EIP-AGRI practice abstract

Short title:

Microalgae based biofertilisers from wastewater by heterotrophic microalgae process

Summary:

Algal biomass as a new bio-fertiliser contains macronutrients and micronutrients, some growth regulators, polyamines, natural enzymes carbohydrates, proteins and vitamins implemented for improving vegetative growth and yield. It can improve soil characteristics that have favourable effect on nutritional status of plants. Microalgal fertilisers improve the fruit quality through an increase in sugar and carotenoid content. Some studies had demonstrated that the performance of algal materials was similar to that of a conventional synthetic fertiliser or even higher.

Wastewater-grown algal materials effectively provide plant nutrients to crops and can be used successfully as fertilisers. As a biologically based (bio based) alternative, algae fertilisers could supplant some of the dependency on conventional fertilisers, reducing the need for their costly production, including principally the nitrogen fixing, phosphate solubilising and plant growth-promoting microorganisms.

An average composition for microalgae is 40-60% proteins, 10-30% lipids and 20-40% carbohydrates. This composition makes it adequate as raw material for the production of feed products and fertiliser. They allow for the recovery of the N and P present in wastewaters by concentrating these nutrients in algal biomass and have the potential to prevent nutrient losses through a gradual release of N, P and K.

For good practice or organic agriculture, the product can be applied overall in cereals for production of grain and fresh vegetables.

For more information: https://nutriman.net/farmer-platform/product/id_255

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