

# Cattle "pumped" over winter watering system

Cattle are snoopily animals by nature - they're always getting their noses into something. They also like to drink a lot of water. And so it seemed only natural to one Alberta livestock producer to combine these two qualities to market an effective winter watering system.

The Frostfree Nosepump™ is an energy-free device livestock producers can install on many water sources to ensure their cattle have adequate water all year, particularly during the winter when freezing is a concern. The system is a cost-effective watering alternative that is powered by the cattle themselves.

The initial design, a concept of Walter Diehl of Bowden, AB, has been further engineered and re-designed by Jim Anderson.

The Alberta producer has obtained a provisional worldwide patent on his new design.

The system's easy assembly, reliability and low cost make it a hit in an industry where water can determine an operation's success or failure. Conveniently, the pump, which

on his farm three miles southeast of Rimbey, AB, can be installed by the landowner.

The new design consists of a blue metal hood, pendulum, down-hole cylinder and foot valve mounted on a vertical culvert.

The culvert acts as a reservoir, storing water from sources such as underground aquifers or dugouts.

The pump is attached to the top of the culvert, extending to a foot valve in the water. The piston pump is activated by the animal pushing the bottom of the pendulum, drawing water up into the bowl.

"The 30-pound pump is compact with a curved back, sitting 20 inches high and long," described Anderson, who carried on with the idea when Diehl's health prohibited him from continuing his work.

Since then, Anderson has modified the system with assistance from Earl Jensen of the Alberta Research Council, making it more userfriendly, environmentally sensitive and efficient.

Anderson, along with his

Anderson has installed four nose pumps on his property. Due to the unit's durability, simplicity and ruggedness, he's had no trouble with the virtually maintenance-free system.

During the first year of use, Anderson watered a herd of 170 cows with a single nose pump for three months of winter feeding on one quarter-section of land.

Although only one animal can use the pump at a time, the herd learned to space themselves and take turns.

At the end of the 2001 calving season, Anderson turned in a nearly 100 per cent crop of healthy calves.

"We took our 135 cows to the quarter with the nose pump in mid-October and they stayed out there until late January," said Anderson.

"That creates an ideal opportunity to get them out of my farmyard. We feed them out there in the field, and by January the manure is spread fairly evenly.

At calving season we bring them all home to clean yards and sheds. As they calve, we move them back out in smaller groups to fresh ground where we have other nose pumps.

This helps with disease prevention and manure distribution." Frost protection is achieved by a combination of insulation, and draining of the supply pipe. Water, once in the trough, is not able to drain back, thereby preventing potential contamination.

Training the cows to use the pump is the next step once the system is installed.

Though it may seem like a daunting task teaching 170 cows to drink from a foot-sized trough one at a time, Anderson said the process was surprisingly easy. However, he warns that calves, until they reach a certain maturity, are unable to use the pump. Fortunately, over the past three years, he says this has not been a problem: "Babies don't need much water if they have milk." "There should be a financial benefit to farmers and producers when you look at the other alternatives: electric, solar, wind and gas,"

environmental.

Because this system is economical, we hope there'll be positive uptake, getting more cattle out of the creeks, rivers and dugouts, and giving farmers more opportunities to have their cattle out of the yard for longer periods of time.

The two biggest benefits are grazing in remote areas and improved water quality."

Drilling the well and installing the culvert are the only areas where a producer will need the assistance of a local licensed well driller.

Brandt recommends landowners seal the area surrounding the culvert with a thick clay or bentonite. Locating wet wells on ground that slopes away from the source will prevent nutrient-rich water from flowing back into the dugout, creek or river.

A licensed drilling company will ensure that every hole drilled meets all government regulations, including those found in the Alberta Water Act.

Nose pumps should be installed in areas with good underground water wells or ~~cisterns, though a dugout~~ or nearby stream can also be used.

By fencing off the surface water source and trenching a pipe from the source's bottom to the nearby culvert, it becomes a reservoir. The water will fill the culvert to the same level as the dugout.

Anderson and Brandt have yet to determine a maximum depth the system can effectively pump at, though Anderson has managed to lift water from 47 feet.

The only hitch he's come across is ice forming at the edge of the bowl at temperatures below minus 30 degrees, which, if left to accumulate, could cause the pendulum to jam.

By doing routine checks and tapping ice off as required, Anderson is confident the unit will work trouble-free for years.

For more information on the Frostfree Nosepump™, visit the Anderson website at [www.frostfreenosepumps.com](http://www.frostfreenosepumps.com).

"This system runs on cattle power, so whatever lim can market this at,