

285. Performance Study on Straight Vegetable oil (SVO) blended with Petrol as substitute fuel in CI Engine

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Objectives:

a. Extraction of Non Edible Oil from Seeds using Expeller.
b. Sedimentation and filtering of obtained oil.
c. Filtered oil is blended with petrol with percentage of 5%.
d. To do the performance test, SVO is blended with 5% of petrol and mixture of SVO and petrol is added to 90%, 80%, 70%, 60% of diesel.(Ex: SVO+5% of petrol +90% of diesel)
e. Blended oil is tested for Viscosity and density.

Methodology:

The use of SVO (straight vegetable oil) as a fuel substituent in CI engines, this method firstly oil extracted from non edible seeds especially karanja(Pongamia pinnate), the obtained is allowed for sedimentation process. Later the SVO oil is filtered and blended with petrol various percentages 05%. Blended fuel is analysed for physical properties of fuel and then one of blended 5% petrol with SVO is taken for long term endurance test in CI engines. During endurance test engines properties were reported.
**Outcome of the project:**
The outcome of project is useful in deciding

a. Use of SVO in Diesel engines.
b. Optimum blend of SVO and petrol.
c. Effect of using SVO in engine for longer duration.
d. Promotion of usage SVO to farmers in their diesel pump sets.
e. Biofuel raw material Development.
f. Economic viability.
g. Entrepreneurs can easily involve introducing small scale extraction units in villages.

**Conclusion:**

- There is no gradual variation in efficiency as percentage of blend increases when it is compared with the standard diesel.
- Density and viscosity increases as blend percentage increases at room temperature.