The Influence of Multi Feedstock Biodiesel to the Performance Diesel Engine

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ABSTRACTS

One alternative fuel for diesel engines that have been developed in Indonesia is biodiesel as supplement of diesel oil on diesel engine. Biodiesel can be made from vegetable oils derived from crops such as palm oil, jatropha, palm oil, soybean oil, grains etc.. on the future of biodiesel feedstock varies so it is necessary to model the characteristics of the biodiesel. The success of producing CME (Castor Methyl Esthert), PME (Palm Methyl Esthert) and JME (Jelantah Methyl Esthert) provides an opportunity for bringing in an effort. Characteristics of multi-feedstock biodiesel fuel biodiesel CME, PME and JME in a composition to a viscosity average 9-11 cst, density 0.87 to 0.89 g / cm3, Calorific Value 8901-8951 cal / g, cloud point -3 - 0 C, and the cetane number from 62.6 to 65.3.

This research, biodiesel from CME, PME and JME mixed with diesel one with the composition of B10, B20, B50 and B100. Fuel mixture has been tested in diesel engines to determine its performance. Experiment has been with various machines and load rotation. Such as power-performance diesel engine at full load is higher than the use of B100 B10, B20 and B50. B100 engine torque with diesel oil showed similar variations at all speeds, when using B10, B20 and B50 engine torque fuel have the same tendency at high speed. Specific fuel oil consumption (SFOC) of lower than B10 B20, B50 and B100 at full load. However, thermal eficiensi B50 at high speed decreased compared to other fuels.

Keywords: Multi-feedstock Biodiesel, properties, performance, diesel engine.
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