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# The influence of bio additive on the compression ignition engine with diesel and Jatropha methyl ester biodiesel

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## ABSTRACT

The present experimental investigation evaluates the effects of using blends of diesel fuel with 20% concentration of Methyl Ester of Jatropha biodiesel blended with bio additive. Both the diesel and biodiesel fuel blend was injected at 23° Before Top Dead Centre to the combustion chamber. The experiment was carried out with three different ratios of bio additive. Biodiesel was extracted from Jatropha oil; 20% (B20) concentration is found to be best blend ratio from the earlier experimental study. The bio additive was added to B20MEOJ at various concentrations of 1 ml, 2 ml and 3 ml, respectively. The main objective is to obtain minimum specific fuel consumption, better efficiency and lesser Emission using bio additive blends. The results concluded that full load shows an increase in efficiency when compared with diesel, and highest efficiency is obtained with B20MEOJBA 3 ml bio additive blend. It is noted that there is

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performance closer to that of diesel, but emission is reduced in all blends of B20MEOJBA 3 ml compared to that in diesel. Thus the work marks for the suitability of biodiesel blends as an alternate fuel in diesel engines.

#### KEYWORDS:

[Methyl ester of Jatropa](#)   [bio additive](#)   [performance](#)   [combustion](#)   [emission](#)

## Disclosure statement

No potential conflict of interest was reported by the authors.

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