



“Field-testing and demonstration of Digital and Space based technologies with Agro-ecological and Organic practices in systemic innovation”

The usage of biostimulants on open-field vegetable crops



biostimulant; hydroponic; stress; yield

Spain

Among its goals of demonstrating agroecological practices, PestNu focuses on the implementation of organic fertilisation plans by Fertinagro, using organic fertilisers and biostimulants, for better use of soil nutrients.

Nutritional programs priorities:

- Edaphic regeneration
- Rhizosphere nutrition
- Metabolic potentiation of the plant

NUTRITIONAL PROGRAM FERTINAGRO

PRODUCT (Kg/ha)	IN	Ground				Rooting and plant development				Plant development				HARVEST	
		Time 0	W42	W43	W44	W45	W46	W45	W46	W47	W48	W49	W50	RECOLEC.	
Efisol Renovacion					5					2,5					
Aminovit Vigorion Azon								2						2	
Efisol Aminoshoot ECO				12,5							12,5				
Biogel Ferrum															
Microquel Amin Copper			5												
Efisol Superbia AzoN					2					2					
Superblackpot														4	

Ecological nutritional program carried out by Fertinagro for CDTA in PestNu

The aim is to support supporting higher-quality organic crops with yields equal to or higher than conventional fertilisation, improving soil quality. Although it may be more expensive than traditional fertilization, soil regeneration and care lead to a more balanced production. It is also an effective and sustainable tool in hydroponics and aquaponics systems.

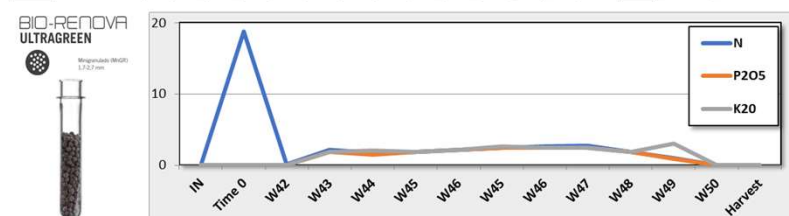
In PestNu, a nutritional program is being applied to tomato, cucumber and lettuce crops in open field, aquaponics and hydroponics. Open field trials conducted in Spain (CDTA) with tomato and lettuce plants resulted in similar yields compared to their conventional counterparts. Fertinagro's biofertiliser helped increase commercial yield (within ideal weight). However, root toxicity was recorded in a trial performed in an aquaponic system (Tilamur, Spain) after mixing two biostimulants. New trials are underway using the biostimulants separately.

Promising results were obtained in aquaponic and hydroponic trials (University of Thessaly, Greece) when foliar spraying two liquid biostimulants on lettuce and tomato crops. In the case of lettuce, both products increased yield compared to plants standardly fertilised. Both biostimulants resulted in higher leaf Ca²⁺ content in lettuce tissue. Similar results were also found in tomato crops. Tomato yield, calcium, and nitrogen uptake were significantly enhanced.

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ICEBERG		FERTINAGRO BIOTECH		Biofuerza		TOTAL (kg/ha)								
Area:	IN	Ground	Rooting and plant development				Plant development				HARVEST			
		Time 0	Week 42	Week 43	Week 44	Week 45	Week 46	Week 47	Week 48	Week 49	Week 50	Harvest		
6-6-3	Orginla Biofuerza 461													
3-3-6	Biofuerza Ultragreen													
6-2-3	Biofuerza Líquido Growth		60	50	60	70	80	80	80	60	30			
3-3-3	Biofuerza Líquido Stability													
6,8-0-0	O. Revitasoil Azofit	2500												
UF Contributed														
N	0	19	0	2	2	2	2	2	3	3	2	1	0	0
P205	0	0	0	2	2	2	2	2	2	2	1	0	0	0
K20	0	0	0	2	2	2	2	3	2	2	3	0	0	0
TOTAL (Fertilizer Units/ha/year)														
	37	N												
	0	P205												
	25	K20												



Example of a nutritional program used in PestNu: (Week 42: 9-15 October)

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