Forage Fact # 7

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Solar Pumping Systems
Putting the Sun to Work for You

Solar System Features:

* good for remote locations
* reliable
* very little maintenance
* inexpensive to run
* initial costs higher than other systems

Diagram and information for this page courtesy of Prairie Farm Rehabilitation Admin.

For more information call:

* Harvey Wood, Rose Prairie (250) 827 3449
* Ben Hansen, Taylor (250) 789 3484
* Fred Burres, Farmington (250) 843 7074
* Brett Henschel, PFRA, Dawson Creek (250) 782 3116
* Jim Forbes, BCMAFF (250) 784 2225
* Sandra Burton or Kim Strasky, Farmington (250) 789 6885

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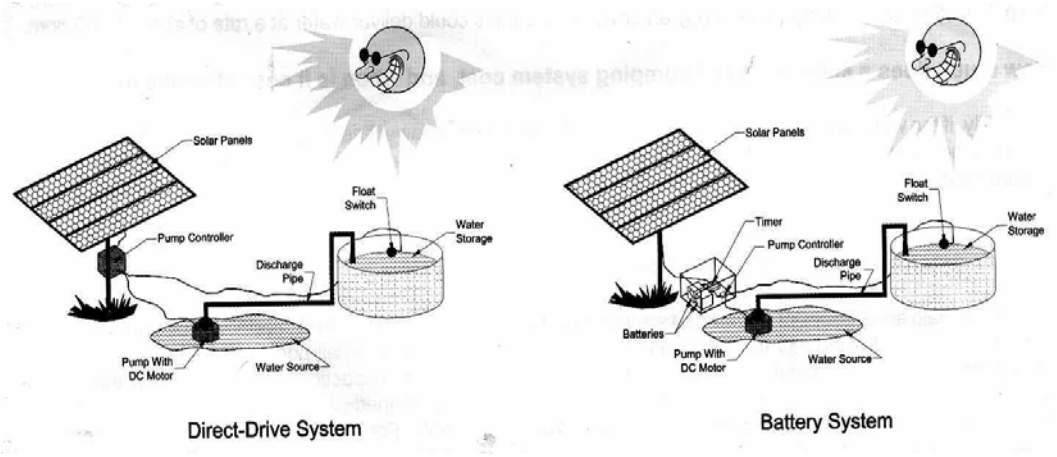
Improved cattle health with solar watering systems

Three forage producers, Harvey Wood, Ben Hansen and Fred Burres have tried solar watering systems for their spring, summer and fall watering needs and found it to be a great way to go. Compared to a free access dugout, solar watering systems help increase the longevity and decrease dugout maintenance. They improve cattle health by providing higher quality water, cleaner udders and less chance of contacting foot rot.



Advantages

All 3 producers agree: the main advantages over other remote water systems are low maintenance and ease of use.

The only maintenance chores are keeping the batteries topped up with distilled water and keeping the panels free of dirt and dust. The system must be checked daily to make sure the batteries are functioning and like any water system, the pump, pipes and hoses need checking. Overall though the system rarely has any problems, and is relatively inexpensive to run.

Another plus is portability and flexibility. Producers can modify the system for use in remote pastures or to fit their own grazing operation

Considerations

The main consideration is the initial cost of the system and components. The solar panels are about $800 each for the 48 watt panels, but, don't forget, the life expectancy for the panels is 20 years.

Another challenge is keeping the right amount of charge on the batteries. When powering both an electric fence and the water system, the grass under the fence may grow too tall, touch the fence and drain the batteries. Ben keeps an extra set of batteries charged and ready to go. When Fred first set his system up the battery controller that was supposed to keep the batteries from overcharging kept burning out. Fred's solution was to get 2 more 12 volt batteries to take any extra current and not have a controller.

Peace River Forage Association of British Columbia

"The thing I like best about the system is that it is so simple and maintenance free and I have learned I can trust it". Fred Burres

Dealers & Suppliers:

CAP Solar, Olds Alberta
(403) 556 8779
(403) 556 7799
www.capsolar.com

Keddies Tack & Western,
Grande Prairie, AB
(780) 532 4888

Northern Alternate Power Systems—The Solar Store
Fairview, AB
1 866 835 6277
(780) 835 3032

Kelln Solar, Lumsden, SK
1 888 731 8882

" It works well and it keeps the cows out of the dugout."

Harvey Wood

" The cost of a basic complete system has gone down in the last few years and this would probably be a good way to go now."

Ben Hansen

The flexibility of using solar

The 3 producers each put his own spin on how the system can be setup, so there seems to be lots of flexibility. They all talked to the solar dealers when planning their systems, or when having any initial setup problems, and found them to be quite knowledgeable.

Harvey Woods system has been in place since August 1998 when a water shortage forced him into looking for watering alternatives. Utilizing the Prairie Farmers "The Book", he located a solar dealer.

Harvey says "you need to know what the vertical lift is from your dugout to the tank and how many head you will be watering." He decided on two 46 watt stationary solar panels that charge two 6 volt deep cycle golf cart batteries that run his CAP International 12 volt pump. The pump sends water through a 2" hose to a 200 gallon stock tank. The tank is placed ¾ of the way under a 5 wire fence. The fence is reinforced by wooden planks. The pump provides 2000 gallons. of water on an average day over 10 ft of lift. It will fill the stock tank on demand in 5 to 7 minutes. Harvey likes this system because it keeps the cows out of the dugout and gives them a source of clean water.

Ben Hansen's system has been operating since 1997 providing water for his 40 cow/ calf pairs. He has the ability to move the system to either of his 2 dugouts. It takes about 2 days to move. He has an 800 amp battery that powers the water pump and his fencer. The diaphragm pump sends the water straight to a 500 gallon tank for the cattle. The screened pump has a foot valve that sits in a 5 gallon pail. The two 48 watt solar panels are stationary and adjusted for maximum amount of sun.

Ben feels that the system provides an excellent, efficient way to power his pump and fence. He says "solar panels are good in rotational grazing situations especially in remote locations. They are a renewable, non polluting source and are easy to install and relocate."

Solar system setup at Fred Burres

Fred Burres' system was set up as a demo with cooperation from PRFA of BC, PFRA and BCMAFF 3 years ago.

The system has a floating pump that sends water to a 1000 gallon tank. It is then fed to a 500 gallon tank on demand by a homemade float valve. His two 48 watt solar panels charge four 12 volt batteries that power the pump. The panels are equipped with a solar tracking unit that allows them to follow the path of the sun for maximum efficiency. The 1000 gallon tank stays on the back of a trailer as does the pole that holds the panels. The 500 gallon tank is taken off and put ¾ of the way under an electric fence so the 120 cow/calf pairs can't get at the float valve end. Fred sets up or packs up the system in about an hour but he hopes to invent a quicker way to roll up the hoses.

Water tank set up at Fred Burres

The flexibility of solar is currently being explored by some PRFA of BC members, demonstrating solar powered winter watering systems.

Compiled by: Kim Strasky & Sandra Burton
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