

EVALUATION OF THE EFFECT OF MICROBIAL MIXTURES IN COMPOST MAKING

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Air dried grass clippings, leaves, coir dust, saw-dust and cow dung used as organic raw materials were treated with different microbial mixtures; a solution of Efficient microorganisms (EM) (T-1), a mixture of Bacteria in powder form (T-2). The control had only natural microorganisms (T-0). These treatment units were arranged in randomized block design in an in-door environment. Composting period was eight weeks. Piles were turned weekly and samples were taken for analysis. Process was monitored by measuring the temperature, pH, carbon dioxide evolution rate, C/N ratio and change in the particle size. Weed seed germination percentage was determined with the final product.

Temperature of composting piles increased initially in all treatments. In EM treatment temperature decreased after the third week, in other two cases a temperature more than 40 °C was retained till the 7th week. In all treatments pH increased during the first four weeks and later decreased to neutral range. During the first three weeks the mean CO₂ evolution rate was higher with the EM solution treated units than with the other two. The C/N ratio significantly reduced during the process in all three treatments but the lowest value was observed in EM treatments. Further change in particle size was significantly higher in EM treatment. Weed seeds were successfully controlled in compost processed with bacteria suspension.

It could be concluded that the EM solution and Bacteria powder used in the study accelerated the process but there may be disadvantages such as high weed seed germination and unknown undesirable effects on natural flora.