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## Want Fries With That?

Yes, actual people are fueling cars with used fryer oil

By Sara Smith

Bruce Mortland does a lot of the same things that any other motorist with a 2001 VW Jetta would do: He flips through radio stations, he hums along to familiar songs, and he gets annoyed with other drivers.

It's what he doesn't do that sets Mortland apart. He doesn't stop at gas stations, cringe at the prices and, defeated, fuel up anyway.

Mortland's Jetta runs on homemade biodiesel, brewed in a Grove City garage. He gets his fuel at the Olde Mohawk restaurant in German Village.

Chubby thighs and high cholesterol are not the only byproducts of fried food. Unwittingly, restaurants are creating a new breed of domestically produced commodity. The oil that is left over after those fries are prepared can be used to manufacture a clean, cheap fuel usable in any vehicle with a diesel engine.

Mortland, a computer teacher at the Northeast Career Center, is one member of an eclectic threesome of tinkerers who are manufacturing their own biodiesel. Ted Tobler, a financial analyst for Ohio State University, and Kirk Smith, an IT manager for Big Lots, round out the group.

At a time when even an old oil man like George W. Bush is pitching alternative fuels, the three friends have become smitten by a fuel that seems too good to be true.

They would often meet at a bar on Sunday nights, knock back a few beers and talk about making their own biodiesel someday.

Finally, after countless discussions, Smith said, "One night we laid down the gauntlet. The following Saturday, we were in my garage mixing the first batch."

"We started with a gallon of oil and a can of lye from Lowe's," Mortland said. "We tried it out in a 5-gallon bucket. It worked."

After that successful trial run last July, the search for high-quality used vegetable oil was on.

Tobler said it wasn't easy finding a restaurant willing to part with its old fryer oil. Apparently, corporate bureaucracy rears its ugly head even in the matter of leftover kitchen gunk.



But when Mortland, Smith and Tobler met Ben Williams, the kitchen manager at the Olde Mohawk, they knew they had found a kindred spirit.

"I had known biodiesel existed," Williams

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### **My average is 52 miles per gallon**

said. "I grew up on a farm. I was excited to see them take a waste product and make something useful out of it."

The trio's relationship with the Mohawk is mutually beneficial, the guys get the oil, and the Mohawk gets its waste hauled away for free—and sells a few beers when the tinkerers come by.

Once their deal with the Mohawk was in place, they began to build the single-stage reactor, a technologically romantic name for a pair of 55-gallon drums and a maze of pipes that convert the smelly, yellow, Crisco-like substance into biodiesel.

Early on, there was plenty of trial and error.

"Most of our nights were spent failing," Tobler said. "It is easy to go to Southern California or Seattle and find people who are doing this, but in Columbus, Ohio, we faced a lot of hurdles."

Eventually, they worked out the kinks, and a 6-by-6 corner of Smith's garage became their factory.

"If we're aggressive about it," Smith said, "we can make a batch in two days."

The process of turning used fryer grease into fuel begins when it is heated and transferred into the first barrel of the reactor, where lye and methanol are added.

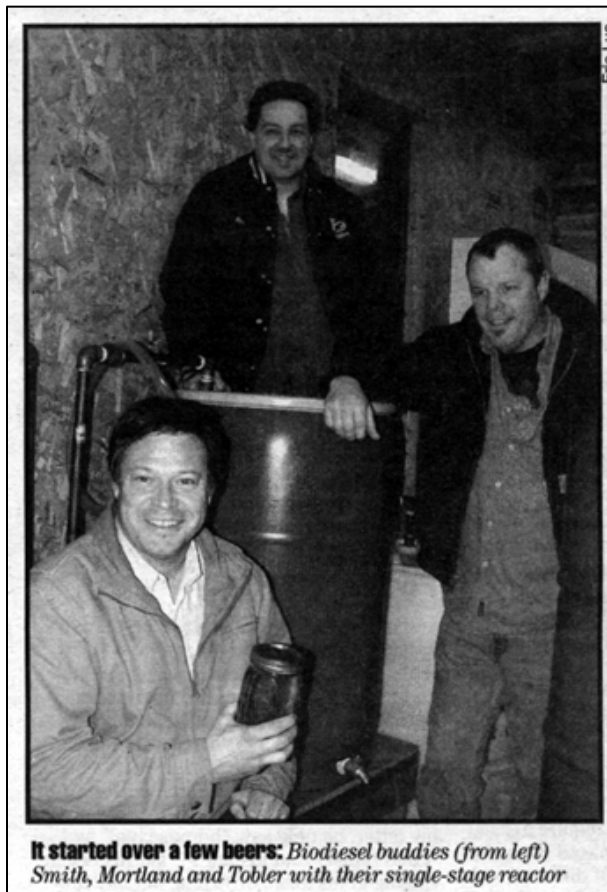
"We mix it for about an hour and then let it sit overnight," Smith said.

