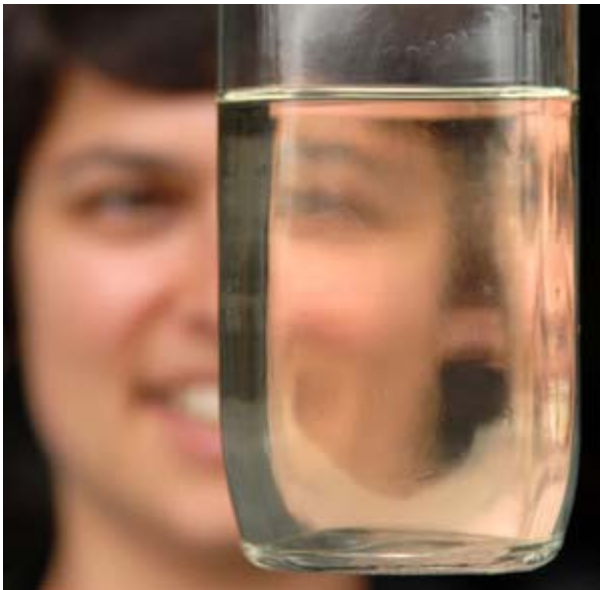


New fuel from nasty gunk

From nasty, stinky goop of restaurant waste, called “trap grease,” a Phila. firm has created a biodiesel innovation.

By Sandy Bauers

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Emily Landsburg of Philadelphia Fry-O-Diesel with a jar of usable fuel, processed from trap grease. The beauty of the fuel is that the raw gunk has no other use.

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Of all the raw sources of experimental "green" energy, the stuff that comes into a tiny Kensington plant is perhaps the nastiest: a brown sludge clotted with food and other goo you really don't want to know about, laced with grease.

A few treatment tanks and chemical processes later, out comes a strange brew, indeed. It is clear and smells slightly herbal.

The latest biodiesel innovation - processed restaurant "trap grease" - keeps Cory Suter's white Volkswagen pickup running. Likewise, the Krapf buses for the Great Valley school district, all normal diesel vehicles.

Fry-o-Diesel is made not from Midwestern soybeans or fryer grease, but from perhaps the most challenging, stinkiest stuff of all: the contents of restaurant tanks that collect whatever goes down the sink, dishwasher, and floor drains.

Philadelphia Fry-o-Diesel L.L.C. last month became one of the first companies in the United States to make trap-grease fuel that meets national standards. To celebrate, some of the vehicles in its test fleet of 40 will meet today at the Philadelphia Zoo, which also uses the fuel, to go for a brief drive.

Demand for biodiesel has tripled in each of the last three years, said Jenna Higgins, a spokeswoman for the National Biodiesel Board. "We're going to need biodiesel made from all types of materials to help meet the rising demand."

Technically, biodiesel can be made from any fat or vegetable oil. But making it cost-effective is the big challenge.

The beauty of Fry-o-Diesel is that trap grease has no other use. While used fryer grease costs about \$1 a gallon, Philadelphia Fry-o-Diesel gets trap grease for free.

It's trapped in the first place to prevent clogging sewer lines. Indeed, the pollutant is costly to dispose of - usually at a wastewater-treatment plant, where it is incinerated.

Bruce Critchlow, operations manager for McGovern Inc., a sanitation and septic company in Kennett Square, said only two facilities in the region would accept it, and they charge 8 to 10 cents a gallon - \$80 to \$100 for the typical restaurant grease trap.

The quest for Fry-o-Diesel began about five years ago.

The Energy Cooperative, a nonprofit regional energy supplier, was looking for a source of biodiesel for home-heating oil. The closest production facility was in Ohio.

Trucking it that far made no sense if the idea was to be environmentally friendly. So they thought about making their own.

"We did a quick scan of Philadelphia. No soybeans," joked Nadia Adawi, president of for-profit Fry-o-Diesel and operations director at the Energy Cooperative, its parent.

A National Renewable Energy Lab study about restaurant trap grease perked them up. Based on the data, Adawi's group estimated that food facilities in the land of the cheesesteak produced 10 million gallons of grease a year.

"We were too stupid to be scared," Adawi said.

With a \$369,696 grant from the state, they moved into an old gasket factory in Kensington and got to work.

Amid a tangle of one-way streets, the space - shared with a defunct printing press and equipment for a die-making business - was almost as funky as the grease.

The first problem was separating the grease from the other gunk. Its content varied widely, depending on its source and age.

Half-jokingly, the team can tell you where the grease comes from. Rice? Probably Chinese. Olive oil? Italian. (They've also found condoms and crack vials.)

The big hurdle was designing a process that would work on anything that went down the drain. Trap grease is different from fryer grease or soybean oil, which converts more easily to fuel.

The group teamed up with the U.S. Agriculture Department's Eastern Regional Research Center in Wyndmoor to work out the chemistry.

Center research chemist Michael Haas figured that one of the biggest challenges - "other than being grossed out" - would be coming up with a quality fuel. "It's really easy to make bad biodiesel."

They now have a multi-tank operation: The stuff is first run through separators to remove water and grit, leaving only grease. Next, unspecified catalysts - they've applied for a patent - are mixed in to convert the fat into fuel.

Three weeks ago, after an independent testing lab reported the fuel met the required specs, plant operator Steve Kasprzyk siphoned fuel from a barrel and poured it into the tank of his silver 2002 Volkswagen Jetta.

"It's been running great," said Kasprzyk, who is now on his third tank and getting 40-plus miles a gallon.

The test fleet is using a 20 percent blend of Fry-o-Diesel through June. One of the volunteers is Cory Suter. He figures it fits the mission of his small Philadelphia remodeling company, BioNeighbors Sustainable Homes.

Later this summer, Philadelphia Fry-o-Diesel plans to form a coalition of restaurants that commit to sending in their trap grease.

"We're trying to make this a community project," said Emily Bockian Landsburg, the company's manager of business development. On energy security and global warming, she said: "We all have a part to play."

They hope to have a commercial-scale plant making three million gallons of Fry-o-Diesel a year by mid-2008.

Read more about bio- and Fry-o-Diesel via <http://go.philly.com/earth>

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