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BRASSICA

LIFTING FEEDING INSECTS PRESSURE by Raising in-Plant Metabolism Naturally using Bio-Enzymes

Non-GMO, Non-Chemical, Non-Pesticides

A Cellular Regeneration Biotech with HQ in Singapore

Official Website: www.ibiostim.com

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"CROP PROTECTION" DONE DIFFERENTLY

Editor Dr. Jeff Lim
Fieldwork by ChongMing

MARKET SIZE AND HUMAN DIET

The European Union has a vibrant market for brassica (broccoli and cauliflower), at over 1 million metric tonne in 2023 with top 3 producing memberstates led by Spain, followed by Italy and France respectively, contributing towards the 3.8 million hectares farmland under cultivation (2021).

Brassica are highly nutritious vegetables and play crucial roles in a balanced human diet. Nutritional parameters comprised vitamins, minerals, anti-oxidants, fibre and phytochemicals, improving digestion and supports heart health when consumed on a regular basis. For both adults and teenagers, weekly recommended intake is equal to 2-3 portions brassica (approximately 80g per portion). For this reason, brassica represents staple vegetables in a balanced European diet.

iBioStim™'s LANDSCAPE

Fieldwork by ChongMing

CROPS PROTECTION OF MODERN AG

Harvest security represents prime goal of any commercial brassica farm, comprised i) Disease Control, ii) Pest Management, iii) Regulation & Authorisation and iv) EU pesticides Database. Increasingly, there are compelling evidence to reduce synthetic chemical imputs, due to rising incidents of diseases in the population, extending beyond the knowledge and capabilities of current scientific know-how, due to bioaccumulation.

In view of the urgent need to continue support for food security while reducing exposure, iBioStim™ was borned by utilizing the principle of natural plant metabolism for early lifting, with significantly reduced synthetic chemical inputs, at 1.3 times higher nutrient density.

Plants need water, CO2, nutrients and sunlight to produce food through photosynthesis. Brassica is a C3 plant, with a harvest cycle of 10-16 weeks depending on varieties and geography. The trick then lies in speeding up the biochemical conversion of fertilisers by lowering the activation energy step **[METHOD 1]**. To this end, we apply a proprietary recipe of fermentation derived bio-enzymes with the right ratio of various micronutrients and amino acids on a weekly regime for a total of 10 weeks, by soil and foliar applications, with organic farming as baseline (completely agrochemicals free).

Unlike existing commercial products on the market, iBioStim™ is designed to be customizable by bio-enzyme proportion, to meet plant metabolism needs for various C3, C4 and CAM plants. This is to say, we are not available off the shelf.

	Poor	Marginal	Good	Best	iBioStim
Cabbage	6	8	10	12	>13
Broccoli	6	8	10	12	>13
Cauliflower	4	6	8	10	>13

The key to influencing feeding insects behaviour lies in raising the complex carbohydrates content in the plant, by applying **[METHOD 1]**, as opposed to reducing sugars such as glucose that attracts them.

RESULTS

In a single application, 7 days later, one week old treated brassica grew to two week control brassica dimensions. By harvest, in-plant sugar content is increased from 8.5% to 13.2%, with no evidence for feeding insects infection at the commercial farm.

COSTING

For a 50-ha brassica farm in Germany with two planting per annum, this is equal to an annual revenue of between €2.03M to €2.7M, against a baseline of €1.35M, significantly uplifting income bracket, before deductions for iBioStim™ costs, which is between 1 to 2% of the total revenue per annum.

SUMMARY

A new commercial solution **[METHOD 1]** becomes available for global shipping with immediate effect, with ZERO agrochemicals inputs, thereby matching back to the objective for sustainable farming.