



WINTER WATER SYSTEMS

Winter water for cattle can be a challenge in cold weather, especially in regions without electricity for running a pump or tank heaters. There are several options including solar power and the frost-free nose pump. George Widdifield, ranch manager at the Western Beef Development Centre's research ranch at Lanigan, Sask., says their operation utilizes frost-free nose pumps and also solar power, including a water system purchased from Kelln Solar at Lumsden, Sask.

SOLAR

"One of our solar-powered water systems from Kelln works off a motion detector. When the cattle walk up to it, the pump starts running and they can drink from it. It runs for a while and shuts off after they move away. This system runs the pump off a wet well that we put in from a dugout. The pump is down in that shallow well and doesn't have to pump the water very far," says Widdifield.

A three-foot-wide cribbing goes down

into the wet well, with a tub at the top that the water pumps into. "Once the pump shuts off, after the cow leaves, the water in that little tub drains down into the wet well, so there is none left in the tub to freeze," he says.

The ranch also uses another system from Kelln Solar that runs a pump with solar power from a regular ground well. "We run that water in an underground pipe 1/4 mile to a winterized trough that works off a float system. This trough has six drinking holes and you can cover or open as many as needed, depending on how many cows it waters. We've had very little trouble with this system," he says.

"Running from a well, the water line to the trough must be down about eight feet so it won't freeze. The trough itself has six inches of insulation. As long as there is fresh water coming into it all the time it doesn't freeze. The drinking holes go down through the insulated cover."

Cattle drinking throughout the day lower the water level, which activates the float valve and brings more water into the trough, which keeps it from freezing during cold

weather. Occasionally those holes freeze over at night when the cattle aren't drinking. "If it's 40 below zero and the wind is blowing, we have to go out in the morning and knock ice out of the drinking tubes, but as long as there is fresh water coming in regularly the trough won't freeze up," he says.

The ranch has many small groups of cattle for various research trials, so they depend on numerous water sources. "We have several different systems and also made some of our own insulated troughs because we have to haul water to certain fields for the trials. As long as we put fresh water into them every day, they stay open a long time in cold weather. The insulation makes a big difference," says Widdifield.

NOSE PUMPS

The ranch has also used frost-free nose pumps the past four winters. These consist of a vertical culvert to access water from a nearby dugout. A small drinking basin sits atop the culvert. A cylinder with a piston pump is inside the culvert, pumping water up to the basin when the cows push a lever

with their nose. When the cow stops pumping, any water remaining in the upright pipe drains back down and there's no water left in the pipe to freeze.

"These work fine but the cows must learn to use it. We did it the recommended way, starting with just a few cows at a time, and they teach the others. There are different levels in the drain holes in the line, and when we are training cows we put it at the highest level (during warm weather with no danger of water freezing in the pipe) so it's very easy for them to pump. After they learn, we lower the drain hole." After they know how to use it they will push it as hard as necessary to pump the water. "We've found that even in summer when there is other water available, some cows prefer to use the nose pump and have cool, clean water," says Widdifield.

The big advantage of the nose pump for cold weather is that it is very simple, with little chance for breakdown and problems. The fail point in most water systems is an electronic component. There is only one moving part in this pump — the piston that goes up and down in the cylinder. In sub-zero weather you need it simple — less things to go wrong or freeze up.

One nose pump will easily water 100 head. With 400 head, a person can put four basins on top of the upright culvert. James Madge, a rancher in Alberta, has two sites with four basins at each site and waters 500 cows in that pasture all winter. He has another site with two on it, where he waters all his bulls.

"We've never had anyone tell us a nose pump got damaged, whether they are watering bulls or bison," says Jackie Anderson, wife of Jim Anderson who invented the nose pump 15 years ago. "There are some bison ranchers using nose pumps, including one of our neighbours. He's used a nose pump successfully for a number of years. It's ideal for bison because they are strong enough to push the levers, even when water has to be brought up from deeper wells. Also, many bison producers tell us they have trouble with any water system that drains back down because hairs from bison beards get into the moving parts and cause problems. The nose pump eliminates that risk."

