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INVESTIGATION OF THE EFFECTS OF ZEOLITE IN ASSOCIATION WITH ORGANIC COMPOST ON MORPHOLOGICAL ASPECTS AND NUTRIENT ABSORPTION IN MAIZE

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Abstract

The composting process can be a viable alternative for transforming agricultural waste into a more stable form and providing nutrients to plants. During this process, N and K losses may occur, reducing their ability to meet the nutritional needs of plants. This study has the hypothesis that the use of zeolites minimizes the losses of nitrogen during composting, so that its content is sufficient to meet the nutritional demand of plants. That, the objective of this study was to evaluate changes in the phytometric and nutritional characteristics of the plant after the use of an organic swine manure compound associated with zeolite. The experimental design consisted of the combination of proportions of compost with zeolites: 0 (100% compost); 20% (20% zeolite + 80% compound); 40% (40% zeolite and 60% of compost); 60 (60% zeolite + 40% compound) and 80% (80% zeolite and 20% compound). After 60 days of sowing, shoot height, stem diameter and number of leaves were evaluated, in addition to the nutrient contents in the plant tissue. A dose of 47.70% boosted the accumulation of dry mass (13.19 g/pot). The contents of N, P and K positively correlated with the higher participation of zeolite. The doses of 49.56% and 40.56% of the compound provided the highest concentration of Ca and Mg in the leaf tissue, respectively. The addition of zeolite is a promising practice in improving the quality of organic compost and, consequently, plant productivity.

Key words: animals manure, industrial waste, organic matter, *Zea mays* var. everta

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