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### Experimental evaluation of the transesterification of *Jatropha curcas* oil into biodiesel

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**Abstract :** In this work the transesterification pathway of *Jatropha curcas* oil for biodiesel production was studied. For the experimental process, *Jatropha* oil was extracted using hexane as a solvent and subsequently refined to be esterified due to the presence of high content of free fatty acids at 50°C and 500 rpm, using 60 % w/w alcohol/oil ratio and 1% w/w H<sub>2</sub>SO<sub>4</sub>. Finally, the oil was transesterified with different amounts of methanol and NaOH as a catalyst, according to the experimental design. In addition, physicochemical properties for the crude oil and biodiesel such as lipid profile, density, calorific value, kinematic viscosity, cetane number, among others, were determined. Results showed that the highest yield obtained was 95 % at 65°C with methanol/oil molar ratio of 8:1 and a catalyst amount of 0.5 % w/w. Finally, by comparing the property results obtained against data reported in the literature and the ASTM standards for biodiesel, it can be concluded that the biodiesel obtained from *Jatropha curcas* is a viable alternative with potential to reduce the environmental impact and energy dependence caused by fossil fuels.

**Keywords :** *Jatropha curcas* oil, Biodiesel, Transesterification.

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