

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM



PROJECT WORK REPORT ON

**“COMPARATIVE STUDY OF BIODIESELS EXTRACTED FROM
WASTE COOKING OIL AND HONGE OIL IN SINGLE CYLINDER CI
ENGINE OPERATED WITH ELECTRONIC DIRECT FUEL INJECTION”**

SPONSORED BY

**KARNATAKA STATE BIOFUEL DEVELOPMENT BOARD
KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
BANGALORE**

(No. 35S_B034)



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DAVANGERE-577004**

2011-2012

ABSTRACT

Diesel engine is a popular prime mover in rural areas, particularly in the places where electrical power is not available. The rapid depletion of fossil fuel with increased environmental concern has stimulated worldwide efforts to produce alternative to diesel. Use of bio-origin fuel as an alternative fuel can contribute significantly towards the twin problem of fuel crises and environmental pollution. The fuel of bio-origin may be the biodiesel obtained from edible or non-edible vegetable oil through transesterification process. Most of the properties of biodiesel compare favorably with the characteristics required for CI fuel. This fuel in the form of blend with diesel performs almost as well as neat diesel fuel with little or no engine modification.

In the present study, test is conducted to evaluate and compare the use of various diesel supplements at B20, B40 blend ratios, in a standard, fully instrumented, four stroke, and Electronic direct injection CI engine. More specifically production of biodiesels from waste cooking oil, Honge oil and study of the fuel properties shows that the biodiesels are meeting the ASTM standards. The series of test is conducted using biodiesels blends with engine working at 1500rpm at a 80% load. In each test performance and emission characteristics are studied and results are confirming that the WCO biodiesel blends is having slightly higher BSFC compare to Honge blends. Emission of CO, HC smoke is decreased for both biodiesel blends. But there is a increase in NO_x is observed while using biodiesel blends.