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# THERMAL SCIENCE

## International Scientific Journal

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### COMPARISON OF PERFORMANCE OF BIODIESELS OF MAHUA OIL AND GINGILI OIL IN DUAL FUEL ENGINE

#### ABSTRACT

In this work, an experimental work was carried out to compare the performance of biodiesels made from non edible mahua oil and edible gingili oil in dual fuel engine. A single cylinder diesel engine was modified to work in dual fuel mode and liquefied petroleum gas was used as primary fuel. Biodiesel was prepared by transesterification process and mahua oil methyl ester (MOME) and gingili oil methyl ester (GOME) were used as pilot fuels. The viscosity of MOME is slightly higher than GOME. The dual fuel engine runs smoothly with MOME and GOME. The test results show that the performance of the MOME is close to GOME, at the pilot fuel quantity of 0.45 kg/h and at the advanced injection timing of 30 deg bTDC. Also it is observed that the smoke, carbon monoxide and unburnt hydro carbon emissions of GOME lower than the MOME. But the GOME results in slightly higher NOx emissions. From the experimental results it is concluded that the biodiesel made from mahua oil can be used as a substitute for diesel in dual fuel engine.

#### KEYWORDS

[alternative fuel](#), [mahua oil methyl ester](#), [gingili oil methyl ester](#), [liquefied petroleum gas](#), [dual fuel engine](#), [performance](#)

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