

# Experimental Study of the CI Engine Using Blend of Diesel With Additives Bardahl –A Review

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**Abstract -** The depletion of oil resources as well as the environmental regulation has led to the development of alternate energy sources. Diesel with Bardhal additives is a variable substitute for petroleum-based fuel. Its advantages are improved lubricity, higher cetane number, cleaner emissions, reduced global warming. Bardhal with diesel has potential as an alternative energy source. However, this oil alone will not solve our dependence on foreign oil within any practical time frame. Use of this with other alternative energy sources and suitable additives such as Varius Blend of Bardahl could contribute to a more stable supply of energy. Bardahl blend thus produced meets the standard bardahl blend specifications. The production and consumption of bardahl blend will inevitably rise in future due to high performance impact, ease of handling, and possibility of use without need for major adjustments of existing engines of motor vehicles. Production and use of bardahl blend leads to Saves money, Improves energy security of the nation.

**Keywords –** CI engine, Diesel, bardhal.

## 1. INTRODUCTION

An enormous increase in the number of automobiles in recent years has resulted in greater demand for petroleum products. With crude oil reserves estimated to last only for a few decades, therefore efforts are made on way to research on alternative to diesel. Depletion of crude oil would cause a major impact on the transport sector. Fossil fuels play the significant role in development of country. Continious supply of fuel with increasing rate should be ensured to sustain and further development of country. Recently, significant problems associated with fossil fuel like short supply, drastically increasing price, non renewability, contamination of environment, adverse effect on bio systems compiles researcher to search for an alternative fuel, which promises a harmonious correlation with sustainable development, energy conservation, management, efficiency, and environmental preservation has become highly pronounced in the present context. Energy conservation is important for most of the developing countries, including rest of world. The rapid depletion in petroleum reserves and uncertainty in petroleum supply due to political and economical reasons, as well as, the sharp escalations in the petroleum prices have stimulated in search for alternatives to petroleum fuels. The situation is very grave in developing countries

like India which import 70% of the required fuel, spending 30% of her total foreign exchange on oil imports.<sup>[1]</sup> In view of this, researcher found and analyze many energy sources like CNG, LNG, LPG, ethanol, methanol, hydrogen, diesel with bardahl blend and many more. Diesel engines are major source of transportation, power generation, marine application, agriculture vehicles etc. Diesel with bardahl blend is widely accepted as comparable fuel to diesel in compression ignition engine. It offers advantages like higher cetane number, reduced emissions of perticulates. Moreover, transportation and agriculture sector depends on diesel fuel therefore, it is essential that alternatives to diesel fuels must be developed.

## 2. SYSTEM MODEL



## 3. PREVIOUS WORK

Till date the CI engine performance checked with different blend additives like kusum oil, karenja oil.

## 4. PROPOSED METHODOLOGY

My experiment based on finding the overall performance using bardhal oil with diesel..

## 5. CONCLUSION

In the present study, a series of experimental investigations have been conducted to explore the performance, combustion and emission characteristics with optimization of engine operation using diesel, and bardhal blends with diesel fuel in direct injection single cylinder variable compression ratio multi fuel diesel engine. The present effort has contributed mainly in the following aspects: A

comprehensive survey of available literature has been done on

- compression ignition engines fuelled with vegetable oils, bardhal and their specified blends in diesel with dual fuel mode operation, to develop an understanding of performance, combustion and emission behavior of the engine. In addition to this an exhaustive literature review was also undertaken on bardhal production techniques, cost estimation of bardhal production and utilization, properties and environmental impact of bardhal. A suitable test rig including pressure pickup, charge amplifier and high
- speed data acquisition system was developed together with emission measuring equipments like smoke meter and exhaust gas analyzer for conducting detailed experimental investigation of performance, combustion and emission characteristics of diesel engine fuelled with thumba oil, thumba bardhal and their specified blends with diesel.

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