Composting and Utilization of Organic Wastes[1]
III. The Effect of Operation System on Composting Process

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Abstract

The composting process is affected by these factors such as microbes, raw materials, and operation system (tank size, air supply, water maintenance, etc.). All of these factors combined will result to various composts with different quality.

The aim of these studies was to evaluate the effect of operation system on compost quality. Results showed that three was good relationship between tank size and temperature induced. Small plastic tank could not maintained the heat produced during composting to perform themo-fermentation, however the heat in large tank often exceeds 70^0C that was too high for the growth of thermo-fungi. The height of container had better not higher than two meters. The air supply of 0.02vvm was helpful for aerobic fermentation in tank with blowing facilities. Intensive air supply induced the composting material stuck together and resulted to bad compost quality. The sticking property could be reduced by increasing the water content of the composting material and overturning the composting material with shovel 2~5 times during the composting process. Nutrient, especially N, lost significantly when the turning operation was conducted too many times. There was no relationship between temperature and compost quality, although it is apparent to increase temperature with inoculating microbes to the composting materials. Compost with shrimp was suitable for the seedling growing media owing to the low nutrient content and more complete fermentation, however compost with fish powder was suitable for field crop because of high nutrient content, especially N.

Key word: Organic wastes, Composting, Operation system, Air supply.

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