



## **BIODIESEL FAQS**

- **What is Bio-diesel?**

Bio-diesel is the name of a clean burning alternative fuel, produced from domestic, renewable resources such as soybeans, sunflowers, canola, waste cooking oil, or animal fats. Bio-diesel contains no petroleum, but it can be blended at any level with petroleum diesel to create a Bio-diesel blend. It can be used in compression-ignition (diesel) engines or oil-fired boilers or furnaces with little or no modifications. Bio-diesel is simple to use, biodegradable, nontoxic, and essentially free of sulfur and aromatics.

- **How is Bio-diesel made?**

Bio-diesel is made through a chemical process called transesterification in which the glycerin is separated from the fat or vegetable oil. The process leaves behind two products-alkyl esters (the generic chemical name for Bio-diesel) and glycerin (a valuable byproduct usually sold to be used in soaps and other products)?

- **Why should I use Bio-diesel?**

Bio-diesel is better for the environment because it is made from renewable resources and has lower emissions compared to petroleum diesel. It is less toxic than table salt and biodegrades as fast as sugar. Since it is made in the USA from renewable resources, its use decreases our dependence on foreign oil, creates jobs, and contributes to our own economy.

- **How do Bio-diesel emissions compare to petroleum diesel?**

Bio-diesel is the only alternative fuel to have fully completed the health effects testing requirements of the Clean Air Act. The use of Bio-diesel in a conventional diesel engine or oil-fired furnace or boiler results in substantial reduction of unburned hydrocarbons, carbon monoxide, and particulate matter compared to emissions from diesel fuel. In addition, the exhaust emissions of sulfur oxides and sulfates (major components of acid rain) from Bio-diesel are essentially eliminated compared to diesel.

- **Can Bio-diesel help mitigate "global warming"?**

A 1998 Bio-diesel lifecycle study, jointly sponsored by the US Department of Energy and the US Department of Agriculture, concluded Bio-diesel reduces net CO<sub>2</sub> emissions by 78 percent compared to petroleum diesel. This is due to Bio-diesel's closed carbon cycle. Most of the CO<sub>2</sub> released into the atmosphere when Bio-diesel is burned is recycled by growing plants, which are later processed into.



- **Is Bio-diesel used as a pure fuel or is it blended with petroleum diesel?**

Bio-diesel can be used as a pure fuel or blended with petroleum in any percentage. B20 (a blend of 20 percent by volume Bio-diesel with 80 percent by volume petroleum diesel) has demonstrated significant environmental benefits with a minimum increase in cost for fleet operations and other consumers.

- **What is B100?**

Full strength (100 percent) Bio-diesel is often referred to as B100 or "neat" Bio-diesel. A blend of Bio-diesel containing 20 percent Bio-diesel and 80 percent petroleum diesel is referred to as B20. The most popular blend of Bio-diesel in the United States is B20, which offers significant reductions in harmful emissions at an affordable price.

---

## **BIODIESEL IN INDIA**

There has been greater awareness on Biodiesel in India in the recent times due to shortage of Petrodiesel and soaring prices. Significant activities have picked up for its production especially with a view to reduce the huge cost involved in import of Petroleum fuel and to take care of the shortage of Petrodiesel anticipated within a few years from now. In addition, the process of production of Biodiesel from non-edible vegetable oil will boost the rural economy and providing non-polluting, bio-degradable and safe environment.

Considering all the aspects available among non-edible Tree Bearing Oil (TBO) seeds, *Jatropha curcas* has been identified as the most suitable seed for extraction of oil and subsequent processing of Biodiesel. The best source of producing Biodiesel is *Jatropha curcas*, a plant that grows well mainly in tropical climate. *Jatropha* can be grown in arid zones (20 cm rainfall) as well as higher rainfall zones and even on land with thin soil cover.

In tropical countries like ours, *Jatropha* grows well and can bloom and produce fruit throughout the year. To withstand extreme drought conditions, *Jatropha* plant sheds leaves to conserve moisture which may result in reduced growth. Although, *Jatropha* is adapted to soils with low fertility and alkalinity, better yields can be obtained on poor quality soils, if fertilizers containing small amount of nutrients are used for the first two years.



