

“Mud Rx” Keeps Mud Out Of Gauge Wheels

After years of cleaning mud out from between opener disks and gauge wheels on their air drill planters, Robin Weisz and Ted Juhl solved their problem. They came up with a gauge wheel that keeps the disk clean.

“Ted farms along the Red River, and I no-till in rocky, abrasive soils west of the valley, but we both struggled with mud,” says Weisz.

For years they tried and compared notes on different scrapers and wheel options. Finally they developed a design and, with the help of a 3D printer, made a prototype. After several modifications they perfected a design that keeps the disk clean without wear on the tires. They found a fabricator and began making and selling their invention.

The rubber-covered, ultra high molecular weight polyethylene scrapes disks clean. The rigid design also eliminates the flex that wore out OEM gauge wheels. They named it the Mud Rx.

“The product has very low friction and very low wear,” says Weisz. “We expect it to have 5 to 10 times the life of an OEM wheel.”

Although initially developed for their Deere planters, they now have units that fit Kinze, AGCO White and New Holland. They’re working on an insert that will fit International planters. Weisz and Juhl are currently selling them direct.



TR Solutions says its new “Mud Rx” keeps gauge wheels from packing with mud.

“We’ve priced them at \$45 each with a discount for orders of more than 100,” he says.

Contact: FARM SHOW Followup, TR Solutions, 2639 1st St. S.E., Hurdsfield, N. Dak. 58451 (ph 701 805-1860; trsolutions@polarcomm.com).



Lester Adelman used a round corn crib panel to make this safety cage that surrounds the ladder on his grain bin. Brackets run from ladder to angle iron attached to cage.

Ladder Cage For Grain Bin

Lester Adelman, Rice, Minn., made a safety cage for the ladder on his grain bin from a round corn crib panel.

“I bent the panel around a 50-gal. barrel to get the nice round shape, and then cut it to length. A 1/2-in. dia. steel rod was bent and then welded to the top and bottom of the cage to help stabilize the cage and to round off the sharp edges where the panel was cut.

“We welded angle iron to the cage and used some strap iron to bolt it to the sides of the ladder, using existing holes. The angle iron stiffened the cage so it’s very solid.

“I feel a lot more secure climbing up and down the bin with this cage in place.”

Contact: FARM SHOW Followup, Lester Adelman, 3225 125th St. N.E., Rice, Minn. 56367 (ph 320 393-2741; ladlmm@jetup.net).

This Dairy Farm Turns Manure Into Diesel Fuel

California’s Scott Brothers Dairy Farm has developed a unique way to make sulfur-free diesel fuel using manure from more than 1,100 head of dairy cows.

The idea was born out of necessity in 2007, just before the family farm marked its 100th birthday. At that time the Scott Brothers were faced with new regulations from California water quality officials that indicated they had the “potential to contaminate or degrade water quality” with animal waste. “Even if you have just the potential to contaminate, you must cease to contaminate,” Bruce says. So organic farming, using natural fertilizer, was basically banned. They were faced with a difficult decision and few options, and none of them would result in saving both their dairy farm and the family creamery just 50 miles away.

Scott says their options were to either go out of business, move the dairy, or add cost by hauling the waste to another site out of

the county or out of the state altogether. None of those were feasible. Instead, they get together with Agricultural Waste Solutions, a local company, and the Dairy was able to get permits to farm for the next 5 years with a promise they would work on real solutions to the waste problem.

They built a portable pilot-sized diesel fuel production system on the farm and by April of 2015 they had their first batch of diesel fuel from dairy cow manure, proving the process could work.

Stephen McCorkle, CEO of Agricultural Waste Solutions, says the process turns manure into fuel and several other useful co-products, with zero waste and even meets and exceeds the toughest emissions standards of Southern California.

The process first separates solids from liquids, which leaves about 2 percent of the solids in the water. This nitrogen-rich water can be used for irrigation on the farm



Jerry Buskirk adapted an old 18 hp, 2-cyl. Kohler engine to power this home-built tractor. It has 2 flywheels from an old Economy “hit and miss” engine.

