

## Electric Tractor Handy For Many Jobs

Since converting a Massey Harris tractor from gas to solar power, Drew Gailius has modified and replaced implements and tools to take advantage of the electric power stored in the tractor's eight batteries. He uses an inverter to run an electric chainsaw to cut firewood, for example.

The Canyon, B.C., farmer and his wife, Joanne, grow organic root crops and grains including Khorasan and red fife wheat, spelt, rye and buckwheat on their 40-acre farm, and try to use environmentally friendly practices. So switching to a solar-powered tractor seemed like a natural option, especially when Gailius had the opportunity to get the old 1950's Massey Harris for free.

"The size was right for what I wanted. The engine was not an integral piece of the framework for the tractor so it could be removed, and the front axle would still be in place," Gailius explains.

Still, he had to disassemble much of the tractor and engineer some parts for the 48-volt DC motor and transmission. The motor is connected by a cog belt drive to the driveshaft and is controlled by the former gas pedal. He spent about 9 months of his spare time and \$5,000 to modify the tractor, including the eight 6-volt, deep cycle batteries, three 250-watt solar panels, and a hydraulic pump to raise and lower a new 3-point hitch.

The panels are mounted horizontally on an overhead frame and provide welcome shade for the driver.

"On the upside, the electric tractor is super user-friendly, quiet, no smoke and maximum torque from 0 rpm's up," Gailius says. "On the downside is the range, which will be improved as battery technology advances."

It meets his needs so far, allowing him to run the tractor the better part of a day. He



Drew Gailius converted this old Massey Harris tractor from gas to solar, replacing the engine with a 48-volt DC motor and transmission. Three 250-watt solar panels mount horizontally on an overhead frame.

kept the tractor's gears so he can shift to low gear for heavy work.

"Virtually the only maintenance is the batteries, which require topping off with distilled water and keeping them clean," he adds. When not in use he has them on a trickle charger.

Gailius uses the electric tractor for an assortment of jobs: hauling manure, raking hay, pulling a 2,600-lb. roller, and using a toolbar for hilling, cultivating and weeding in a one-acre market garden.

"It has far exceeded my expectations, and I find that every year I seem to use our diesel-powered tractor less," he notes. "Electrics have a lot of advantages, and we really need to explore them. Working toward



Gailius uses the tractor for a variety of jobs, including raking hay and spreading manure.

better electrics will require R&D; the only way to do that is to use them. Powering them by renewables is the thing that will get us into other forms of energy use."

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## Zero-Turn Mower Makes Great Barn Scraper

Dave Wampler cleans out his dairy barn fast with his zero-turn scraper. The modified mower has the speed and maneuverability that makes barn cleanup easy.

"Cleaning these areas has always been a 2-man job, and now one person can do it," says Wampler. "Making a zero-turn scraper is something I had wanted to do for years."

When he and his brother Keith replaced a zero-turn Simplicity with a new mower, Wampler had the chance. The older mower had started using a lot of oil, so he went to work on it, replacing the head gasket and also stripping away the mowing deck.

"I used a lot of the linkage for the mowing deck, cut a couple of notches in the front frame and swung it out front," says Wampler.

"I mounted a half truck tire trimmed for scraping to the linkage and cut a slot in the platform deck for a foot pedal. When I push it down, the linkage raises the tire scraper up."

Wampler says the zero-turn goes where they can't take their tracked skid steer with its scraper blade. The housing area for the cows has rubber mats.

"If we go in there with the skid steer on tracks, it will rip them up," says Wampler. "The zero-turn is no problem."

He says the scraper has been a real labor saver, which was extra valuable when his brother had shoulder surgery.

"We use it every day, sometimes twice a day. It really helps out, and it only uses about



"It has enough speed and maneuverability to make barn cleanup easy," he says.

6 gal. of gas a month," says Wampler.

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