Therefore, Europe and other non-tropical countries are a buyer of Jatropha seeds and seedling of Jatropha from our internal market. As of now no countries can supply any Jatropha seeds for the commercial production of Biodiesel, but seeds for cultivation purpose are available since mass scale cultivation is going on in the Indian sub-continent. Nursery propagation of Jatropha needs specialized agro techniques to get plants to yield requisite oil yields and the plant needs specialized attention (pruning) to make it adequately seed bearing just like tea plant. The raising of nursery and plantation thereafter should be done under professional guidance. Jatropha plant bears fruits from 2nd year of its plantation & the economic yield stabilizes from 4th/5th year onwards. The plant has an average life with effective yield up to 50 years. Jatropha gives around 2 kg.of seeds/Plant The economic yield can be considered as one-two kg./Plant & 4-6 MT hect/ year depending on agro-climatic zone & agricultural practices. One hectare of plantation on average soil will give 1.6 MT of oil.

India produces only 22% of its diesel requirement & 78% is imported at a huge cost in foreign currency. With the introduction of compulsory use of 10-20% Biodiesel in UK, USA, France, Germany, Japan & other countries who specifies a 40-50% mix by 2010. India has a huge requirement by 2010 to meet the world norms & emission standard & accordingly a National policy has already been given a green signal by Govt.of India in the year 2003. Indian Railways have already carried out a trial run on Amritsar-Shatabdi Express with Biodiesel. Similarly, Haryana State Transport buses have been run by using biodiesel. Indian Railways have taken a decision to plant Jatropha trees by the side of railway tracks & Indian Oil other agencies in possession of Biodiesel Processing Units will eventually process the Jatropha oil into biodiesel for Indian Railways & to meet the national needs.

---

#### **BIODIESEL WORLD SCENARIO**

In present scenario biodiesel has been accepted as clean alternative fuel by most of the developed & developing countries.

Countries like USA, France, Germany, Italy, Malaysia, Czechoslovakia, Austria & other European & Asian countries have put a major thrust on production of biofuel from vegetable oil through extensive research & development. Biofuel can be used as fuel for diesel engines (as either B5-a blend of 5% biodiesel for High speed diesel or B20 or B100). Brazil uses ethanol as 100% fuel in about 20% of vehicles & 25% blend with gasoline in the rest of the vehicles. USA uses 10% ethanol-gasoline blends whereas a 5% blend is used in Sweden & Australia. India is no exception. Extensive experimentation by Ministry of Non-conventional Energy source,

Indian Oil Co., Mahindra & Mahindra & other private entrepreneurs through their research & studies had demonstrated that Jatropha & Karanja oil could be a low cost appropriate feed stock for production of biofuel in the operation of Diesel Engines. In recent times, Indian Railways have successfully tested biofuel produced from Jatropha Oil blended (10%) with petrodiesel.

---



---

### **BENEFITS OF BIODIESEL**

Biodiesel has many environmentally beneficial properties. The main features & benefit of biodiesel is that it can be termed as "Carbon neutral". \*Biodiesel reduces serious air pollutants such as particulates & air toxicity.

Due to its less polluting combustion, biodiesel provides a 90% reduction in cancer risks & neonatal defects.

- » Biodiesel is biodegradable & renewable by nature.
  - » Biodiesel can be used alone or mixed in any ratio with conventional diesel.
  - » The preferred ratio of mixture-ranges between 5 & 20%.
  - » Biodiesel enhances the life of diesel engines.
  - » Biodiesel could be cheaper than conventional petrodiesel.
  - » Biodiesel has good potential for rural employment generation.
- 

**For Any Business Enquiries Please Contact us at:-**

### **Bulk Agro India Pvt. Ltd.**

126, ABC Ground floor , Near Shahi Bhagh,  
Hiran Magri Sector-11, Udaipur,  
Rajasthan (India)

E-mail: [bulkagro@bulkagro.com](mailto:bulkagro@bulkagro.com)  
Phone No: +91-294-2483162  
FAX No: +91-294-2483182  
Mobile: +91-9414156473