

## INVESTIGATION ON BIOFUEL PRODUCTION USING TWO BASE CATALYSTS

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### ABSTRACT

This research is concerned with the conversion of the waste palm oil and jatropha oil to fatty acid methyl esters (biodiesel) by method of trans-esterification with methanol in the presence of sodium hydroxide or potassium hydroxide catalyst (and their combination in varied proportions). For reaction time of 90 minutes at a reaction temperature of 60°C and catalyst weight of 1 gram, it was observed that maximum yield of 94.8% and 92.6% were obtained from palm oil and jatropha oil at a methanol to oil molar ratio of 10:1. All biodiesel samples were tested according to ASTM B100 standards to ascertain their properties as commercially usable biodiesel, and all samples were found to comply with the standards.

**KEYWORDS:** Waste Palm Oil, Jatropha Oil, Biodiesel, Trans-Esterification