Farm Talk

Jerry Webb

Sunflower Power

Sunflower power — that's what they're calling it. A new fuel for farm tractors that's produced right on the farm.

A British company has built the machine to produce it. A North Dakota farmer has one of them, and he's already making his own tractor fuel.

The current issue of Farm Show magazine tells about Charles Bahm, described as the nation's first farmer to own and operate a farm-size screw press for turning sunflowers and soybeans into tractor fuel. This enterprising gentleman is running his diesel tractors this spring with sunflower power.

The oil extractor, manufactured by Simon-Rosedowns, is called the Mini-40 Screw Press. It's powered by a three-horsepower electric motor and sells for $7560 F.O.B. Chicago. The unit will make about five gallons of fuel per hour.

Here's how it works.

Sunflower seeds are gravity fed into the machine's hopper and the screw press mechanism separates the meats and shells from the sunflower oil. The oil is collected on one side of the machine, while the meats and shells are ground into meal and collected on the other side. The oil is then put through a filter and into a fuel storage tank, where it's used as is in the North Dakota farmer's diesel tractors.

The meal is used for livestock feed. Bahm says it contains about 30 percent protein, so he's mixing it with ground wheat and barley straw to maintain his beef cow herd.

The farmer feels confident he'll have no long-range problems with his diesel tractors running on sunflower oil. With minor adjustments and no modifications, they seem to be doing fine. The only trick in burning sunflower oil, he says, is to run an engine underload and run it hot.

Researchers at North Dakota State University are using a Japanese made extractor for a wide variety of sunflower oil experiments. They feel it's still too early to start promoting sunflower power for the farm.

"There are still too many unanswered questions before you start pouring sunflower oil into your diesel-powered tractor. Wait until more research results are in, particularly on the long term effect sunflower oil might have on engine and fuel system parts," advises agricultural engineer Dr. George Pratt. He also suggests that a farmer who wants to experiment with this technique should buy a few gallons of sunflower oil first, just to see how he gets along with it.

The researchers have been burning pure sunflower oil with generally good results. It's a better fuel than soybean oil, they say, and it contains about 90 percent of the energy value of number two diesel fuel.

The researchers figure that if 75 percent of the oil can be extracted, 1500 pounds per acre of sunflower seed would return 55 gallons of oil per acre. A farmer would need only eight percent of the oil produced per acre to power the equipment to produce the crop.

Back in the good old days of horse power when farmers produced their own energy, it took about 30 percent of the crop just to feed the horses.

Other farmers around the country are moving ahead with plans to burn soybean oil, peanut oil, sunflower oil, or whatever else they can get to replace diesel fuel. It makes a lot of sense to cut out the middlemen and the Arabs, and the possibility for energy self-sufficiency on the farm is fascinating.

Farmers have used wind power for generations to replace mechanical and other power sources for pumping water and doing other tasks. And there's a great resurgence of interest in wind power.

Some farmers are producing alcohol from farm-produced grains and using it as tractor fuel. Others are making methane gas from livestock manure and using that to power stationary diesel engines that produce electricity. A 700-cow dairy operation near Gettysburg, will actually be producing more electricity than is needed on the farm and will be selling it back to the power company.

The question of producing energy on the farm is an important one. Obviously it's no longer a matter of can it be done, but more how successfully can it be done and at what price to the rest of the economy?

If large chunks of agricultural land are devoted to energy, they'll no longer be available to produce food. And that's a delemma the policy makers are going to have to consider very carefully during the next few years.

Farmers are already diverting some acres to energy production. Some large companies are currently in the gasohol business, and that's diverting some agricultural acres. Plans are on the drawing boards for a lot more of this kind of activity.

In the future, it won't just be a farmer producing his own energy. It's more likely to be a farmer producing energy for the rest of us. And that has serious implications for our future food supply.