

# Cow-powered pump provides ice-free water

By HARLEY RICHARDS  
LIFE editor

Three years ago, Jim and Jackie Anderson just wanted to get some water to their cattle.

Today, the 135 cows on the Rimbey-area couple's pasture land are slurping contentedly. And much of the Andersons' non-farming time is being spent manufacturing and marketing their new product, Frostfree Nosepumps.

The beauty of Frostfree Nosepumps, say Jim and Jackie, is they're bovine-powered. A few nudges of a cow's nose is all that's needed to draw water into a small drinking reservoir.

"It's such a neat sensation to see cattle pump their own water without the need of electricity," says Jim.

Diaphragm pumps operated by livestock have been used in the past, he acknowledges. But Frostfree Nosepumps will not seize up in subzero temperatures.

"There just isn't anything else like it anywhere, which is amazing," says Jackie.

The couple have obtained a provisional worldwide patent, and have about 50 nosepumps — complete with instructional videos — packaged and awaiting shipment in their garage-turned-manufacturing shop.

"We've made a few sales, which is encouraging," says Jackie, who spearheaded their business Web site and other promotional material.

A Frostfree Nosepump was set up

Rehabilitation Administration tour, and the product has been featured in media reports. However, Jackie says the onus for marketing rests with them.

Jim, who has displayed the pump at a number of agricultural trade shows, agrees. But he admits it's tough going from farmer to salesman.

"We've always been on the other side of the counter."

In fact, the Andersons first became interested in nosepumps as consumers.

"On this farm we have four quarter-sections — two of them don't have any water or power," explains Jim.

Installing an electric system was going to cost about \$10,000, and saddle them with ongoing charges. A solution presented itself in the form of an invention by Bowden resident Walter Diehl. By installing a drain below ground level, he developed a nosepump that was resistant to freezing.

The Andersons installed one of Diehl's pumps on their farm in 1999.

"The first winter it was marvelous, because it worked," remembers Jim.

But the pump had limitations. Not only was it extremely heavy, there was a danger water not consumed by the cattle could flow back down the line and contaminate its source.

Jim felt he could improve upon the design, and Diehl, who was suffering from failing health offered his blessing.

The Andersons spent "hundreds of hours" on the project, including consultations with the Alberta Research Council.



Photo by HARLEY RICHARDS/ LIFE editor  
Jackie and Jim Anderson watch as one of their cows uses watering device.

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## Pump: Cattle quick to learn how to use system

Continued from Page 1

But ultimately, it was Jim tinkering in his shop who came up with most of the modifications.

Perhaps most notable was an increase in the height of the riser through which water flowed into the reservoir.

This prevented the liquid from draining back down the line.

Jim also connected the nosepad to a pendulum-like mechanism, and incorporated oilfield technology into the pump's piston.

Insulating the upper portion of the supply pipe enabled him to raise the drain hole to within 1.5 metres (five feet) of the pump, reducing the distance water had to be pulled.

Finally, he reduced the pump's weight to about 13.5 kg (30 pounds), and gave its exterior hood rounded edges to minimize the likelihood of cattle rubbing against it.

The Andersons contracted a Red Deer company to manufacture the above-ground portion of their Frostfree Nosepumps.

But Jim assembles the down-hole components, including the cylinder and piston.

The Andersons are optimistic a sizable market exists for their nosepumps.

"There's got to be a lot of land that isn't accessible to cattle because it's too far from power," says Jim, adding their product's simplicity should also appeal to some.

"It's designed for the electrically illiterate individual," he chuckles.

The Andersons' own experiences have been positive.

The pumps have enabled them to make better use of their pasture land, and decentralized watering has reduced the incidence of scours in their herd and limited the accumulation of manure near the farmyard.

Although the Andersons were able to supply water to 170 cattle with a single nosepump the first winter they used the device, they now have four.

"Our deepest one, we're lifting 47 feet (14 metres)," says Jim of the nosepumps' ability to draw water to the surface.

This summer they plan to test their pumps to a depth of 18 metres (60 feet), and are confident with modifications they will prove effective to 30 metres (100 feet).

Frostfree Nosepumps can also be used to draw water through a buried line from a surface source, such as a dugout or stream. This reduces the risk of contamination and drowning.

"It's amazing how many people say, 'I lose at

least a cow a year in the dugout,'" says Jackie.

Cattle have proven quick to associate pushing the pump's nosepad with the appearance of fresh water.

"They figure it out," says Jim, adding the animals also learn to take their turn at the pump.

The biggest impediment at this point seems to be skeptical producers.

"That is the only hurdle. It's not the cattle, it's the farmers' perception."

The Andersons hope word-of-mouth advertising will overcome this resistance.

They confess it's no accident one of their pumps is located a stone's throw from a well-travelled road.

"For the most part, I think people need to see it in their neighbours' fields," says Jackie.

Anyone interested in learning more about Frostfree Nosepumps can call the Andersons at 843-6740 or toll-free at 1-866-843-6744. Their Web site is [www.frostfreenosepumps.com](http://www.frostfreenosepumps.com).

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