PestNu

"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

PestNu targets agro-ecological and organic practices (AOP) in a systemic approach to reduce pesticide and fertiliser use and nutrient loss. For this reason, the effect of biostimulants on plant growth and yield has been assessed in an open-field farm in Murcia, where different formulations have been tested on lettuce, tomato and pepper crops. In addition, the PestNu project will demonstrate the use of biopesticides focused on fungal diseases under organic farming conditions, combining these products with the aforementioned biostimulant and a biofertiliser developed within PestNu.

The biostimulants under testing are produced using a biotechnological process converting microalgae biomass grown with drainage solutions from hydroponic greenhouses into a sustainable and effective product.

The use of AOPs such as biostimulants can help growers achieve higher yields by providing them with a product that acts as a booster to the fertiliser already applied to their crops. Biostimulants have a high concentration of free amino acids from the high protein content of the microalgae biomass, which are biostimulants at certain stages of plant growth (as well as phytohormones, trace elements, vitamins, etc.) and can improve their stress tolerance.

In a field test (CDTA, Murcia) with lettuce plants, the combination of biostimulant + fertiliser led to a similar yield to a conventional test and slightly increased it compared to a test done with the fertiliser itself (about 7%). These lettuce presented a lighter and more ideal average weight (450-650 g), than the conventional ones, which were heavier and far from the commercial calibres. This is a step forward considering some of the project's goals (30% more production than a conventional test).

PestNu field trials with lettuce plants in CDTA, Murcia, Spain

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