RECOVERY OF AGRO-INDUSTRIAL RESIDUES BY FERTILIZING A LETTUCE CROP

Gabriel-Ciprian Teliban[1], ORCID: 0000-0002-9221-9012
Gabriela Mihalache[1], ORCID: 0000-0003-4199-0306
Vasile Stoleru[1], ORCID: 0000-0003-0485-0312
Lorena-Diana Popa[2], ORCID: 0000-0001-8943-8268
Antoanela Patraş[1]*, ORCID: 0000-0002-4054-4884

[1] *"Ion Ionescu de la Brad" Iasi University of Life Sciences, 3 Mihail Sadoveanu Alley, Iasi, Romania*
[2] *Agricultural Research and Development Station Secuieni, 377 Principală Street, Neamt, Romania*
*Email: apatras@uaiasi.ro

The use of organic waste in agriculture through their prior composting represents a valuable option for managing the large quantities of waste generated by the agro-industrial processing of vegetables. In this context, the purpose of this paper is to evaluate the effect of applying different types of compost, obtained from organic vegetable waste resulting from the industrial processing of different vegetable species, on lettuce crop.

The experiments carried out in the period 2020-2021, at the University for Life Sciences "Ion Ionescu de la Brad" from Iași, V. Adamachi farm, were of bifactorial type, the two factors studied being represented by the Type of compost, respectively the species from which the vegetables wastes were taken for composting (carrot, red beet, onion, cabbage, peppers and eggplants fruits), and by the Amount of compost, respectively the proportion used to prepare the nutrient mixture in which the lettuce seedling was transplanted: 15% compost + 85% peat and 30% compost + 70% peat. The production results of the experimental variants fertilized with compost were compared with a control variant in which the substrate used for seedling production consisted only of peat.

The use of compost in the substrate preparation determined the production increase, the best results, with significant differences compared to the control, being registered in the variants where we used compost obtained from red beet waste (243.33 g / lettuce). The amount of compost used determined production increases with significant differences compared to the non-fertilized variant, respectively 61.5% for the variant with 30% compost and 53.1% for the variant with 15% compost. Within the combination of the two experimental factors, the best production was obtained by the variant fertilized with red beet compost in a proportion of 30%. By using the compost for substrate preparation, production increases were registered at all variants, smaller or larger, with significant differences compared to the non-fertilized variant.

The use of industrial agri-food waste (from fruits and vegetables) by composting can be an alternative to organic fertilization of vegetable crops.

Keywords: *agro-industrial vegetables waste, smart valorization, compost, yield, lettuce crop*

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