

Effect of Rice Husk Ash on the Physicochemical Properties of Compost

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ABSTRACT

Recently, the increase in demand for rice has led to the numerous availabilities of rice husks (RH) in Malaysia. RH is being utilized as industrial fuel to generate electricity through incineration process in the boiler. During the incineration process, rice husk ash (RHA) is being produced as the by-product and caused environmental pollution. RHA has the potential of being utilized as organic fertilizer through a composting process to control environmental pollution. Thus, this study investigated the effect of different compositions on the duration of the composting process and physicochemical properties of compost. The raw materials and finished compost were analyzed in terms of elemental composition, pH, water holding capacity, and moisture content. The obtained results showed that addition of 7.5 wt.% of RHA can improve composting process due to the presence of silica which can maintain the moisture content within 50–60% and water holding capacity of compost at the range of 61-73%. The results of this study have clearly shown the potential of the composting process in treating RHA. However, further studies are required to provide a deeper understanding of the mechanisms involved in facilitating the development of an optimum treatment system applicable to the industry.

KEYWORDS: silica; rice husk ash; POME sludge; decanter cake

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