

Ethanol vs. BioDiesel

Ethanol is "an alcohol product produced from corn, sorghum, potatoes, wheat, sugar cane, even biomass such as cornstalks and vegetable waste. When combined with gasoline, it increases octane levels while also promoting more complete fuel burning that reduces harmful tailpipe emissions such as carbon monoxide and hydrocarbons."

BioDiesel is "a domestic, renewable fuel for diesel engines derived from natural oils like soybean oil, and which meets the specifications of ASTM D 6751." Or, for those of you who want a more technical definition, it is "a fuel comprised of mono-alkyl esters of long chain fatty acids derived from vegetable oils or animal fats..."

How Are They Produced?

According to the Renewable Fuels Association (*the US ethanol trade organization*), there are two processes for making ethanol: wet milling and dry milling. Each process is explained in detail on the RFA's site.

Biodiesel is made through a chemical process called transesterification "whereby the glycerin is separated from the fat or vegetable oil. The process leaves behind two products -- methyl esters (the chemical name for biodiesel) and glycerin (a valuable byproduct usually sold to be used in soaps and other products).

Which One Is Better For The Environment?

Both forms of biofuel have definite environmental advantages over petroleum-based gasoline and diesel fuel.

According to the RFA, "Ethanol contains 35% oxygen. Adding oxygen to fuel results in a more complete fuel combustion, thus reducing harmful tailpipe emissions. Ethanol also displaces the use of toxic gasoline components such as benzene, a carcinogen. Ethanol is non-toxic, water soluble and quickly biodegradable."

Biodiesel, on the other hand, "is the only alternative fuel to have fully completed the health effects testing requirements of the Clean Air Act. The use of biodiesel in a conventional diesel engine 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 biodiesel are essentially eliminated compared to diesel."