

Forage Facts

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Winter Watering System Solutions

By: Johanna Murray

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DID YOU KNOW?

Mycorrhizal fungi can travel much further in the soil than roots can. A healthy relationship between roots & mycorrhizae can significantly increase water and nutrient uptake

There are few winter chores more universally disliked than clearing frozen water troughs. But the cows do need a source of water through the winter. Though cattle will lick snow, it's important to have an alternative in case a crust forms on the snowbanks or the cattle trample it all down. Thankfully there are a lot of options when it comes to winter watering solutions, in fact, the challenge may lie in deciding which option best suits your operation.

As with most things, winter watering systems come with some tradeoffs. The most important thing to realize as you consider what system to install is that there is no such thing as a maintenance-free water system. Snow grazing may have low infrastructure requirements, but cattle must be managed so that there is always access to fresh, soft

snow. Systems that rely on geothermal heat are more infrastructure-heavy and need to be checked for ice build-up around the access in very cold weather.

Most winter watering systems fall into one of two categories; systems that need a pressurized system, and systems that only require a dugout and/or wet well.

Most dugout fed systems operate from a wet well to prevent inlet pipes from freezing.

Wet wells can provide some geothermal heat to help prevent freezing. Many systems allow water to drain back, which keeps water flowing to reduce the likelihood of ice forming in the trough. There are three main variations of wet well water systems; Nosepumps, insulated troughs, and drain-back systems.

Nosepumps allow water to drain back and don't require any additional power. No power requirements can be useful during long

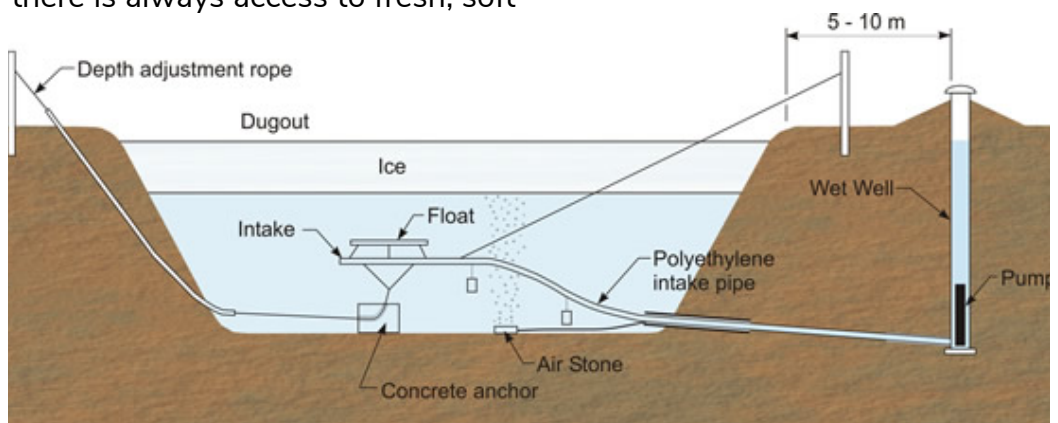
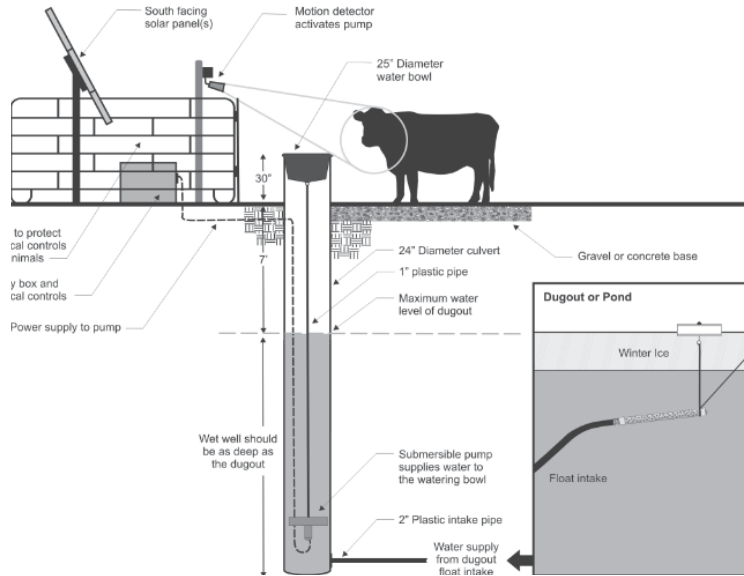


Diagram of a Dugout fed watering system from; <https://www.agr.gc.ca/eng/agriculture-and-climate/agricultural-practices/agriculture-and-water/livestock-watering/winter-watering/?id=1371156838109>

dark winters where solar power is not a reliable option. However, cattle will need to be trained to use nose pumps, so they aren't an install and abandon sort of system. A single nose pump is only rated for about 50 cow/calf pairs but a second pump may be mounted on the same well if there's enough water flow. However, it still may not be a reliable choice for a larger herd. These systems should be checked periodically for skins of ice in the bowl and to ensure they are still working in very cold weather.



Drain back system with motion sensor from [https://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex11857/\\$file/400_716\(c30\).pdf?OpenElement](https://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex11857/$file/400_716(c30).pdf?OpenElement)

ice plugs may form in the access holes, which will need to be cleared.

