

DIY On-Farm Fuel Production

When Roger Rainville decided to raise sunflowers for on-farm fuel use, he had to figure out how to harvest them.

"Nobody around here had a sunflower header and we couldn't get sunflower pans to fit older standard combines," says Rainville, a Vermont farmer. "You don't buy a special combine to harvest 30 to 40 acres."

Rainville removed the reel from a model 6660 Case combine. He fabricated V-shaped pans using wood 2 by 4's for frames that he covered with 1/4-in. hard plastic. He also boxed in the header to contain sunflower heads from the 6 to 8-ft. tall stalks. The Case was particularly easy to attach pans to, he says.

"It had angle iron supports underneath the header where I could bolt the pans," explains Rainville. "It only took \$13 worth of materials, and they worked great."

Once Rainville had the sunflowers combined, he ran them through a Chinese oil press. The meal was then run through a pelletizer he bought from the same source.

"I read about Chinese presses in FARM SHOW and talked to the farmers who had them," says Rainville. "Mine will do 8 tons of oilseed in 24 hrs. It's great when you need a lot of oil in a hurry."

Rainville works closely with the University of Vermont doing experimental oil seed plots, including sunflower and canola, as

well as other crops like wheat and barley. This year he will have more than 3,000 plots on the farm.

A former dairy farmer, he now feeds out heifers with the pelletized oilseed meal and uses the oil to fuel tractors and other equipment for all of his field work. While he has been using biodiesel at a 50 percent level, he plans to move to 100 percent in his tractors this year.

Since installing his Chinese press, the university has bought and installed a smaller, but fully automated German-made oilseed press. While the Kern Kraft press can be set to run 24/7, it will only do about 1,000 lbs. of oilseed in a 24-hr. period. Rainville says his Chinese press does a better job on sunflowers and costs less. However, the Kern Kraft requires less labor.

"The German press takes only about half an hour of labor a day and works with gravity-fed seed," he says.

The university has also installed an automated biodiesel processor from BioPro. "You put the oil in, add the methanol and hydroxide to their compartments and hit a button," says Rainville. "Come back 12 hours later, and it's done."

While Rainville was one of the first in his area to try oilseeds for on-farm fuel, interest is growing. "We started with five of us growing oilseeds, and now there are more than 50



Roger Rainville made his own sunflower header by removing the reel from a Case 6660 combine and attaching homemade, V-shaped pans on the header.



He runs the sunflowers through a Chinese oil press (left) and then runs the meal through a Chinese pelletizer.

doing so in the area," he says. "Even at \$2.40 diesel prices, canola is competitive. Input costs run \$135 per acre, and we can harvest \$200 worth of straw for bedding and up to 110 gal. of oil per acre with yields of a ton

and a half of canola."

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"Made It Myself" Truck-Mounted Chopper Box

Wes Roberts couldn't justify the price of a truck-mounted chopper box. However, after seeing how much faster a neighbor could haul silage with a truck, Roberts knew he needed one.

"He was hauling three loads for every one that I did," recalls Roberts. "We had four big wagons, but by the time I was heading home with one, he was coming back for another load. I couldn't keep up."

Using his neighbor's unit as a template, Roberts converted one of his self-unloading wagons. He cut the pto shaft off and slipped on a hydraulic motor salvaged from an auger on an old gravity box. Control valves for reverse, stop and bypass from the gravity box auger were also used.

"We put some steel uprights in place to stiffen the side we would be dumping into," explained Roberts.

A truck cab and chassis purchased from another neighbor fit the bill perfectly. Its frame had already been doubled, so Roberts didn't need to strengthen it. Even the frame rails on the truck lined up with the frame of the wagon bed.

"I welded some pieces of steel even with the top of the frame to set the wagon on and then welded another piece on top of that to keep the box from moving around," says Roberts. "Then I drilled holes through the bed and bolted it to the truck frame."

Roberts paid only \$1,500 for the truck and another \$300 for steel to reinforce the sides. Even including the cost of the wagon, which he already had, his chopper box truck cost considerably less than purchasing a new one.

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Using a neighbor's unit as a template, Wes Roberts converted a self-unloading wagon into this truck-mounted chopper box. Signs on side of box promote milk.

Stihl Introduces Battery-Powered Tools

Stihl's gone quiet with a soon to be introduced lithium-ion, battery-powered hedge trimmer. The HAS 65 is expected to be the first in a new line of quieter, exhaust-free lawn tools.

FARM SHOW saw the new hedge trimmer at the Stihl exhibit at the National Farm Machinery Show, Louisville, Ky. It was well balanced and handled smoothly.

With the official introduction still months away, company officials refused to provide details. However, the demonstration unit at the show was powered by a 36-volt, 2.2 amp-hour lithium-ion battery. Stihl has already introduced a similar battery-powered trimmer in Europe with the same size battery.

Like the HAS 65, the European version weighs about 10 lbs. and operates for 30 to 45 min. on a single charge. It delivers 3,000 strokes per minute and can cut through material up to 3/4-in. dia. All specifications are similar to current gas-powered trimmers in the North American and European markets.

According to one company source, if the North American product introduction is successful, other conversions to quiet, exhaust-



Stihl's new lithium-ion, battery-powered hedge trimmer offers quiet, exhaust-free operation.

free operation are expected to follow soon. Contact: FARM SHOW Followup, Local Stihl Dealers or www.stihlusa.com.

Calf Carrier For One-Horse Buggies

An easy-to-add-on aluminum platform lets Amish people and anyone who uses a one-horse buggy haul a calf or other cargo, on back. The 24 by 46-in. powder-coated unit is designed to hook over the top of the rear axle spring for limited suspension. It extends forward under the buggy to provide cantilevered support.

The extruded 5/8-in. aluminum tubing platform weighs only 18 lbs., but can support a 300-lb. load.

A special "calf cage" for hauling small livestock and pets is designed to fit on the platform. It measures 3 ft. high, 24 in. wide and 42 in. long and folds down flat when not in use.

"We use it to haul calves, sheep, goats or whatever," says Malva Nisley, developer of the carrier system. "This lets us get by without having to have a \$1,000 hack for hauling livestock or hire a trucker."

The carrier platform is priced at \$220. The cage is priced at \$140. A second smaller wire enclosure has 16-in. high sides, but no top and is available for \$49.65. It has an optional tarp priced at \$21.50.



Add-on aluminum platform lets anyone with a one-horse buggy haul a calf or other cargo on back.

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