

3RD GLOBAL FOOD SECURITY, FOOD SAFETY & SUSTAINABILITY CONFERENCE

May 21-22, 2018 | New York, USA

Researches on the use of post-harvest agricultural waste to obtain plant bio stimulators and bio fertilizers

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Agricultural wastes left after harvesting the crops represent a very rich source of nutrients that can be biodegraded using microorganisms for obtaining bio fertilizers and by adding extracts of medicinal plants to obtain bio stimulators for plants. At the end of the biodegradation process of agricultural waste, we obtained two biological products: a liquid bio stimulator, which is applied on foliage of the agricultural and horticultural crops or like seeds treatment and a solid bio fertilizer, which can be used in vegetation vessels in greenhouse or directly on the soil, to increase fertility by enriching it with organic matter and nutrients. This paper presents the results of research that have been tested bio stimulator plant for six agricultural crops, three winter species (wheat, barley, rape) and three spring species (maize, sunflower and soya), and five horticultural crops (apricot, plum, raspberry, apple, cherry) and also it was tested like seeds treatment. The solid organic substrate was tested in greenhouse vessels of vegetation, on the same crops in different doses, mixed with soil, to observe the influence on plant growth. The experimental results showed highly significant positive correlation between the dose applied and the results of biometric and productivity elements. The most effective doses recommended for bio stimulators are 2l/ha for agricultural crops and 4l/ha for horticultural crops in the two treatments. For the seeds treatment, the recommended dose is 1 liter/tonne in 6-7l water. This bio stimulator can be applied together with other fungicide or insecticide treatments, while not enhancing their effect. Solid bio fertilizer is recommended for vessels vegetation mixed with soil on report of 1:1.5, but can be used single as such for hydroponics in organic substrate, or for increasing fertility of salted soils.

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 has worked as a teacher in Agricultural Faculty. Currently, she is Research Scientist and Consultant for the farmers in an agricultural association with over 55 members. She was a member in five national research projects. From 2016, she is Director of the research project presented in this paper. She has published more than 65 papers in reputed journals. She is a Reviewer and Editorial Board Member of more than 5 international journals.

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