



**THE EFFECT OF CENTRIFUGATION AT 1000 RPM ON CRUDE PALM
OIL CHARACTERISTICS**

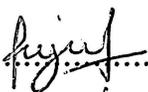
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“I declared that this thesis is the result of my own work except the ideas and summaries which I have clarified their sources. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any degree”

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ABSTRACT

Today, almost all energy in the world is extracted from petroleum base. At current rate of usage the source of petroleum will meet its end sooner or later. Alternative energy is needed to replace the current source of energy. Alternative energy can come from various types of sources such as plants, solar, and etc. Crude palm oil (CPO) is renewable and is safe and easy to handle. CPO is one of the vegetable oils that can be used in diesel engines. However, using CPO as fuel in diesel engines caused clogging in the fuel system. This study focused on finding out the effect of centrifugation at 1000 rpm on CPO characteristics. The CPO was centrifuged and the liquid (olein) was collected in order to measure its characteristics in terms of viscosity, density, energy content, and flash point. Results show that kinematic viscosity of CPO reduced from 64.0593 mm²/s to 43.065 mm²/s. Density of centrifuged CPO slightly reduced from 862.2 kg/m³ to 833.2 kg/m³ while energy content remains the same at a range of 39000 J/g to 40000 J/g. Flash point for centrifuged crude palm oil is 263°C. At a speed of 1000 rpm, the percentage of separation between olein and stearin increases proportional to the increment of temperature.

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