



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

Manufacture and use of an ecological biopesticide against fungal diseases in vegetables



Sustainability; fungal disease; biofungicide; broad spectrum; circular economy

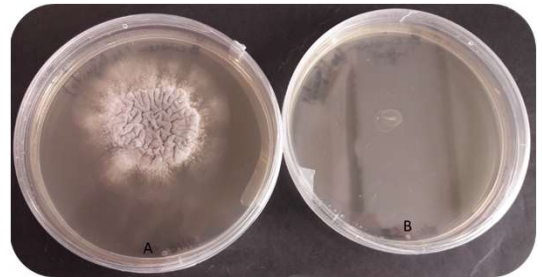
Spain

The PestNu project targets agroecological and organic practices to reduce pesticide use, following EU strategies and increasingly restrictive regulations regarding the use of conventional products. Fertinagro designed a biofungicide with fungistatic capacity against the foliar phytopathogenic fungus *Botrytis cinerea* providing also a biostimulant effect. Moreover, this product is effective against mildew infections. The biopesticide was designed based on a circular economy approach, using by-products such as agricultural and food waste as raw materials. It is composed of:

- Potassium carbonate
- Surfactant
- Humectant
- Vegetable extracts
- Water



PestNu & Fertinagro's biopesticide



A: *Botrytis cinerea* growing on Saboraud agar (5 days after inoculation); B: *Botrytis cinerea* has not been able to grow on Saboraud + PestNu biofungicide agar. (5 days after inoculation)

Its final market price would be approximately 15€/ 500cc.

Within PestNu field trials, two tests were carried out (CDTA, Murcia, Spain), one in June 2022 using a pepper crop, and one from December to January 2023 using lettuce plants. However, no fungal infections appeared in the first trial. The fungicide-treated lettuce plants showed traces of chemicals on the leaves, while the PestNu plants (biopesticide) were free of contaminants.

Regarding the fungal attack in the first lettuce crop, 20% of the lettuce analysed presented severe damage by fungi (mildew) when using a conventional pesticide, while only 5% of lettuce suffered from severe damage when using PestNu biopesticide. In the second lettuce crop, after a conventional fungicide treatment, 13.5% of analysed lettuce was severely damaged, compared to 19% damage found for PestNu-treated plants, while the % of partially damaged lettuce was very similar in both treatments. Taking into account that we are comparing the effect of the biofungicide PestNu with chemical pesticides, the results are promising.



Pablo Quirós (FERTINAGRO)



Pablo Quirós (pablo.quirós@tervalis.com)



Lettuce crop in CDTA

Practice abstract n.10



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