



TITLE OF RESEARCH ARTICLE

BIODIESEL AS AN ALTERNATIVE FUEL FOR DIESEL IN PAKISTAN

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KEYWORDS

BIODIESEL PUMPS ,ALTERNATIVE FUELS ,ENVIROMENT FRIENDLY,COCO-BIODIESEL ,USED VEGETABLE OILS OR ANIMAL FATS,MARINE ENGINES, ETHANOL OR METHANOL,BIODIESEL FUEL CAN BE USED IN ANY DIESEL ENGINE,BIODIESEL PLANTS.

ABSTRACT

Developed in the 1890s by inventor Rudolph Diesel, the diesel engine has become the engine of choice for power, reliability, and high fuel economy, worldwide. Early experimenters on vegetable oil fuels included the French government and Dr. Diesel himself, who envisioned that pure vegetable oils could power early diesel engines for agriculture in remote areas of the world, where petroleum was not available at the time. Modern biodiesel fuel, which is made by converting vegetable oils into compounds called fatty acid methyl esters, has its roots in research conducted in the 1930s in Belgium, but today's biodiesel industry was not established in Europe until the late 1980s.



RUDOLPH DIESEL

The diesel engine was developed out of a desire to improve upon inefficient, cumbersome and sometimes dangerous steam engines of the late 1800s. The diesel engine works on the principal of compression ignition, in which fuel is injected into the engine's cylinder after air has been compressed to a high pressure and temperature. As the fuel enters the cylinder it self-ignites and burns rapidly, forcing the piston back down and converting the chemical energy in the fuel into mechanical energy. Dr. Rudolph Diesel, for which the engine is named, holds the first patent for the compression ignition engine, issued in 1893. Diesel became known worldwide for his innovative engine which could use a variety of fuels.



Biodiesel is a renewable alternative fuel created from vegetable oils, animal fats, and greases through a chemical process. The chemical process involves reaction of natural oils with an alcohol, and then refining the mixture to create molecules which can be easily burned in a diesel engine. Biodiesel fuel can be used in any diesel engine in pure form or blended with petroleum diesel at any level. Glycerin is the byproduct of the biodiesel production process, and can be used in personal care products or a variety of chemical applications.



BIODIESEL PROCESSING

Biodiesel processing offers many benefits to farmers. Biodiesel have been found to provide excellent lubrication to engines, helping to increase the longevity of machinery. While you'll the biggest benefits by using 100 percent biodiesel, even low blends of biodiesel, including B2 and B5, have been shown to increase the lifetime of farm machinery. Biodiesel processing that farmers and the general public can enjoy is its availability.



Alternatively, you can create your own fuel with the biodiesel processing kits. Our biodiesel processing kits let you convert neat vegetable oil or waste vegetable oil to biodiesel. These biodiesel processing kits are fully

assembled. The kits include all of the equipment that you need for biodiesel processing and safety.

MAKING BIODIESEL FUEL

Making biodiesel fuel has never been easier. Whether you are making biodiesel fuel for use in a fleet of cars for your business, your own personal vehicle, or equipment on your farm, biodiesel fuel offers a renewable alternative to petroleum diesel.



Biodiesel fuel is also good for the engine through which it passes. If you are making biodiesel fuel for one or two vehicles, our mini ester biodiesel processor will suit you in 14 hours, it can produce 13 gallons of biodiesel.

PROSPECTS OF BIODIESEL IN PAKISTAN

Developing countries like Pakistan need continuous supply of cheap energy. It is common fear in today's world that fossil fuels will be depleted soon. The cost of energy is increasing continuously and is expected to be at its peak by 2050. Many technologically advanced countries are successfully using renewable energy sources for their energy needs, however, they still believe in the importance of fossil fuel. In renewable energy field, Pakistan is using hydropower for energy needs successfully, whereas project regarding solar and wind energy is in progress. Biodiesel, which is produced by the reaction of vegetable oil and alcohol, can be used with same or with better performance in diesel engine. It is a clean fuel that causes less environment pollution as compared to petro diesel. Biodiesel is the only possible reciprocal to petro diesel or otherwise diesel engine will be useless after the depletion of crude oil.

CONCLUSION

In nut shell, Biodiesel is eco friendly, Biodiesel is clean burning alternative fuel, and Biodiesel contain no petroleum, but can be blended with conventional diesel fuel. These fuels can be used in any diesel engine without any modification. Biodiesel is degradable, no toxic and free from sulphur and lead.

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