Ditch Rake Simplifies Roadside Baling

By Lorn Manthey, Contributing Editor

Home-built ditch rake brings mowed ditch hay into a windrow on side of road for baling. It'll handle a 10-ft. swath.

"My brother bought a brand new Deere baler a few years ago to put up ditch hay, but he didn't want to ruin it by driving in those ditches," says retired Iowa farmer Virgil Davis. "So I used an old Deere grain elevator for a frame and made a special rake that brings the road bank hay into a windrow on the side of the road."

Davis attached the rake frame to the 3-pt. of his brother's tractor, using a pivot mounting and an auxiliary cylinder so the outside of the rake can lower into the ditch. The cylinder can also raise the rake to almost vertical to avoid mailboxes and other obstacles. Hay was pulled up the bank to the road with spring teeth from a drag attached to the elevator paddles.

"The ditch rake worked so well that I built 2 more, one for a nephew and one for another fellow who makes a lot of hay for horse owners," says Davis. "He was baling one day with his and a guy passed him on the road, stopped, backed up, then drove by again. The guy went to the Deere dealer in town and said he wanted to buy a rake like the one the guy was using outside town. When the dealer said 'they made that rake,' he couldn't believe it."

Davis has since made a 4th rake, this one for his own use. It uses some parts from an old IH field cultivator, pipes from a spring tooth harrow, spring teeth from a drag and a hydraulic motor from a 6600 Deere combine. The rake bars attach to end plates made from 5 planter disk openers. One round blade is in the center and 4 others are cut apart and welded to the center disk to mount each bar. Some of the teeth are from an actual rake and others are from a field cultivator.

The frame mounts to the 3-pt. on Davis's 3020 Deere, which raises and lowers it about 18 in. As with his other rakes, an auxiliary cylinder lowers the outside of the rake into the ditch and raises it to vertical. A small gauge wheel near the tractor and another on the outside edge keep the teeth from digging into the ground and bringing gravel into the windrow.

Power to operate the rake comes from the hydraulic motor that used to run the platform reel on Davis's 6600 combine. He configured the variable rate control system into his setup so he can increase or slow the rake speed to match hay conditions.

Because the rake mounts to the 3-pt. of the tractor, his 14T Deere baler, which he paid just $600 for at auction, attaches directly to the tractor hitch. Says Davis, "this is a great setup for ditches, and it also will work in a regular field. The rake will handle a 10-ft. swath from a diskbine and bring it into a nice, tight windrow in front of the baler.

Rake can be hydraulically raised to almost vertical to avoid mailboxes and other obstacles.

Davis says he doesn't have a lot of money invested into parts because just about everything comes from old equipment he has around his farm. "They're not too hard to build, so I might even consider building others if someone is interested," Davis says.

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Geothermal Furnace Runs Off Well Water

You can cut your heating costs by using water from your well. Well-Connect from Terra Caloric offers a simple-to-install solution to high heating and air conditioning costs in rural areas. You can hire out the installation or do it yourself.

"Do-it-yourself installation was a primary consideration in our design of the Well-Connect heat pump," says Chris Lehman, Terra Caloric. "Installation is much more like installing a washing machine than a conventional geothermal heat pump. It doesn't require any specialized tools, skills or knowledge."

The Well-Connect heat pumps can be used as stand-alone units for cabins or small houses with or without ducts. They also work well in a hybrid system with conventional heating and air conditioning units. Unlike most hybrid systems, where the heat pump shuts down when the furnace kicks in, Well-Connect continues to operate.

The heat pumps are available in 1.5-ton (18,000 btu's) or 2.5-ton (30,000 btu's) per hour models. The smaller model is priced at $5,893, while the larger model is priced at $6,611. Both qualify for the 30 percent federal tax credit.

Unlike other geothermal systems, the Well-Connect requires no in-ground loops. It uses well water at a rate of about 2 gal. per min. Outflow water is returned to the exterior soils.