Using a nose pump for water is good insurance against losing cows. "Cows are worth so much right now that one cow saved from drowning in a dugout would more than pay for installing a frost-free nose pump. We heard of someone losing an entire herd because they were all out on the ice, milling around trying to find water," Jackie says.

"One fellow told us his uncle was chop-

ping a hole in the ice and a cow pushed him in. They are so eager to get to the water that they shove and push each other. Lots of farmers work off the farm and leave their wives to take care of the cattle and their wives are chopping holes in the ice," she says.

Don Viste, a rancher 120 miles northeast of Calgary, Alta., has been using frost-free nose pumps for four years and says they work very well to provide water for his 300 cattle. "What started it for me was the year

we lost 29 head that fell through the ice on a dugout. It wasn't just the expensive loss, but also the emotional tragedy. These cattle were all home raised and my wife and two daughters had them all named," he says.

"This is why we went to the nose pumps, but there are a lot of other benefits besides making winter watering a lot safer for the cattle. It keeps the dugouts cleaner through

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1. To activate your account or to have one created, contact a CSR by toll-free telephone at **1-877-909-2333** or email at **info@canadaid.ca**.
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USER TIP: Including an email address in your CLTS account information enables you to reset your password as well as receive system notifications and updates.

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2. The login page will appear, click **Register – Create your Access Codes**.
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5. If your account can be found, your address will appear and you will have the opportunity to enter your user information. Once entered, click **Submit**.
6. The home page will appear with your tag order account information located on the right hand corner of the page. **Go ahead and place your order!**



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the year because cattle aren't wading out into them. The cattle also seem to get better on the nose pumps because they get fresh, clean water," he says.

Some ranchers in his area have 700 to 2,500 cows watering with nose pumps. Viste has 10 dugouts set up for wet wells and nose pumps, but only needs three working at a time. He moves the upright culverts and drinking basins around to various locations when he moves the cows.

"I have a trailer set up to do this, with timbers across it — with slots cut out, to set everything in. I just pull up the culvert, set it on the trailer, and away I go to the next location. I use a loader to pull it up, and to set it back in at the next place. Most people don't have as many dugouts as I do, and just leave the culvert/nose pump in a permanent location, but I move mine around as I move the cows," says Viste.

He eventually wants to make a tripod on the trailer so he can just pull the culvert up with a winch, and reset it with a winch at the next dugout location, so he won't have

to take a loader along with the trailer. "It will just be an A-frame that I can put up and take down, for doing this. I move my nose pumps several times during winter. I just choose a warm day when it won't freeze up when I'm relocating it," he says.

There are many ways to put in a nose pump. Some people install a large culvert in a spring, and then divert the water from that large one underground to a smaller one with the nose pump, to keep the animals away from the spring and keep it cleaner. "One fellow in Prince George had to lift water 300 feet," says Jackie. "No nose pump can do that. He was away at work all week, so he buried a gigantic tank and pumped water into it every weekend when he was home. Then the cattle used the nose pump off that big underground tank. Most farmers can be very creative," she says.

PRECAUTIONS

"With any winter water systems you still have to check them regularly and make sure they are working and free of ice. With solar-powered systems you have to make sure the batteries stay good or the valve switch in the

tank doesn't get knocked off kilter. You have to make sure the nose pump doesn't build up ice on the push lever," says Widdifield. You might have to knock it loose.

"What I like about all of these systems — the solar power with the eye, or the nose pump — is that you don't have to worry about cattle walking out on the dugout and falling through the ice."

Even in summer it's nice to have cattle fenced away from the dugouts, watering them with the nose pump or solar-powered wet well, because they aren't tromping in the dugout, damaging the banks, or contaminating the water. They aren't getting footrot or spreading fecal-borne diseases. "If you can get your water source farther from your dugout you can keep the water cleaner," he says.

For more information about solar water systems, contact Kelln Solar at 1-888-731-8882 or 306-731-2224 or by email: info@kellnsolar.com.

For information about the nose pumps, contact Jim, Jeff or Jackie Anderson at 886-843-6744 or by email: info@frostfree-nosepumps.com or go to the website: www.frostfreenosepumps.com. ❄️

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