

# Experimental analysis of engine performance and emission characteristics using biodiesel obtained from winter green oil

Author(s)

**Rajasekar, R; Ganesan, S**

## Abstract

Nowadays, the productivity of vehicles goes on increasing and in the same way the rate and emission of fuels also getting high. —In this paper, winter green oil has been blended with diesel in various proportions and three kinds of emulsion fuels were employed. The emulsion fuels are: (A) Diesel-80%, winter green oil-20% by volume, (B) Diesel-90%, winter green oil-10% by volume and (C) Diesel-95%, winter green oil-5% by volume. Due to the presence of molecular oxygen, present in the biodiesel, that leads to improved combustion and produces less polluting emission compared with a normal diesel engine. The performance testing has been done by using varying load conditions for each blended fuel at a constant speed of 1500 rpm. In the case of engine exhaust gas emission, reduction in HC (hydrocarbon), CO (carbon monoxide) and NO<sub>x</sub> (oxides of nitrogen) were found for B5, B10. The emission result in B20 is equal to diesel fuel. As a result of an investigation, the BTE (brake thermal efficiency) is increased and TFC (total fuel consumption) is decreased compared to diesel and carbon monoxide, hydrocarbon was reduced by 10% to 20%. At the same time oxides of nitrogen emission has increased by 5% to 8%. © 2018 Scientific Publishers. All rights reserved.



  
**PRINCIPAL**  
Sri Raaja Raajan College of Engg. & Tech.,  
Amaravathipuram, Karaikudi - 630 301  
Sivagangai Dist. Tamil Nadu