

Valorization of Wastes of Organic Food Industries for the Amendment of Agricultural Crops

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Waste of agri-food industries is very varied and varies according to the seasons. They are mainly composed of organic waste generated by the processing activities of plant and animal products. This waste has a negative impact on the environment; nevertheless, his transformation, especially through the biological process of biotransformation, can generate a new economic source by creating a stable and balanced product that can be used as fertilizer because of its content of basic elements: nitrogen, potassium and phosphorus.

This work presents the results of a valorization test of certain waste of agro-food industry, three different wastes were combined: Fish waste, molasses and peels of potato. Several balanced mixtures were developed and underwent natural biotransformation for 2 weeks to produce a fertilizer of good nutritional and microbiological quality.

Quality control parameters (pH, temperature, conductivity, dry matter, phosphorus, nitrogen, total carbon ...) were monitored during the time stipulated for biotransformation.

The results show that the fertilizer generated from the mentioned waste is mature from the 8th day, it has a good hygienic quality, due to the absence of the spoilage microorganisms, rich in nitrogen, phosphorus, potassium, carbon and characterized by a stable optimal pH. Application tests on a barley crop confirmed its effect. Mathematical modeling, in the form of a ternary diagram, of the quality of the final product according to the composition of the initial mixture is established to build in practice a predictive operational model for industrial waste management.