

**PHYSICOCHEMICAL CHARACTERISTICS
OF CO-COMPOSTING OF PALM OIL
EMPTY FRUIT BUNCH (EFB) AND ITS
PRESSED EFFLUENT**

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**BACHELOR OF CHEMICAL ENGINEERING
(ENVIRONMENT) WITH HONOURS**

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(EFB) AND ITS PRESSED EFFLUENT**

By

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ABSTRACT

The high amount of production from palm oil industry will generate high amount of waste. The improper waste management will cause environmental issues. Palm oil Empty Fruit Bunch (EFB) is one of the major wastes from palm oil industry. To tackle these issues few mitigations have been done by the industry to utilise the used of EFB. One of them is by using the EFB for composting. Because of EFB takes longer time to degrade, mixing it with another material is the best method to be applied. So, in this project, pressed effluent of the EFB is used in co-composting together with the EFB. This study will identify the effect of different types of microbes and the amount of microbe on the co-composting physicochemical characteristics. The method use in this study is windrow co-composting method where shredded EFB will mix with its pressed effluent. The pH, temperature, moisture content, Total Organic Carbon (TOC), macro and micronutrients of the co-composting will be studied. The best results obtained for lab-scale co-composting with different types of microbes is dry shell prawn microbes. Dry shell prawn microbes result for moisture content, pH, C/N ratio are 80.29 %, 10.2, and 24 respectively. While the best results for lab-scale co-composting with different amount of microbe added to the effluent mixture is microbes at 0.1 g. The results for 0.1g microbes' addition for moisture content, pH, C/N ratio are 69.58 %, 8.3, 14.77, respectively. Most of the results obtained for the best type and amount of microbe added to the co-composting are similar to the previous studies on co-composting of EFB and Palm Oil Mill Effluent (POME). Thus, it shows that dry prawn shell microbes are the best type of microbes and 0.1 g is the the amount of 0.1g is the best co-composting and EFB pressed effluent has similar physicochemical characteristics with POME and can be applied to the industry.