Evaluation of Some Methods Used for Rapid Compost Production

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Increase of soil productivity through the use of organic fertilizers has gained great importance in organic food production since soil is the basis of management in sustainable food production. The composting is an aerobic, microorganism-mediated, solid-state fermentation process by which different organic materials are transformed into more stable compounds. The product obtained is the compost, which contributes to the improvement of physical, chemical and microbiological properties of the soil. However, the compost usage in agriculture is constrained because of its long-time action and reduced supply of nutrients to the crops. This study was carried out to evaluate the quality of compost produced using some rapid composting methods using different materials. Eight compost formulations containing combinations of ingredients such as inoculant (mature compost), animal dung (cow dung and poultry manure), green leaves; (*Gliricidia* leaves and *Tithonia* leaves), Eppawala rock phosphate (ERP), saw dust, biochar, banana stems and straw were prepared under aerobic and anaerobic condition, separately. Total nitrogen and available phosphorus contents, temperature fluctuation with time and phytotoxicity of compost were studied. Final compost yield was nearly 1/3 of initial weight and compost prepared under anaerobic condition performed better compared to aerobic treatments. Available phosphorous and total nitrogen were higher in compost prepared using poultry manure as animal dung. pH and electrical conductivity were in acceptable range for almost all compost formulations. The compost prepared using poultry manure, *Glyricidia* without turning produced the best quality in relation to evaluated parameters. The phytotoxicity of compost was reduced with time. Nearly 50% of nitrogen loss observed in all mixtures as reported in similar studies conducted elsewhere.

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