

Simple System Keeps Pastured Beef Watered

David Nortunen keeps his beef herd well watered with a simple system of pipes and disconnects. Over the past 10 years, Nortunen and his father, Jim, have developed a high quality, grassfed herd of Red Devons. However, without ready access to water, their intensive grazing system would have fallen apart.

“Our overriding goal is to produce the most tender, juicy, nutrient dense steak every time,” says Nortunen. “To achieve this goal, we feel we need the absolute best genetics available, and we need to grow the best quality forage possible.

“Every day our cattle get moved to fresh paddocks, sometimes as often as 4 to 5 times a day,” he says. “They need fresh water in every paddock. Our cattle are always close to a water tank.”

Nortunen described his watering system in a recent issue of On Pasture, the online grazing management newsletter (www.onpasture.com). His system is based on 1-in. pipe with risers and quick connects every 150 ft.

He has a 3,000-ft. line that runs down the center of an 80-acre pasture and a line of about 4,000 ft. through a ravine and then into a 60-acre pasture. Each pasture is broken up

into smaller 10 to 12-acre paddocks for mob grazing with portable water troughs moved to each new paddock with the cattle.

If he were designing his system today, Nortunen would do it differently. “I would go with larger pipe, at least 1 1/4-in., and also heavier pipe,” he says. “Some of mine is 100 psi, and every year we get breaks where water collects and freezes. I have some 160 psi, high-density polyethylene, and it never breaks, even if it freezes solid.”

Water troughs are made from old tires. “I cut away the sidewall on one side,” says Nortunen. “I measured the circumference of the remaining bead and had a local steel shop cut out a piece of steel to fit. I laid the steel on the bead of the tire and drilled holes through and bolted the rubber to the steel. Then I laid a bead of silicon around the perimeter where the steel meets the rubber.”

Nortunen added input and drain pipes to each water trough. He used a 3/4-in. drill bit to make holes for 3/4-in. pipe. He notes that the pipes fit so snug, he had to pound them in, and they have never leaked since.

A 50-ft. garden hose with quick-connect ends carries water from the pipe riser to the tank. A float and valve at the end of the input pipe maintain the water level. Two U-bolts



David Nortunen keeps his beef herd watered with a simple system of pipes and disconnects. Tanks are made from old tires, with input and drain pipes (above left). A length of garden hose with quick-connect ends carries water from a pipe riser to the tank (left). “When I want to move cattle to the next paddock, I disconnect the hose and open the drain valve,” says Nortunen.

welded to the steel plates hold the valve in place and protect it from the cattle.

“When I move cattle to the next paddock, I disconnect the hose and open the drain valve,” says Nortunen. “When it is empty, I hook a chain on the tire and drag it to the riser in the next paddock, hook up the hose and refill the trough.

“If redoing it, I also would go with 1 3/4-

in. drain pipes for a faster flow,” he says. “Waiting for the tire to empty slows down the paddock change.”

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A Saskatchewan company is optimistic that commercial potato production using seeds is not too far off.

Hybrid Seed Could Revolutionize Potato Industry

Most readers of FARM SHOW have likely planted potatoes the conventional way, by sticking tubers into the ground. A Saskatchewan company is hoping to revolutionize potato production by growing potatoes using “true potato seed” (TPS) technology.

Tuberosum Technologies, Inc. (TTI), headquartered in Broderick, Sask., has completed 3 years of hybrid potato seed testing and is optimistic that commercial potato production using seed is not too far off. “We’ve identified a half dozen experimental TPS hybrids that are fairly consistent for tuber yield, size, shape and color,” says Dr. Khyal Thakur, TTI Director of Research and Development. Thakur says true seed is the tiny botanical seed inside tomato-like green fruits, called berries, which develop following self or cross pollination in the flowers on potato plants. The tiny fruits appear naturally on some but not all potato varieties.

There are many benefits to using true seed for propagation. Developing new varieties would be much faster than the 15-year process using clonal research of tubers. TPS would also eliminate inefficiencies in storage and transportation of tuber seed. Thakur says the seeds store well and they produce healthier potatoes because common diseases are eliminated or drastically reduced. The



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cost of 100 grams of TPS needed to plant one hectare would be substantially lower than 3 tons of seed tubers needed to plant the same area.

TPS can be used to grow potatoes in 3 different ways: 1) Raising seedlings from TPS and transplanting in a field at 3 to 4 weeks; 2) Direct seeding similar to the way sugar beets, canola, wheat and barley are propagated; and 3) Using mini-tubers from previously grown TPS plants that can be planted the following year.

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Steel Towne’s wood boilers are available fully assembled or as complete kits that customers can weld together and install themselves.

Wood-Fired Boilers Provide Economical Heat

“We had tremendous interest in our wood boilers when propane prices went sky-high a couple of years ago,” says Jeff Miller, owner of Steel Towne in Elk Mound, Wis. “Demand isn’t as high as it used to be, but there’s still a place for our boiler kits when people are looking for a cheap way to heat with water.”

Steel Towne’s wood boilers are available fully assembled and ready for installation or as complete kits that customers can weld together and install themselves. “All you need is basic welding and plumbing skills,” Miller says. “We roll the metal and cut all materials to length. The kit includes an aquastat, a blower and detailed plans.”

The company’s 160-gal. capacity wood boiler has a 32 by 36-in. firebox made of 3/16-in. steel rolled round and a 42-in. dia. by 48-in. long water jacket of 1/8-in. steel rolled round. The unpressurized system works best with a water-to-air exchanger or a water-to-water heat exchanger. Miller says the boiler will heat a 2,500 to 3,000 sq. ft. house on 2 wood fills per day. The system includes a blower with an air door solenoid which helps save wood by stopping the air flow to the fire.

Logs up to 36 in. long will fit inside the boiler, which has an 18 by 18-in. fire door opening. Miller recommends that the boilers

be insulated using spray foam or other materials, and ideally, be housed under a roof for more comfortable operating conditions.

Owner Jeff Miller says a furnace all assembled and ready to burn is priced at \$3,000. The kit alone, where the homeowner would assemble and insulate it, runs \$2,000. After a person buys a stove, they need to situate it outside their home or shop, run water lines into the structure, and install a water-to-water or water-to-air converter, depending on their heating system. Miller says insulation, water lines, a water pump and miscellaneous parts are available from a hardware or big box store and a converter is usually \$350 to \$400 on eBay. A person can install those items themselves if they’re handy, or hire a contractor. Electrical costs to run the boiler are usually \$4 to \$5 a month.

“Some stoves on the market are \$8,000 to \$10,000 fully installed,” Miller says. “Ours usually cost about half that, and can even be less if a person can do most of the work themselves. And with our system, you don’t have to have to call China for a part.”

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