



## National Low-Blend FAQ

### **Biodiesel: National Low-Blend Frequently Asked Questions**

#### **What is biodiesel?**

Biodiesel is a clean-burning fuel for diesel engines made from domestically produced, renewable fats and oils such as soybean oil. Biodiesel has no sulfur or aromatic compounds and already meets the new Environmental Protection Agency (EPA) ultra low sulfur diesel fuel mandated for introduction in 2006. Biodiesel can be used in existing diesel engines without modification. Biodiesel burns substantially cleaner than petroleum based diesel fuel. It is a powerful option for improving our environment while reducing dependence on foreign oil, stretching our fossil fuel reserves, and providing value-added markets for agricultural products.

#### **Is biodiesel a legal fuel?**

Yes. Biodiesel is registered with the EPA as a fuel and as a fuel additive. It has complied with Tier 1 and Tier 2 health effects testing required by Section 211(b) of the Clean Air Act Amendments of 1990. It is the only alternative fuel to have supplied this rigorous \$2.2 million dollar testing regimen to the EPA.

#### **What are the benefits of using biodiesel as a blending component in diesel fuel?**

Using biodiesel as a blending component for diesel fuel has environmental benefits, performance benefits and economic benefits to US agriculture and the nation as a whole. Incorporating biodiesel in the 35 billion gallons of diesel fuel used in the US every year will have the benefits outlined below.

##### *Environmental Benefits:*

Burning just a 2% biodiesel blend in on-road diesel fuel will curtail harmful tailpipe emissions. Annually it will:

- Reduce poisonous carbon monoxide emissions by more than 35 million pounds annually.
- Reduce ozone forming hydrocarbon emissions by almost 4 million pounds annually.
- Reduce hazardous diesel particulate emissions by almost 3 million pounds annually.
- Reduce acid rain-causing sulfur dioxide emissions by more than 3 million pounds annually.

According to the EPA, diesel fuel exhaust contains harmful polycyclic organic matter (POM) that can affect the reproductive, developmental, immunological and endocrine (hormone) systems in humans and in wildlife. Compared to the 700 million gallons of diesel fuel that would otherwise be used, the 2% biodiesel would reduce harmful and cancerous POM impacts to streams, wildlife and humans by more than 80%.

Biodiesel is produced from renewable sources grown and harvested each year, such as soybeans, in what experts call a closed loop carbon cycle. Biodiesel has appropriately been called "solar power, only more feasible," and as "liquid solar energy." Use of 2% biodiesel each year in the US would:

- Reduce life cycle carbon dioxide emissions more than 11 billion pounds annually.
- Extend the fossil diesel supply almost four-fold for every gallon of diesel replaced by biodiesel.

#### *Performance Benefits:*

Biodiesel provides superior fuel lubricity, even at very low blend levels. Sufficient fuel lubricity is necessary to reduce equipment wear and premature breakdown. Bench scale testing has shown that 1% biodiesel can improve the lubricity of diesel fuel 65%, which improves further as more biodiesel is added, although exact results will vary depending on the base diesel fuel stock. Based on this and other testing, Stanadyne--one of largest diesel fuel injection companies in the world--has stated:

- "Incorporation of 2% biodiesel into conventional fuel will eliminate the concerns we have with fuel lubricity."
- "Since biodiesel is a fuel, and not just an additive, incorporation of 2% biodiesel ensures adequate fuel lubricity while eliminating over-dosing concerns present with other additives."

Pure biodiesel, B100, also has high natural cetane (above 50), similar BTU content and provides similar fuel economy to petroleum based diesel fuel, so incorporation at levels below 5% will be transparent to the driver of the vehicle.

Since biodiesel contains no sulfur or aromatic compounds, it can also be used to blend down these levels in petrodiesel, which may become extremely important over time.

#### *Economic Benefits:*

Inclusion of biodiesel in on-road diesel fuel at a level of 1% for lubricity purposes would result in the following:

- 350 million gallons of biodiesel demand.
- Utilization of the oil from 250 million bushels of soybeans (over 2.5 billion pounds of soybean oil).
- Add a minimum of 35¢ to the value of a bushel of soybeans, based on economic analyses conducted by USDA.
- Add more than \$900 million to gross farm income while decreasing federal outlays under the soybean marketing loan program in similar amounts.
- Potentially reduce fleet operating costs through increased equipment life.

Additional economic impacts, such as increased employment; increased level of economic activity and corresponding state and local tax revenue; and other indirect and induced economic impacts will also occur.