

## Plunge and Drink - Alternative to In-Stream Watering

Nose pumps can be found on pastures across Ontario as an alternative to instream watering. Animals push a plunger with their nose to move water with a diaphragm pump into a bowl. The nose pump can be located away from the stream so cattle drink from the bowl rather than the muddied up stream bank.

On Manitoulin Island, in northern Ontario, the nose pump option has been modified to work through the cold winter months as well as the summer. A local farmer, Dave Millette, working with an organization called Manitoulin Streams, has installed a frost free nose pump. The installation allows his cows access to cool, clean water year round. His cattle can access the nose pump so his stream, which would flood in spring and be tramped in summer, is now cattle free. The pump requires no electricity.



Figure 1: Cow using nose pump

The well on Dave's property is 65 feet deep, within the workable range for a nose pump. The company which markets the nose pumps, Frostfree Nosepumps Ltd., recommend wells be less than 72 feet deep, with standing water of less than 45 feet. The higher the lift, the more force is required to push the plunger.

Up to 50 cow-calf pairs, or 100 cows can be serviced by one nose pump. Approximately one half litre of water comes up with each full stroke. This is about the amount one animal can swallow at a time, so there is little water left in the trough when they quit drinking. This help prevents freezing in the trough.



Figure 2: One half litre of water is available with each stroke

Dave worried that the cattle would not learn to use the nose pump, but once they became thirsty this was no longer a problem. The company recommends training a small group of cows to use the pump. They then show the rest of the herd how to use the pump.

To install the pump, Dave first put down a layer of gravel, then styrofoam insulation underneath the 20 X 20 foot pad cement pad. In the middle a 24 inch culvert, 21 foot long was put into the ground. Over this the pump was installed along with a steel lid for the culvert, and insulation for the culvert and lid.

Once installed and working, the pump was unaffected by cold weather down to -30o and lower. The pump does not freeze because the geothermal heat from the ground heats the culvert. The insulation helps to retain the heat. There is a drain hole in the pipe 5 feet below the pump. When the cow is finished drinking, the water slowly drains down to this depth, and stays warm enough to not freeze.

For Manitoulin Streams project co-ordinator, Seija Deschenes, having farmers install remote watering systems such as the frost free pump, fits with the organization's goal of working with producers to seek solutions that are mutually beneficial. The cattle have a constant supply of cool, clean water, and the streams are protected from damage from cattle hooves, especially during vulnerable cool fall and spring periods. Brian Bell, OMAFRA Agricultural Representative on Manitoulin, says this is just one aspect of environmental improvement being implemented on the island.

This project is another example of co-operation between industry, environmental protection groups and OMAFRA to establish best management practices at the farm level.

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