"For a stand-alone system, it is simply hose for water in, hose for water out, plug it in and adjust the thermostat," says Lehman. "Of course, you have to consider water supply, discharge details, ducting, etc. We are here to walk our users through any questions."

Lehman reports no problems with the discharge system, even in Michigan winters. "As long as they are installed at a slight angle with an air gap at the end, they drain out when the unit shuts off," he says. "We've operated them in about every scenario without a problem."

Most installations are completed in a day's time. Well-Connect heat pumps require 220-volt power in addition to the supply and discharge water lines. The company estimates professional installation costs range from $1,500 to $2,500 depending on ducts or no ducts and other costs. A do-it-yourself installation typically requires from $300 to $700 in materials.

"During a typical upper Midwest heating season, our smaller model will provide about 80 million btu's, offsetting about 1,000 gal. of propane burned in a 90 percent efficient furnace," says Lehman. "Our larger capacity unit will provide more than 130 million btu's, offsetting more than 1,600 gal. of propane."

Depending on local rates, he estimates a heating cost reduction of between 50 and 70 percent from propane costs. Lehman estimates a 75 percent reduction from electric baseboard heating costs. The same system in both models provides efficient air conditioning in the summer.

"We've had our heat pumps operating in Michigan homes for more than 5 years now, and the performance and owner satisfaction has been overwhelmingly positive," says Lehman. "As we've begun expanding our market beyond Michigan, we've found that do-it-yourselfers are vital to getting our machines out to new areas."

Geothermal furnace cuts heating costs by using water from your well. It can be used as a stand-alone unit or alongside conventional heating and air conditioning units.

Mention FARM SHOW for possible special offers when you call.

Contact: FARM SHOW Followup, Terra Caloric, P.O. Box 307, Alpena, Mich. 49707 (ph 989 356-2113; info@terracaloric.com; www.WellConnectGeo.com).

Mini Presses Produce Clean Oil

You can make your own food grade oils for either sale or personal use with Farmet Farmer oil presses that will process up to 1,000 lbs. of oil seed crops per day. The presses are Czech-built, meeting the highest international standards.

"The presses are novel processing units with both pressing and oil filtration in one compact system," says Robert Byrnes, Nebraska Screw Press (www.nebraskascrewpress.com; ph 402 307-0280). "They take up very little space and are easy to operate. They operate without supervision once they are started and need only occasional checks."

Byrnes has worked in the oil seed press business for more than 10 years, initially in biodiesel systems (Vol. 35, No. 5). In recent years he has worked more in food oil systems. He says the ease of use of the Farmet systems caught his eye.

"We were looking for a plug and play system that required minimal labor and expertise," says Byrnes. "Years ago we got into Chinese cold press systems, but they were not very efficient. Presses using heat were more efficient, but they changed the nutritional and economic value of food grade oils. These use extreme pressure to efficiently remove the oils."

Both models work similarly, with a funnel-shaped seed hopper and filtered oil pail on the top shelf of the support framework. Seeds pass through a hopper into the press on the middle shelf. Meal passes out the end of the press into a bucket in front. Oil drops down into a bucket with an overflow to a second bucket and from there to a third bucket by means of a second overflow.

"As the oil passes through the buckets, sediments and remaining solids from the press settle to the bottom," explains Byrnes. "When oil reaches the third bucket, a pump pushes it to the filtration unit on the middle shelf next to the press. From there it is pumped to the filtered oil container at the top."

A spigot on the container allows filtered oil to gravity flow into smaller containers or even a 55-gal. barrel.

The systems are priced at $11,295 for the Farmer 10 and $14,310 for the Farmer 20. Byrnes acknowledges the expense, but points out that a similar grade press and filtration unit would cost even more purchased separately.

"Buying all the food grade components separately would cost much more," he says. "These are high quality with stainless steel filters and food grade plastics. Farmet is just getting started in the U.S., but has been selling into Russia, Europe and North Africa since 1994."

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Farmet mini oil press lets you make your own clean, food grade oil.