His Shop-Built Tractor Looks Factory Made

“One day I looked around my shop and at the junk pile and couldn’t believe all the spare parts I had laying around,” says Michigan handyman Jerry Buskirk. “I realized I had enough stuff to build my own tractor.”

Buskirk says he must’ve done a nice job on the finished rig because people tell him that his home-made tractor looks like it was built in a factory. The 7-ft. long and 4-ft. wide homemade rig is painted green and yellow to match Deere colors. “Everyone who sees it asks what model it is, and I just tell them it’s experimental,” Buskirk says with a laugh. He drove it in several parades in the summer of 2014. “It has a top speed of about 15 mph, so I can keep up with anyone out there,” Buskirk says.

Buskirk built his home-made gem from the ground up. He made the frame out of 2-in. channel iron that he doubled and welded together for extra strength. The transmission was salvaged from a Model FG Speedex, a high-clearance garden tractor that was built in Ravenna, Ohio. He adapted an old 18-hp, 2-cylinder Kohler engine to power it. The engine has 2 flywheels from an old hit and miss Economy engine. The motor doesn’t have a radiator, so Buskirk built a grill out of steel mesh to give the tractor a more authentic look.

Buskirk used 42-in. spoke wheels on the rear and 18-in. spoke wheels on the front. The tractor rides on ribbed rear tires and smooth rib front tires. “I wanted to make the tractor look somewhat like an old Deere, so I made a nice hood out of sheet metal, with a smooth top 12 in. wide and 45 degree angled sides,” Buskirk says. The seat, steering wheel and steering mechanism are from an old Deere



Tractor rides on ribbed rear tires and smooth-rib front tires.

tractor.

“I’ve had the tractor in several parades and people really enjoyed looking at it,” Buskirk says. The tractor has a small fuel tank under the hood, a 12-volt battery, electric start and floorboards to round out its authentic appearance. Buskirk uses it around his yard for summer jobs, including grass mowing with a 60-in. trail mower that he built from a 3-pt. machine. For that project he installed a 15 hp Briggs motor with a vertical motor in the center of the platform and made a carriage with 4 wheels so the mower glides easily over the lawn. He uses the two homemade rigs to mow his own 1½ acre yard and also mowed a 20-acre field for the Big Rapids Antique Farm and Power Show. “The 3-blade mower does a nice job, and my home made tractor works great pulling it.” Buskirk says.

Contact: FARM SHOW Followup, Jerrald Buskirk, 20924 175th Ave., Big Rapids, Mich. 49307 (ph 231 796-2834).

without being too potent, protecting against major runoff problems. The water can also be further treated to create drinking water for the cows.

The combined solids are gasified in a sealed chamber that makes a gas of hydrogen and carbon monoxide. The gas then goes into a Fischer-Tropsch module, which converts it into diesel fuel and a high grade wax. The wax can be sold to refineries to make fuel such as kerosene, jet fuel, or heating oil. Another by-product is biochar, which is full of nutrients for the soil and is already broken down and ready to be soil applied. The structure of bio char also acts like a living sponge in the soil and actually allows a crop to grow on about 40 percent less water, which is especially important in California.

The current pilot project produces one barrel of diesel and two tons of biochar a day. Equipment is housed in a portable structure.

Scott says the diesel burns just like most

of today’s clean technology diesel. It smells like regular diesel from the pump, but without the sulfur. The dairy can use the diesel they produce around their farm. It would have to be sold to a refinery to make over-the-road diesel.

The Dairy hopes that funding for a larger, commercial scale and fully automated system may soon be secured. This system would produce 10 barrels of diesel a day, 20 tons of biochar, and still produce zero waste. Increasing to that level could potentially lead to a whole new renewable diesel commercial market.

Contact: FARM SHOW Followup, Scott Brothers Dairy, 12006 East End Ave., Chino, Calif. 91710 (ph 909 270-2504; www.scottbrothersdairy.com); or Stephen McCorkle, Agricultural Waste Solutions, Inc., 4607 Lakeview Canyon Road, no. 185, Westlake Village, Calif. 91361 (ph 805 551-0116, www.agwastesolutions.com).