

# EFFECT OF RICE HUSK ASH ON THE PHYSIOCHEMICAL PROPERTIES OF COMPOST

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## Abstract

The production of rice husk (RH) in Malaysia kept on increasing due to high demand of rice. In order to dispose the RH, it was utilized as industrial fuel through incineration process in the boiler to generate steam to provide electricity. Through incineration process, rice husk ash (RHA) was produced as by-product. RHA can cause environmental pollution in terms of space limitations. In order to deal with the problem, RHA can be utilized as organic fertilizer through composting process. RHA has abundant resource of silica (>94% of silica element as SiO<sub>2</sub>) which can increase the water holding capacity and moisture content of compost. Based on this reason, this work was done to investigate the effect of different composition of RHA on the duration of composting process and physiochemical properties of compost. In this work, palm oil mill effluent (POME) sludge and decanter cake were mixed at constant ratio of (1:1) and mixed with RHA at various compositions in the range between 0 to 10 wt%. During the composting period, temperature profile and pH profile were monitored daily for 50 days. The raw materials and finished compost were analyzed in terms of elemental composition, pH, water holding capacity, moisture content and C/N ratio. Based on temperature and pH profile it is observed that the addition of 7.5wt% of RHA can accelerate the composting process due to the presence of silica which can maintain the moisture content and water holding capacity of the compost.

**Keywords:** Silica; Rice husk ash; POME sludge; Decanter cake