

Effects Of Biodiesel From Different Feedstocks On Engine Performance And Emissions: A Review

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ABSTRACT

This paper analyzes the performance and emissions of biodiesel from different feedstocks. The main goal of this paper is to provide information to the engineers, industrialists and researchers who are interested on biodiesel and to emphasise biodiesel as a promising alternative replacement for fossil fuels. A substantial number of literatures from highly rated journals in scientific indexes were cited preferentially since 2000. The performance and emissions indicators such as brake torque, brake power, BTE, EGT, BSFC NO_x, PM, CO, CO₂, HC and smoke density have been evaluated in comparison to pure diesel. The results showed that different sources of biodiesel feedstocks give different results to engine performance and emissions. Surprisingly some of the research yielded favourable results towards the biodiesel as compared to pure diesel. The study concluded that biodiesel can be used in compression ignition engine as a replacement of diesel fuel to fulfil the global energy demand. However, further research on about optimisation, cost-effectiveness and availability of biodiesel needs to be carried out to help ensure that biofuel will be able to fully replace fossil fuel.

KEYWORDS: Biodiesel; Production; Performance; Combustion; Emissions

DOI: [10.1016/j.rser.2015.06.031](https://doi.org/10.1016/j.rser.2015.06.031)