

PERFORMANCE AND EMISSION CHARACTERISTICS OF CI ENGINE USING SIMAROUBA BIODIESEL WITH SC5D ADDITIVE

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ABSTRACT

The world's fossil fuel reserves are depleting at higher pace due to exponential growth of population and increased usage of technology. Developing countries like India, invests heavily on imports of petroleum fuels and simultaneously better fuel economy and higher power with lower maintenance cost has increased the popularity of diesel engine vehicles. Diesel engines are used for bulk movement of goods, powering stationary/mobile equipment, and to generate electricity more economically than any other device in this size range. Diesel engines are the major contributors of various types of air polluting gases like CO, HC, NO_x, Smoke etc. Improvement of fuel properties are essential for suppression of diesel pollutant emissions. Vegetable oil sare also a very hopeful alternate fuel for diesel engines because they are renewable, clean burning and have properties analogous to that of diesel. Experimental investigation has been carried out on the performance and emission characteristics of CI engine using Simarouba oil and its blends with SC5D Additive. Tests are conducted on single cylinder four stroke water cooled compression ignition engine to evaluate the feasibility of blends of Simarouba oil with SC5D Additive. It is evident from the experiment that additive will improve the thermal efficiency of the engine and also it influences one mission characteristics.

Keywords: Biodiesel, Simarouba, SC5D Additive, 4 stroke diesel engine, Engine performance and emissions.

