & VEG



Project activities:

As well as successfully producing several new food ingredient products on a lab scale, the project also quantified the losses for the key fruit & veg crops in Ireland, at farm level and in distribution and processing.

14 key Irish crops TPY (tonnes per year)



THE CIRCULAR ECONOMY PROGRAMME
The Driving Force for Ireland's Move to a Circular Economy



Rialtas na hÉireann
Government of Ireland





Carrot gel from carrot peel



Swede gel from whole swede

Project outcomes: The BioScope project has found significant potential for new food ingredient products from a variety of Irish fruit & veg ‘out-grades’, and processing waste, like peelings. These ingredients have been successfully trialled in food products such as baked goods, meat products and mayonnaise. Examples of just some of the waste streams looked at out of a broad range of materials examined, and some of the potential products identified, include:

Examples of waste streams	Examples of potential products identified	Value
Potato	Potato protein and fibres with good water binding properties	Potato protein is a high value ingredient used for texture and nutrition and ties in with moves to plant-based proteins; higher market value than other plant derived proteins (>€15/kg)
Carrots	Fibres with potential to give water binding and gelling functionality	Growing global market demand for new & different fibres with different functionalities
Swedes & apple pulp		

THERE IS POTENTIAL TO TAKE LOW VALUE WASTE STREAMS AND MAKE HIGH END, VALUABLE FOOD INGREDIENTS FOR A GLOBAL MARKET.

THE KNOW-HOW EXISTS WITHIN IRELAND TO PRODUCE NEW FOOD FIBRE INGREDIENTS

Next steps needed: Collaborative work across the fruit & veg value chain to examine these potential products on a pilot scale with a long term view to a processing facility or a biorefinery.

For more on the EPA’s Green Enterprise programme visit [here](#)

For outputs see: www.cybercolloids.net or contact: mariel@cybercolloids.net

