

## COMPARATIVE ANALYSIS OF MAHUA AND HONNE OILS AS ALTERNATIVE BIO-DIESEL FUEL IN AGRICULTURAL CI ENGINE

**M. C. NAVINDGI<sup>1</sup>, MAHESWAR DUTTA<sup>2</sup>  
AND B. SUDHEER PREM KUMAR<sup>3</sup>**

<sup>1</sup>Associate Professor, Department of Mechanical Engineering,  
PDA College of Engineering, Gulbarga, 585105, Karnataka, India,

<sup>2</sup>Principal, Hi Tech College of Engineering & Technology,  
Gandipet, Himayat Nagar, Hyderabad, India,

<sup>3</sup>Principal, JNTUH College of Engineering,  
Jagtyal, A.P, India

### Abstract

Scarcity of conventional petroleum resources has promoted research in alternative fuels for internal combustion engines. Among various possible options, fuels derived from triglycerides (vegetable oils/animal fats) are promising for the substitution of fossil diesel fuel. Vegetable oils poses some characteristics like durability, high viscosity and low volatility compared to mineral diesel fuel. In the present work, experiments were designed to study the effect of reducing mahua and honne oil's viscosity by preheating the fuel, using a specially designed fuel tank. The acquired engine data were analyzed, at constant speed of 1500 rpm and varying load, for various parameters such as brake thermal efficiency, brake specific energy consumption (BSEC), emission of exhaust gases like CO, UBHC and smoke opacity. In operation, the engine performance with mahua and honne oil (preheated), was found to be very close to that of diesel. The performance of honne oil was found better than mahua oil in all respects.

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