

**POTENTIAL USE OF OIL PALM DECANTER CAKE (OPDC) AS
REINFORCEMENT FOR POLYMER COMPOSITE**

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DECLARATION


This Final Year Project is a partial fulfillment of the requirements for a degree of Bachelor of Science (Hons.) Plantation Technology and Management, Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA.

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ABSTRACT

Malaysia the second largest country of world's palm oil demand. In addition to the crude palm oil, the palm oil industry also produce huge amount of waste material such as oil palm frond (OPF), oil palm trunk (OPT), palm oil mill effluent (POME), mesocarp fibre (MF), palm kernel shell (PKS), empty fruit bunch (EFB) and oil palm decanter cake (OPDC). For the decanter cake, the amount use of this waste material is to produce composite, fertilizer and also animal feed. However, the aim of this research was to determine the potential of decanter cake as the reinforcement of the polymer composite that called as a natural polymer composite to produce environmentally friendly products. Natural polymer composite is the combination of natural fibers and plastic. For this research, the oil in oil palm decanter cake has been removed first by using of chemicals hexane through a soxhlet extraction process. PRISM TSE-16 machine and hot press machine was applied for combining the oil palm decanter cake of cake and plastic. To know the potential of oil palm decanter cake as a stiffness polymer composite, polymer composite product that have been produced was test by the physical properties and mechanical properties which is flexural test, tensile test, IZOD impact resistance test and water absorption test..