

Performance Analysis of Diesel Engine Using Bio-Diesels

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Abstract: *The energy consumption is growing or increase at an enormous rate of demand and rapid uses of alternative fuels or renewable sources of energy and environmental threat, a number of nonconventional energy sources of energy generation varieties have been studied worldwide Karanja, Neem, Palm, Waste Cooking oil-based methyl esters were produced and blended with conventional diesel. fuel blends (Diesel, B20, B40, B60, B80 and B100) were tested for their use as substitute fuel for a single cylinder, four stroke, VCR (Variable Compression Ratio) Diesel engine. Test data were generated under different loads. Change in Performance and exhaust emissions (CO₂, CO, HC, NO_x) were also analyzed for determining the optimum test fuel at various operating conditions. The maximum increase in power is observed for Palm biodiesel and Titanium Oxide. Brake specific fuel consumptions for all the biodiesel blends with diesel increases with blends and decreases with increasing load. There is an increase in performance when titanium oxide is added in biodiesel blend. There is a reduction in smoke for all the biodiesel and their blends when compared with diesel. Smoke emission reduces with blends and speeds during full load performance test.*

Keywords: Alternative Fuels or Renewable Sources of Energy, Variable Compression Ratio, Palm Biodiesel and Titanium Oxide, etc.

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