

# Sun Tanks Use Solar Power To Keep From Freezing

Instead of breaking ice on livestock water tanks this winter, how about letting the sun take care of it instead? With a solar panel and unique float system, BT Sun Tanks from Pine Ranch Products keep water thawed even when temperatures drop down to 50 degrees below zero.

Mark Ames developed the product for his own horses. One of his original prototypes from 18 years ago still works great.

BT Sun Tanks come in two sizes – 25 gal. or 42 gal. – that are insulated for up to an R-50 rating. The tank has a float valve on top that is about 2 in. thick.

When first installed, leave the float off, Ames says, to teach horses or other livestock how to use it. Once they are used to it, replace the float and put a little grain on it, if necessary. Livestock are used to breaking ice and usually learn quickly to push the float down to get water.

The shatterproof solar-powered collector on front is the key to keeping the water from freezing.

It's a passive solar system, he adds, and water is a great source to store energy, so the tanks stay ice-free even when it's cloudy for a few days.

Ames offers two sizes and options, starting with the 25-gal. for \$489 (manual fill) or \$542 (auto fill) which are good to minus 20 degrees. The 42-gal. BT Sun Tank is \$672, good to minus 50 degrees, and works with manual or auto fill. Shipping is additional. Ames also sells BT Tank Trailers that hold 100 gal. of water. They can be pulled with an ATV to fill Sun Tanks in remote locations.

Ames offers discounts for multiple orders and notes that a government program through



**BT Sun Tank uses a solar panel and unique float system to keep water thawed, even in the coldest temperatures.**

USDA-NRCS covers up to 50 percent of the costs for Sun Tanks and installation of a waterline for eligible farmers.

The BT Sun Tank also works well in the summer because the float keeps the water covered, and algae can't grow without sunlight. You cover the solar panel to stop it from heating.

Ames's company has shipped tanks north into Alaska and south to the Grand Canyon. Contact: FARM SHOW Followup, Pine Ranch Products, LLC., P.O. Box 281, Santa Clara, Utah 84765 (ph 435 656-0229; www.ranchtanks.com).



**"Earth-heated" waterer consists of a 13-gal. plastic tub with pvc tubes and float assembly. Chickens drink through a hole cut into middle of tub's snap-on lid.**



## Waterer Gets Heat From Underground

"The earth's temperature at 8 ft. below the surface stays at 49 degrees even during the coldest months of the year. I've harnessed that heat to keep my homemade chicken waterer from freezing over," says Dan Ambrose, Grand View, Idaho, about his "earth-heated" waterer.

The waterer consists of a 13-gal. plastic tub with a closed loop of 2-in. dia. pvc pipe that extends 8 ft. deep below ground.

Ambrose simply cut 2 holes in the bottom of the tub and installed 2 bulk head, double-threaded 2-in. fittings to connect to the pvc tubes. Inside the tub, he attached 2-in. pvc threaded couplings with one 9-in. long tube and one 11-in. tube. A 4-ft. deep underground water line hooks up to a nipple at the bottom of the tub. A float assembly mounted above the water intake controls the water level inside the tub. Chickens drink through a 4-in. dia. hole that Ambrose cut in the middle of the tub's snap-on lid.

"The whole principle is that cold water sinks and warm water rises, and since one tube inside the tub is 2 in. shorter than the other, it causes the water to constantly circulate," says Ambrose. "I installed the



**Photo shows closed loop of 2-in. dia. pvc pipe, which extends 8 ft. deep below ground (pipe loop in photo is just 4 ft. for demonstration purposes).**

waterer last winter and it worked great. One morning the temperature got down to 6 degrees, but only a very thin layer of ice developed.

"I installed the tank at ground level, but the chickens kept scratching dirt away from the tub. To solve the problem, I cut up some old bowling alley gutter and buried it vertically in the ground around the tank, like a little fence."

Contact: FARM SHOW Followup, Dan Ambrose, 22219 River Rd., Grand View, Idaho 83624 (ph 208 834-2388 or cell 208 598-3498; pdugger@earthlink.net).



**Thermosink energy-free livestock watering system uses 8 1/2-ft., insulated tubs that are buried with about 20 in. of the fountain above ground.**

## "Freeze-Proof" Waterer Needs No Electricity

As an Alberta cattle rancher, David Flundra appreciates the 8 Thermosink energy-free livestock watering systems he has installed on his ranch. He liked them so much he became a dealer for the watering system, which was developed by an Alberta Hutterite colony.

"Zero cost to operate is the most important advantage," Flundra says about the fountain system that doesn't require electricity. He estimates he saves \$2 a day per waterer for the electricity it costs to run most systems.

He also appreciates Thermosink's easy installation and minimal maintenance requirements.

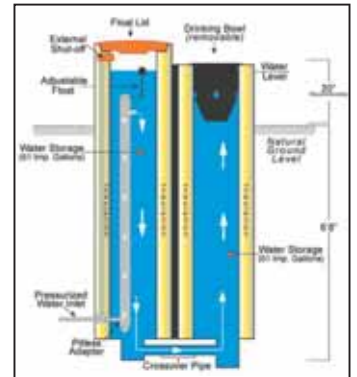
"Anyone with a backhoe can install them," he says, adding that unlike other systems no concrete is needed.

The 8 1/2-ft., insulated tubs are buried with about 20 in. of the fountain above ground. Directions on the website show how to hook up the water supply line with flexible hose. When properly installed and maintained, the water line doesn't freeze.

Water is piped into a main tank that has a water line and float. Water then flows to a single bowl or 2-bowl tank. The single bowl waters up to 200 head of livestock and also works well in a confinement area. The double bowl system waters more than 200 and can also be set up with one bowl on each side of a fence.

Made of heavy-duty crosslink polyethylene, there aren't any rusting parts, and the system is easy to maintain. Self-circulation keeps water fresh year-round, but when not needed, it can be turned off with an external shutoff.

Thermosink has been shipped as far north as the Yukon Territories and is popular with



**Water is piped into a main tank that has a water line and float. Water then flows to a single or 2-bowl tank.**

ranchers in northern U.S. states. The fountain-style waterer works well for cattle, elk, sheep, bison, donkeys and other livestock.

"Some customers have 8 to 12 of them," Flundra says. "Some Thermosinks are more than a mile away from the pumping system."

He adds that they also work with gravity if a spring is at a higher elevation.

Costs vary according to distance from the manufacturer, but in Alberta it runs \$1,400 for the single bowl system and \$1,700 for the double bowl system.

Contact: FARM SHOW Followup, Thermosink, Cattle Creek Ranching Ltd., P.O. Box 1453, Medicine Hat, Alta., Canada T1A 7N4 (ph 403 502-4776; www.Thermosink.com).



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