Corporate Innovation Challenge Template

Challenge Name: Maintenance of soil fertility to ensure microbiome is healthy in the soil.
Code Name: BIOECONOMYVENTURES-2022-OC1-GI-02
Challenge Domain: • **Agriculture** • **Ag Tech and Food Tech**
Description of the Corporate innovation Challenge
Soils contain plant nutrients such as nitrogen (N), phosphorus (P) and potassium (K) which are often found in low amounts. For this reason, chemical fertilisers are added to soils to increase the level of plant nutrients available, but this is inefficient for a number of reasons and can also cause ecological damage. **Glanbia is looking to innovative means of ensuring soil health and biodiversity e.g., biological diversity (microbes and macro in the soil).** Soils contain an extremely rich community of microorganisms, with a 1g of soil containing approximately 10^{12} bacteria[1]. Microorganisms are responsible for mediating 80 to 90% of biochemical processes in soil and have important roles in antibiotic production, carbon sequestration, biodegradation of xenobiotics and nutrient recycling[2]. One of the ways microorganisms can affect nutrient cycling is through increasing the bioavailability of plant nutrients. For example, Phosphorus Solubilising Microorganisms can be directly involved in solubilising P through production of organic acids and/or enzymes which solubilise the phosphorus making it available for plants. 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* • *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

[1] https://www.science.org/doi/10.1126/science.1097394
[2] https://www.nature.com/articles/nrmicro.2017.87

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- *Ability to promote sustainability credentials with our customers per Farm to Fork goals.*
- *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.*
- *To create means of tracking what is best practice related to quantifying soil health and also confirming biodiversity credentials (not fully established). The SME needs to provide support in understanding soil health and microbiome aspects of soil as well as what elements of biodiversity should we be promoting and tracking.*

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/ (includes logo)

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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