

Farm-Size Water Treatment System Produces Better Crops

Tim Renger, who farms near Bancroft, Iowa, says the water treatment system he put together on his farm can produce about 400 gal. of mineral-free and neutral pH water per hour that he uses for spraying and fertilizing corn, soybeans and alfalfa. "I've learned over the years that water purity and pH can make a big difference in how well the chemical products will mix and how effectively the plants will uptake that mix," Renger says.

A meticulous farmer who looks closely at details that many people would gloss over, Renger says their well water is very hard with a high pH, and "that's a combination that doesn't produce the best results with herbicide and fertilizer applications."

Renger says that hardness minerals like calcium, magnesium and iron can quickly attach to the herbicide molecules so the herbicide and water don't mix properly. The higher pH reduces herbicide effectiveness so it takes higher amounts to kill the weeds.

Renger drew up plans for his system and had his cousin, who owns a plumbing and heating business, specify and pull the components together. Water from the well hydrant goes into a conventional water softener with two regeneration tanks. Two tanks were needed so the system has enough capacity for continuous operation. After the softener water goes through a large capacity

micron filter to remove any additional mineral impurities. The next element is a Reo-Pure™ commercial reverse osmosis system that can output up to 400 gal. per hour. This pressurized system removes salt and other impurities from the water as it passes through a large membrane. Output water is 99.9% mineral and salt free with a pH in the high 5's, which is ideal for effectively mixing herbicides and fertilizers for farm crops.

His Reverse Osmosis (RO) system mounts on a wood pallet so it's easy to move inside a heated shed for winter. It removes about 99.9 percent of minerals and lowers the pH from the high 7's to the mid 5's. "With this system we're creating water that makes the chemicals more effective. We can use smaller amounts of chemicals and get the same effectiveness as higher rates. We have healthier crops, because using less chemicals is better for the growing plants."

Renger says the system operated without a hiccup in 2012. "We have storage for 16,000 gal. The system is plumbed directly into the storage tanks and has an automatic shut-off. The system cost about \$5,000, but Renger figures it will pay for itself in two to three seasons because he uses less chemicals for spraying. The softener uses 100 lbs. of salt for 3,000 gal. of water.



Farm-size water treatment system can produce about 400 gal. of mineral-free and neutral pH water per hour.

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Portable Electrified Grazing Corner Post

Vernon Hochstetler wanted a better corner post for the electrified fence he uses in his grazing system. So, the LaGrange, Ind., farmer came up with a post that bolts to the wheel rim of an ordinary tire.

The system consists of a 3/4-in. dia. steel pipe with a swiveling "pigtail" that holds wire at a 32-in. height, and a plastic handle on top.

To move the unit he uses the plastic handle to roll the unit to a new location with the electric wire still attached to the pigtail.

"It's really easy to use, and the entire pipe is electrified which keeps cattle from bothering it," says Hochstetler. "It's much easier to move than metal or wood posts, and also more stable than a step-in post. Everything on it's 'hot' except for the tire and plastic handle. As I roll the tire the pigtail swivels around the pipe, which keeps the wire from getting tangled. The tire provides a center of gravity that keeps the pipe stable at all times.

"I had been using flimsy step-in fiberglass corner posts, but they're built too light to withstand the pull of the wire, easily bending over.

"I built my first post 3 years ago and now have 5 of them. At first my neighbor was skeptical about how I could move the pipe without getting shocked, so I let him borrow it. Once he got it out in his pasture it wasn't long before he built his own."

The pigtail is made from 1/4-in. dia. steel rod and is welded to a 1-in. dia. metal nipple that's free to swivel around the pipe. The pigtail swivels on a metal coupler located below and is held in place by a collar on top. The plastic handle consists of a length of plastic pipe. The bottom of the handle is connected to a 3/4-in. pvc male fitting.

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Electrified steel pipe with a swiveling pigtail holds the wire and has a plastic handle on top. Hochstetler uses the handle to roll unit to a new location with the electric wire still attached to pigtail.

Simple Portable Electric Fence Posts

Jack Dueck, Calgary, Alta., recently sent FARM SHOW photos of homemade portable electric fence posts that his son Ron developed.

"It's a simple but inexpensive and handy idea," says Dueck. "It's basically a 3-ft. high wooden post inserted into a 4-in. high, 10-in. dia. concrete base. The electric wire fits inside a 2-in. deep slot cut into the top of the post.

"The posts are sturdy and can withstand high winds, yet they're easy to move by hand so we can stand them up anywhere we want. To tighten the wire we just rotate the post 2 or 3 times."

He starts with a 10-ft. long 2 by 6 and cuts it into 6 pieces, each 2 by 3 by 40 in. long. He then drills a 1/2-in. dia. hole into each end of the wood pieces about 1 1/2 in. from the end. At the other end of the post, he cuts a 2-in. deep slot from the end up to the hole. Then he cuts a 10-in. dia. sono-tube concrete form into 4-in. lengths.

To assemble the post, he inserts a 6-in. length of 3/8-in. dia. rebar through the hole in the post, and then places the post with the rebar into the sono-tube. Then he mixes

fast-setting post cement, fills the sono-tube, and lets it set overnight.

"You need to have some arrangement to keep the post erect as the concrete sets. Setting time varies but the cement usually sets up enough to support the posts in about 5 min. Also, you want to place some poly under the sono-tubes so the cement doesn't adhere to the floor," says Dueck.

"We use these posts around gardens and feedlots and to control where animals graze. They're very simple and inexpensive. You could build 20 or 30 of these posts for \$100, and they'll last year after year.

"We got the idea because we raise a few horses and their curiosity makes them difficult to control. We got tired of the plastic commercial electric fence posts that you stick into the ground; they work well during the summer but are useless during the winter if you have frozen ground because you can't move them around," he notes.

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Portable electric fence post system consists of a 3-ft. high wooden post inserted into a concrete base. The electric wire fits inside a 2-in. deep slot cut into top of post.

