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ADDITION OF ADAPTED MICROORGANISMS FOR LEAF COMPOSTING

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Abstract

Techniques such as composting, a controlled process of decomposition of organic materials, have become fundamental to minimize the problems associated with the organic fraction of urban solid waste, as the potential to cause damage to public health, the environment and, consequently, to economic and administrative aspects can be related to this kind of waste. Microbial activity is also highlighted as a relevant factor since the microorganisms are fundamental in the degradation of organic matter, which can stimulate or retard the process. The aim of this study was to evaluate the microbial activation in a composting pile, through the insertion of microorganisms extracted from the degradation of leaves, from a previously completed composting process. Two composting piles were assembled, for the first one it was added a biofertilizer, i.e. final compost of a previously composting process, with characterized microorganisms. The monitored parameters were temperature, moisture content, and pH. Aeration and humidification were performed by weekly turnings. Statistical tests were applied comparing the selected monitoring parameters means and medians according to its respective normal distribution. A Pearson's correlation test between temperature values was performed. A statistically significant differences were observed when comparing the median values of temperature and pH between the thermophilic and mesophilic phases, which tends to indicate higher decomposition in the mesophilic phase. Composting showed to be an alternative for the discarding of leaves, and it is also recommended to use the biofertilizers to increase the microbial activity in the beginning of the compost process.

Keywords: biodegradation, Brazil, composting, microorganisms, organic waste

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