Compost feedstock characteristics and ratio modelling for organic waste materials co-composting in Malaysia

ABSTRACT

In Malaysia, large amounts of organic materials, which lead to disposal problems, are generated from agricultural residues especially from palm oil industries. Increasing landfill costs and regulations, which limit many types of waste accepted at landfills, have increased the interest in composting as a component of waste management. The objectives of this study were to characterize compost feedstock properties of common organic waste materials available in Malaysia. Thus, a ratio modelling of matching ingredients for empty fruit bunches (EFBs) co-composting using different organic materials in Malaysia was done. Organic waste materials with a C/N ratio of<30 can be applied as a nitrogen source in EFB co-composting. The outcome of this study suggested that the percentage of EFB ranged between 50% and 60%, which is considered as the ideal mixing ratio in EFB co-composting. Conclusively, EFB can be utilized in composting if appropriate feedstock in term of physical and chemical characteristics is coordinated in the co-composting process.

Keyword: Co-composting; Empty fruit bunch; Organic materials; Matching ingredients; Ratio modelling