

Straight Vegetable Oil vs. Biodiesel

When I start to explain to people what we do here at American Energy Independence, often the first thing they say is, “Oh, you make biodiesel?” to which I immediately respond, “no, we don’t make biodiesel, we refine used vegetable oil into a usable fuel.”

There’s a lot of confusion over biodiesel and straight vegetable oil (SVO). Many think they are one and the same. They are not! There’s a huge difference between the production of biodiesel and turning used vegetable oil into a usable fuel. In the next few paragraphs, I will attempt to highlight those differences.

The confusion may stem from the fact that many biodiesel manufacturers use vegetable oil as a feedstock or base material-but the similarities stop there. The biodiesel process takes vegetable oil and then performs some major chemistry (formally known as the transesterification process). Vegetable oil is heated, mixed with caustic chemicals, mixed again with flammable liquids, and then “washed” using large quantities of fresh water (which then become contaminated with residuals from the biodiesel process). Some residuals are treated as hazardous wastes where as others, like glycerin, are simply difficult to handle. It’s also important to note this entire process takes large amounts of energy to make energy.

Making a usable straight vegetable oil (SVO) typically begins with used fryer oils. If stored in a warm space and given enough time, water and particulate matter will naturally settle out leaving a usable SVO for very little energy input. In commercial applications-where large quantities of SVO are processed in a relatively short period of time-the bulk of refining is done by centrifugally spinning out the residual water and particulate matter. Comparatively little energy is expended to make energy and the resulting “waste” crumbs or food scraps are non-hazardous and used as either animal feed or compost.

For both resulting products, biodiesel and SVO, the key is to replace fossil fuels commonly referred to as diesel or home heating (#2) fuel oil. You can achieve this goal by either chemically treating vegetable oil (transesterification) or heating refined SVO before introducing it to the combustion process. The reason SVO works on applications like diesel engines and boilers is technology has advanced to the point where engineered solutions now exist that capture waste heat and use it to raise SVOs temperature thus allowing it to behave like its replaceable fossil cousin. Raising its temperature also addresses any viscosity issues surrounding this renewable, carbon neutral, biodegradable, non-toxic, edible fuel!

The inherent differences between biodiesel and SVO are the biodiesel approach is dangerous, uses flammable hazardous chemicals and wastes a tremendous amount of energy in the pursuit of creating energy. In straight vegetable oil applications, our purifying process is simple, non-hazardous, and uses very little energy. The by-product derived from the SVO process is a great compost material.

At the end of the day-regardless of which side of the argument you sit-SVO fuel can be eaten by humans, try that with biodiesel!