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## Innovative technology to obtain vegetal biostimulants by biodegradation of agricultural postharvest waste and medicinal plant extracts

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The paper presents researches about construction of automated biodegradation platform for agricultural waste to obtain vegetal biostimulants and biofertilizers in two weeks. We have obtained two finished products: a liquid biostimulant for foliar application and a solid organic substrate for hydroponics or soil application to increase the fertility. The flow to obtain these products consists in the following steps: weighing and loading vegetal waste on the conveyor belt; chopping waste and loading in biodegradation platform by a cyclone; mixing the chopped crop residues with bioinoculum of lignolitical micro-organisms; homogenization and monitoring indices of aerobic biodegradation for 7 days; adding hot water and mixing to stop the aerobic biodegradation for 7 days, addition of herbal extracts with antibacterial and fungicidal effects; separating the liquid from the solid part by pressing of compost with their quality control; packaging and labeling organical substrate in bags; bottling and labeling the vegetal biostimulant; distribution. The higher content of nitrogen, potassium, and magnesium was recorded at the biostimulant obtained from sunflower waste, while the rich content of the phosphorus and sulfur was recorded at biostimulant obtained from wheat and barley waste. Variant obtained from mixed waste (sunflower, wheat, barley, corn) has the best balanced mineral content and it was tested in fields by the application of treatments with different doses, on agricultural crops (wheat, barley, rape, sunflower, corn and soybean) and on horticultural crops (apple, cherry, apricot, plum, raspberry), to determine the optimal dosages and their influence on the quality of agricultural and horticultural products.

#### Biography

Daniela Trifan has her expertise in agricultural and horticultural crops, and her passion is to improve the quality of crops by using the natural resources. She has completed her PhD in Plant Breeding, and was a Teacher in Agricultural Faculty. Currently, she is Research Scientist and Consultant for the farmers in an agricultural association with over 50 members. She was member in four national research projects and from 2016 she is Director of the research project presented in this paper. She has published more than 60 papers in reputed journals and reviewer and Editorial Board Member of more than 5 international jurnals.

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