



TWOTANKS—Jesse Bach's 1986 VW Golf doesn't look much different than any other diesel under the hood. It's in the trunk where the change shows. The red tank holds his chief fuel—used vegetable oil collected from restaurants.

He collects oil in a jug like the one shown here and allows it to settle for a few days. After the oil is run through a filter, it's ready to power his car—right past the gas station.

DAVID GREEN/Observer Photo

There's no need for the gas pump when you're **Fuelin' on French Fries**

By DAVID GREEN

Would you like fries with that?

Jesse Bach may not care for any himself, but he encourages the consumption of fried food. After all, this is what powers his car.

Last May, the Morenci Area High School social science teacher paid \$700 for a Greasel Conversion kit. It took about seven hours, with a little help from his father and brother, to convert a 1986 Volkswagen Golf diesel to a vegetable oil burner. Living in Michigan, he still needs a little diesel fuel to get it going, but a tank of that lasts for weeks. And the vegetable oil? That's free for the asking.

Converting to vegetable oil takes the diesel engine back to its beginnings at the turn of the century.

"Rudolph Diesel originally designed the motor to run on peanut oil," Jesse explained.

But that was about the time that the development of petroleum fuels was taking off. After Diesel's death in 1913, his colleagues converted the engine to run on petroleum-based fuel. The vegetable oil idea was pushed aside and petroleum-based fuel became known as diesel.

Rudolph would be proud of the work of Charlie Anderson, owner of Greasel Conversions in Missouri. Anderson is working hard to bring the diesel engine

back to its roots.

"There weren't a whole lot of modifications," Jesse said. "You have to cut some fuel lines and some coolant lines."

And instead of heading for the gas station, you drive to a restaurant to relieve them of some used cooking oil.

Anderson cautions against visiting fast food restaurants due to the poor quality of oil. Small, independent establishments will provide better fuel. Jesse collects his oil from the Morenci Dari-Ette, Cruisers Drive-In in Fayette, and HOFFIE's outside of Adrian.

"They have to pay someone to take it away so they're glad to get rid of it," Jesse said.

If there's a downside to the vegetable oil way of driving, it has to be the process of collecting the oil, letting it settle, running it through a filter, then pouring it into a fuel tank in the trunk of the car.

But that's it. After that it's nearly cost-free travel, and Jesse does a lot. He put about 10,000 miles on his Golf since school got out last spring. Make that 10,000 trouble-free miles.

How it works

In brief, the system works like this.

The car is started with diesel fuel. As the engine warms, heated coolant is directed through a hose to the oil tank in the back. The heat is collected and warms the vegetable oil to create a

viscosity similar to diesel fuel. When it's warm, a dashboard switch trips a fuel selector and the engine begins to burn oil instead of diesel. The change-over can be made while driving.

Jesse still remembers the first time he flipped the switch.

"When I switched it over, I expected that something would happen," he said. "But there was no big difference. It was somewhat anti-climatic."

Milage and engine power are said to decrease by about five percent, but it's nothing noticeable.

"I just know that because there's been some research on it," Jesse said.

The Golf gets up to 50 miles per gallon with diesel, so losing five percent with french fry oil isn't a big loss.

There's slightly less carbon dioxide emitted, compared to diesel, and a little more nitrous oxide. After the initial startup, there's no more of the smelly, black cloud of soot associated with diesel.

From an environmental standpoint, the Greasel conversion fits right into the Reduce, Reuse, Recycle routine that was drummed into Jesse's head during his younger days at Morenci Elementary School. The carbon dioxide released in burning the oil isn't adding to that already in existence, Jesse said, unlike burning fossil fuels and releasing new

quantities into the air.

There are limits to the use of old cooking oil, however.

"We couldn't produce enough vegetable oil to run all the diesel vehicles on the road," Jesse said.

That's where biodiesel comes into play. Although soybeans are touted as a good biodiesel fuel, they're actually on the bottom of the list for efficiency, from what Jesse has read. Several crops are better, but they all pale to algae.

It's not only the VW Golf that's traveling cheaply. Jesse has heard of a semi-tractor that's racked up 200,000 miles. Some trucks are equipped with a filtering device so they can just keep on traveling from restaurant to restaurant as needed. Charlie Anderson's father drove from Alaska to Missouri on about two gallons of diesel fuel.

"The use of vegetable oil for engine fuels may seem insignificant today," Rudolph Diesel said in 1912, "but such oils may become in the course of time as important as petroleum and the coal tar products of the present time."

With the price of crude oil hitting a record high again last week, Diesel's words may be growing in importance.

Jesse's already in line with Diesel's principles. You'll know it by the smell of his exhaust—that familiar odor of fries and burgers.