

Corporate Innovation Challenge Template

Challenge Name: Exploring alternatives to chemical pesticides (bio or other).

Code Name: BIOECONOMYVENTURES-2022-OC1-GI-01

Challenge Domain:

- Agriculture

Description of the Corporate innovation Challenge

Chemical pesticides are chemicals used for controlling organisms considered pests such as weeds and insects. Chemical pesticides can also cause harm to people, other plants/animals, and the environment. They can also biomagnify in ecosystem food chains to become more concentrated.

There is need for alternatives to chemical pesticides such as biopesticides which are less toxic, affect only the target pest and can decompose easily. For this reason, Glanbia is looking to explore new bio-based fertilizer and pesticides/insecticide options.

Biopesticides are pesticides derived from organisms such as animals, plants, bacteria. These pesticides are environmentally friendly alternatives to insecticides, herbicides, and fungicides. They are used as part of integrated pest management strategies on farms to reduce chemical use in crop production. They are most commonly used in glasshouses but are increasingly being used in field settings. Biopesticides fall into three classes:

- Biochemical Pesticides,
- Microbial Pesticides and
- Plant Incorporated Protectants (PIP).

Biochemical pesticides are naturally occurring substances that control pests by nontoxic methods such as interfering with mating. Microbial pesticides contain microorganisms which have a different effect on the pest depending on microorganisms used, with the most common being from *Bacillus thuringiensis* (Bt). Plant Incorporated Protectants (PIP) are plants that are genetically modified to incorporate a gene from a microorganism, such as a Bt gene from *Bacillus thuringiensis*. This gene enables the plant to express a protein that has insecticidal action.

This challenge is driven by the Farm to Fork Strategy aspect:

- *50% reduction of the use and risk of chemical pesticides and 50% reduction of the use of more hazardous pesticides*

This project has received funding from the Bio-based Industries Joint Undertaking (JU) under the European Union's Horizon 2020 research and innovation programme under grant agreement No 101023260. The JU receives support from the European Union's Horizon 2020 research and innovation programme and the Bio-based Industries Consortium

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- *At least 50% reduction of nutrient losses by while ensuring no deterioration in soil fertility, reducing the use of fertilizers by at least 20%*

Expected results

- *Ability to promote sustainability credentials with our customers per Farm to Fork goals. e.g., sustainably sourced milk and grain, grass-fed milk claims, carbon footprint farm to finished product.*
- *Be able to show proof points (authenticate that real change has occurred on the ground) can be shown to the customer and potential to the consumer.*
- *Ability to engage with a packaging supplier on robust bio-alternatives to e.g., non-recycled packaging.*

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Types of Collaboration

1. *Pilot running and product testing*
2. *R&D opportunity*
3. *Knowledge sharing and Tech Transfer*

Company Information

Company Name:	Glanbia	Ireland	https://www.origingreen.ie/who-is-involved/manufacturers/dairy/glanbia-ireland/
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Company information

- Company Name & Location- See attached <https://www.glanbiaireland.com/our-company/our-locations>
- Company Vision, Mission & Growth <https://www.glanbiaireland.com/our-story/our-mission-vision-and-values>
- Industry Focus & Market Size- Dairy ingredients, RTE dairy products e.g., cheese, butter, soup, RTE oat and milk-based drinks, petfood (dry), animal compound feed.
- Company Services/Products- <https://www.glanbiaireland.com/our-brands>
- Previous Innovation Collaborations- Science Foundation Ireland, Horizon Europe, DPTC, Universities/IT
- Contact Details- Joe Tierney +353(0)860472973 jtierney@glanbia.ie

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