Insulated troughs rely on the heat of incoming water to prevent freezing. The access holes of these troughs can be covered in icy weather to help conserve heat. However, the number of cattle drinking will determine how much water is brought up and thus, how warm the tank is kept. This system will also need some type of power source to run the pump. Usually, a solar panel and batteries will suffice, though the batteries should be kept in an insulated building or container (for example, an old deep freeze.) In very cold weather,

Drain back bowls are the third watering system that can be used with a wet well. These systems have some sort of switch or sensor that turns on a pump only when cattle are present. Some systems have a door or lever cows push aside to turn on the switch, others run off a motion sensor. These systems often run off of solar power which requires some observation to ensure that the batteries haven't died and that the system is still running.

Other types of watering systems include geothermal waterers which have

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Please Note:

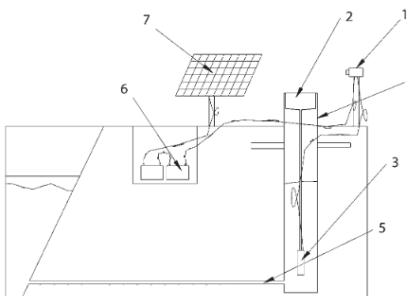
We will be saying farewell to Monika on Friday, November 13th as she heads out on maternity leave.

If you have been working with Monika, please get in touch with Johanna or Katie

Winter Watering Systems



Motion Detector Water Pump Up System



Major Components

1. electronic motion detector
2. drainback drinking bowl
3. DC submersible pump
4. galvanized culvert
5. water supply line (gravity feed)
6. battery storage
7. solar panel, voltage controller

Diagram of a Tire insulated geothermal waterer from https://static1.squarespace.com/static/5c6d9be4797f740e645a4310/t/5e25b5fb5ec2f06b-13629bae/1579529723908/remote_winter_watering_systems_for_beef_cattle.pdf

low energy requirements but require a bit more below-ground work to install. Most geothermal systems run off of a pressurized pipe system. It may be practical to keep this system near home or where several pastures or pens can be fed off of one system.

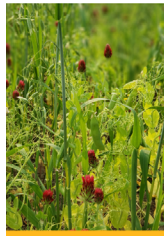
Geothermal water systems rely on the heat from the earth to keep the water from freezing. The pressurized water line is run below the frost line and brought up in an insulated hole to the water bowl where a pump turns the flow on and off. Some systems use industrial tires stacked into the ground as insulation, others use a metal culvert insulated with Styrofoam.

Thermosinks are another geothermal system, which has two insulated plastic culverts which sink into the ground side by side and are tied together at the bottom. One culvert is capped and contains the float while the other has a drinking bowl. Most geothermal systems run on a float system, which carries the risk of the float freezing in extreme cold. As with insulated tanks, ice plugs may form in access holes on very cold days.

Of course, these are only a few general types of winter watering solutions. Canadian ranchers are an innovative bunch and components from any of the above systems could be combined to make a system meet the needs of a particular operation. And while no system is entirely main-

tenance-free, a reliable winter watering system can significantly reduce the stress of keeping cattle through cold Peace Country winters.

There is currently funding available for through the Canadian Agriculture Program through the Environmental Stewardship & Climate Change - Producer program for year round off-site watering systems. This program requires that you have an up-to-date Environmental Farm Plan. This program will cover up to 50% of expenses to purchase and instal a system. If you would like more information on available funding, please get in touch with a PCBFA Staff Member.



Feeding Cows Workshop Series

Learn key principles of ration balancing, the basics of Cowbytes & bring your feed samples to build your own rations with ruminant nutritionist Barry Yaremco

Nov 9th - 9:30AM	La Crete	MARA
Nov 9th - 7:00PM	Manning Legion Hall	NPARA
Nov 10th - 12:30PM	Bonanza Hall	PCBFA
Nov 12th - 9:30AM	Sunset House Community Centre	PCBFA

PCBFA and NPARA hosted workshops:
\$15 for members, \$20 for non-members

Masks will be mandatory and provided

Attendance is limited, register early to guarantee your spot!

For more details or to register:

PCBFA 780-523-4033 peacecountrybeef.ca	NPARA 780-836-3354 nora@npara.ca	MARA 780-927-3776 mackenzieresearch.ca
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Event	Date & Time	Location
Is It Time to Rejuvenate Your Pastures? Part 2 with Dr. Akim Omokanye	November 9th Noon-1 pm	Online
Feeding Cows Workshop with Barry Yaremco	November 10th 12:30 pm	Bonanza Hall Attendance is Capped. Register Early to Save Your Spot!
Feeding Cows Workshop with Barry Yaremco	November 12th 9:30 am	Sunset House Community Centre Attendance is Capped. Register Early to Save Your Spot!
Managing Risk for New Opportunities	November 25th 7-8:30 pm	Virtual Meeting

For More Information & to Register:
Visit peacecountrybeef.ca/upcoming-events or
Call or Text Johanna at 780-523-4033

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Contact Our Team!

Chelsey Hostettler Operations Manager Fairview, AB P: 780-835-6799 C: 780-523-0443 E: chelsey@pcbfa.ca	Akim Omokanye Research Manager Fairview, AB P: 780-835-6799 C: 780-835-1112 E: akim@pcbfa.ca	Buthaina Al-Maqtari Research Technician Fairview, AB P: 780-835-6799 C: 403-667-2219 E: buthaina@pcbfa.ca	Katie McLachlan Environmental & Communications Coordinator Fairview, AB P: 780-835-6799 C: 780-772-0277 E: katie@pcbfa.ca	Johanna Murray Extension Coordinator High Prairie, AB C: 780-523-4033 E: johanna@pcbfa.ca	Monika Benoit Extension Program Advisor High Prairie, AB C: 780-837-4752 E: monika@pcbfa.ca
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