



Transesterification Can Be Fun: Biodiesel in LA

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Jennifer Murphy

What fuel is clean-burning, renewable, grown in the US, and brewed in back yards across the country? What fuel makes the murder of Iraqi children, the destruction of the arctic wilderness, and global warming obsolete? It's called biodiesel and it's arrived in Los Angeles.

Pasadena's urban homestead, Path to Freedom, held a biodiesel "Fuel Mixin' Mixer" last Friday. Biodiesel is a viable, sustainable alternative to petroleum that can be used to run any diesel engine. Did you know that Rudolph Diesel, inventor of the diesel engine in 1895, built it to run on peanut oil?

A few weeks ago, Jules Dervaes and his family, owners of Path to Freedom, and Nicole Cousino, George Steinheimer, and Kalib met at the mini-organic farm. Their purpose: to build a biodiesel processor out of an old water heater tank. Biodiesel fuel is made from vegetable oil, methanol and lye. The process is called transesterification. Many biodieselers get their oil for free from restaurants. Four million gallons of fryer grease are thrown out every year in this country. Fast food joints often have to pay to have it taken away. It is sometimes used to make cattle feed but often ends up in landfills. The Path to Freedom group got their oil from a catering company that buys their organic edible flower and herbs. When processed from free used grease, bio-diesel ends up costing about .60 per gallon...

This weekend Pitzer College in Claremont hosted a "California Biodiesel Consumers Conference". The conference, organized by Biofuel Oasis in Berkeley, was planned as a two day intensive in education and brainstorming on issues facing passenger-car biodiesel consumers. They want to lay the groundwork for sustainable and homegrown biodiesel businesses to serve those consumers

The “Fuel Mixin’ Mixer” was an opportunity for some of the travelers, here for the conference, to see what is happening in Los Angeles. As the late afternoon turned chilly, Jules’ son Jeremy, wearing rubber gloves and safety glasses, mixed the lye and the methanol in a large plastic jug. Jules and his other son Justin, with help from Kalib and Marie Alover (AKA Girlmark) got the pump working. It sucked the oil from a large plastic drum into the water tank, where it could begin to heat up. The heating allows better mixing. On a shelf nearby were several small jars of test fuel, in various shades of brown and yellow, some with a thick layer of glycerine. This is a biodegradable by-product of bio-diesel, which can be used to make industrial soap.

The water tank processor was designed by Girlmark, who works with the Berkeley Ecology Action Center. The Path to Freedom group modified and improved the design, making it more compact. One of the beauties of this do-it-yourself technology is how open it is to creativity. Once the methanol/lye mixture was made and the oil was warmed up, they were carefully combined. Let the transesterification begin! The processor stirred it slowly for about an hour. The reaction began right away and the biodiesel rose to the top. There are two more steps after this, letting the mixture settle over night, and washing the fuel.

To heat 20 gallons of oil takes a couple of hours, so the guests, numbering around fifty, munched on homemade soup and cookies while they waited. Discussion topics included the benefits and disadvantages of straight vegetable oil (SVO), fuel taxes in Britain and the US, intentional communities, and the joy of knitting. Present were members of the Boulder Biodiesel Coop, and Grassolean, another green fuels coop, who drove all the way from Colorado. Others came from the Berkely Biodiesel Coop, in the Bay area, which is, as usual, way ahead of Los Angeles in green technologies. Also present were Tom, of the very informative VeggieAvenger website, and Biodiesel Betty, who’s dream is that the school buses of the future will run on biodiesel (and maybe even the vegetable oil that is left over in the school cafeterias). There were also many interested friends of Path to Freedom, some of whom knew little about biodiesel.

By the end there were several more converts to the beauty of home-brewed biodiesel, as well as 20 gallons of lovely golden liquid, suitable for running an old Chevy van or a fancy new Volkswagon Jetta TDI.

The same evening, a few exits south on the 110 Freeway, Northeast Neighbors for Peace and Justice screened a double feature on bio-diesel as part of their regular Friday night video/potluck at Flor y Canto. First up was the newly released “French Fries to go” by Charris Ford of Grassolean, followed by “Fat of the Land”, produced by Niki Cousino, Sarah Lewison, Julie Konop, Florence Dore, and Gina Todus, in 1996. There was a crowd of almost 40 people at the cozy community space, including a lively group from the Bicycle Coalition. Sabrina Merlo, who helped promote the film in 1997 came with her 6 month old son. Niki Cousino, one of the builders of the Path to Freedom processor, joined the group after the screening to answer questions. She has been studying biodiesel for 10 years now, since making “Fat of the Land” and was able to give insights on current issues in the green fuels movement.

“French Fries To Go” is a short, humorous introduction to biodiesel, starring Charris Ford, environmental rapper and biodiesel pioneer. He is the founder of Grassolean and dreams of starting a chain of solar powered stations around the country, “to provide alternative fuel and healthy food to the nation’s growing population of forward thinking individuals.”

“Fat of the Land” tells the story of five enterprising young women who drive their Chevy diesel van across the United States fueling their vehicle entirely with used vegetable oil procured from fast food restaurants during their trip. Their transesterification techniques were crude compared to the fumeless enclosed water heater tank, but their enthusiasm was undiminished, even by the disgusting black crusty tanks of used oil they had to scoop their ingredients out of along the way. Flor y Canto will soon have a lending library where you can borrow these and other videos on global and local issues.

The biodiesel movement in Los Angeles got a big boost this weekend. Path to Freedom hopes to host workshops and become a working model for potential home brewers in Los Angeles. The Fuel Mixin’ Mixer, and the two films at Flor y Canto showed that biodiesel can be made safely and easily in your own own backyard... To find out more about biodiesel check out the websites below. It’s time to seriously consider the power of grease.