When they return, "What we have is glycerin, biodiesel and a very small amount of soap," Smith said. "It looks like oil and water."

The glycerin is then drained out through a spout at the bottom of the barrel, and the soapy biodiesel moves through a maze of pipes to the second barrel. Then a garden hose is hooked to a sprayer gadget engineered by Smith, and a mist of water is used to remove the soap.

The finished product is gold hued and almost fragrant.

"It smells like linseed oil," Smith said.



Mortland, Tobler and Smith have named their enterprise EasyGreen BioFuels, with the hope the operation will become a viable business as the demand for biodiesel increases.

For now, they're just trying to get everything they can out of each batch.

The glycerin byproduct makes itself useful around the Smith household. "I've cleaned various things around the garage with it. I'm going to scrub my garage floors with it. It's a good degreaser for that," Smith said.

Not bad for a modest investment. "The materials to put the reactor together cost \$600," Mortland said. "And according to our calculations, the biodiesel is costing 62 cents a gallon."

Mortland bought his Jetta specifically so he could use the biodiesel.

"I wanted to run something that was not petroleum-based," he said. The diesel-engine model cost him a little more, but he's convinced it's worth it.

"My record is 58 miles to the gallon, but my average is 52 miles per gallon."

The National Biodiesel Board estimates 25 million gallons of biodiesel were sold in 2004. That's 50 times as much as in 1999, but still less than 1 percent of the total diesel fuel used. There are optimistic estimates that biodiesel could eventually replace 10 percent of petroleum diesel.

Commercial biodiesel enterprises are more likely to begin with raw vegetable crops than vats of oil from the Olde Mohawk.

Sam Spofforth, executive director of Clean Fuels Ohio, defines biodiesel as "soybean or any number of other oils chemically processed to remove the glycerin."

"It is made from renewable resources, often agricultural resources," he said. "It's a homegrown fuel. It's produced in Ohio, so it can benefit our economy."

Spofforth said biodiesel also reduces engine wear and tear: "It's lubricating. It helps to clean out engine deposits and enhances performance."

In fact, some biodiesel experts warn that it can be too good at cleaning out an engine, at least initially. A car running biodiesel after a steady diet of petroleum diesel could end up with a clogged filter.

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And if you're not making it in your garage, commercially available biodiesel blends cost "a few cents or five cents higher than regular diesel, depending on the blend and where you buy it," Spofforth said.

Biodiesel is still scarce in Central Ohio. The Fuel Depot in Delaware County sells a 20 percent biodiesel-petroleum blend called B20.

"It is something we believe in," said owner Keith McWherter. "It is domestically grown and reduces dependence on foreign oil."

Meanwhile, Midwestern Auto Group is selling out of diesel Volkswagens, said a MAG sales representative who asked to remain anonymous.

"People do use biodiesel," said the rep. While VW will warranty only a 5 percent blend, the rep said he knows of a salesperson who used 100 percent biodiesel in a 2003 Jetta wagon: "It ran better with the full blend and got better fuel economy."

For Tobler and his two friends, it adds up to the most obvious answer to importing foreign oil.

"Biodiesel is ready to go," he said. "No new cars, no new infrastructure. It is a no-brainer solution."

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