

Clever cattle quench winter thirst with a nudge

Muzzle-powered pump offers an ice-free sip

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Not only can you lead a cow to water, you can teach it how to operate the pump.

If you don't believe that, go to Jim and Jackie Anderson's farm near Rimbey and watch cow after cow prod a padded pump with their noses, knowing they'll be rewarded with a big gulp of fresh, cold water.

But Jim Anderson didn't invent his Frostfree Nosepump to show that cattle can do tricks.

"Progressive ranchers are always learning how to extend their grazing season into the winter, but it is always the water that is the limitation," the second-generation farmer says. "You can stockpile your grass, but we have never figured out how to find water that won't freeze, without depending on electricity."

Jim Anderson lists the benefits of the steel pump he developed with the help of an engineer from the Alberta Research Council:

- ▶ the low-tech system doesn't freeze in the winter;
- ▶ the power it needs comes from the cow;
- ▶ it provides as much clean water as cattle want, making them feel less stressed;
- ▶ it allows farmers to use remote pastures without natural water supplies;
- ▶ nosepumps are durable — six to eight bison herds are currently using them.

The Andersons' device isn't the first pump to harness cattle power, though it's the first that can operate throughout Alberta's frigid winter.

Earlier versions on the market have



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A cow pumps water into a bowl by pushing on a pad with its nose.



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rubber diaphragms and freeze up in cold weather, Anderson says.

As with many inventions, the basic idea behind Anderson's nose pump is simple. "The technology is old," he says. "It's like an old-fashioned hand pump."

But a lot of thought has gone into refinement.

The water tray is sized to provide cattle with a half litre of water with each pump. The animals never leave water to stagnate in summer or freeze in winter. The tray is covered with a hood, designed to keep birds from soiling the water. It also slopes away from the animal,



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Rancher Jim Anderson shows how water is pumped into a bowl by pushing on a rubber pad.

encouraging the cow to push down on the padded lever for more water.

The pumps sit in the middle of a six-metre by six-metre pad of insulated concrete to aid maintenance, prevent contamination seeping into the water supply and help keep the well from freezing.

The pipe leading from the pump to a submerged piston is designed to drain after every use, to prevent frost damage in cold weather.

"We use our own herd as testers," he says. "We jeopardize our own livelihood to verify the function of this nose pump. We built the first one in 1999 and we've been using it since then."

Anderson says in the two years since it went on sale, he has sold about 175 of the \$975 units, mostly to Prairie farmers, but also to some in B.C., Ontario, and

one each to Newfoundland, Prince Edward Island and Nova Scotia.

Total installation bills vary according to the depth of the well, but typically come in at about \$3,000.

Sales dropped off drastically after the mad-cow crisis hit last May. "Ranchers quit spending money," he says.

Anderson came up with the idea while thinking of ways to use a dry quarter section he owns.

"Grazing was out of the question because we had no natural water there," he says. "Nor did we have electricity to get us a water system."

Once he dug a well and installed one nose pump, he was able to overwinter 135 cows in the field, without any noticeable stress to the animals.

If there is a limitation to his pumps, it is

the depth of the well. The deeper the water, the tougher it is to pump.

His deepest well goes down 16 metres and Anderson has a tough time pushing the nosepump with his hand.

"But it's nothing for a 1,400-pound cow," he says.

Which leads back to the big question. How do you teach a cow to pump water?

First, start with a group of 15 to 20 animals.

"You've got to be hard-nosed about it," Anderson says.

"When you train cows, you pump that thing by hand and you go home, do not stand there because they will frustrate the pants off you ... When they are left to their own resources, that's when they start to figure things out for themselves."

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