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## Nutrient Recycling of Empty Fruit Bunches and Palm Oil Mill Effluent - A Co-composting Technique

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*Empty fruit bunches and palm oil mill effluent are the major and bulky by-products in palm oil mill after extraction of palm oil, both facing practical difficulties in direct soil application. In this experiment, the objective was to standardise an efficient and ecofriendly technique of utilising the nutrient potential of palm oil mill by-products for nutrient recycling. Bunch waste was mixed with raw effluent and digested effluent with and without urea as starter. Both were mixed based on the proportionate availability of the residues from the palm oil mill. A combination of digested slurry from a biogas plant and bunch wastes took only 90 days for maturity of compost whereas the fresh palm oil mill effluent (POME) mixed with bunch waste took 150 days. The final compost was rich in both nitrogen and potassium, for which the palm requirement also is high. Hence the nutrient potential of these by-products can be exploited in an integrated nutrient management approach in oil palm plantations. The nutrients recovered from compost expected from the by-products from a hectare of plantation could meet almost 30 per cent requirement of nitrogen and the full requirement of potassium. The biogas produced during the process is an added advantage of this technique which can be utilised as a fuel source in the mill.*

**Keywords:** Biological oxygen demand, composting, empty fruit bunches, nutrient recycling, oil palm, palm oil mill effluent.

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