Evaluation of Composting CPU Biomass Wastes Using the Wire Mesh Circular Compost Bin With Compost Activator

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ABSTRACT

The objective of this research study was to evaluate the composting of CPU biomass wastes using the wire mesh circular compost bin with the use of a compost activator. In composting the biomass wastes generated by the University, three tests were conducted using three wire mesh circular bins with a dimension 1.2 m diameter and a height of 1.0 meter. The shredded refuse like dried leaves and grass clippings were mixed with poultry manure and sawdust at a proportion of 3:1. These composting materials were mixed thoroughly while it was being sprayed with BCA compost activator until the desired moisture was attained before loading it in the bin. The three bins were covered completely with plastic sheets except at the bottom to preserve the heat generated were decomposition started. Results of the evaluation show that composting of CPU biomass wastes using the circular bin would produce an average of 276.33 kg of compost after the 60-day operation. Further analysis revealed that the compost materials has an average composting rate of 0.828 cm/day and the volume of the bin was reduced to more than half or at an average of 55.79 percent. The average temperature of the bin ranged from 48°C during the first week and it went as high as 60°C during the third to fifth week of operation and gradually the temperature started to decrease until it went stable to 45-46 °C when composting was done. Moisture content in the bin was maintained at a recommended rate of 40-60 percent. Analysis conducted by the Regional Soils Laboratory revealed that the

average amount of nitrogen an phosphorous find in the compost is 1.20 and 1.28 percent, respectively. The compost produced showed a high pH level of 8.4.