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Remote Water Monitoring Systems

There is nothing that frustrates me more than finding water running over at a stock tank or waterer and nothing can be riskier than having a watering system go dry for whatever reason. Water is the single most important nutrient to provide to livestock, which can be a good reason why so much time and resources can be devoted to monitoring watering systems. Wouldn't it be great if remote systems could be installed to check the water for you? Guess what, there are systems out there!

Depending on the location of animals relative to the producer's home, checking water can require hours of labor and significant fuel costs for remote pastures. Research has indicated that livestock producers may spend over \$1,500 a year on fuel checking water. Checking tanks, waterers or ponds on a daily basis is not always an option. Through the use of technology in water monitoring systems checking the status of the water source can be done remotely, in many cases in real time. These systems can be broken down into two major categories: liquid level sensing/reporting systems and photo/video systems.

Cellular based cameras can serve as a cost-effective option to remotely view water sources. One of the greatest advantages of a photo is providing visual confirmation of available water. Most cameras can be set up to send pictures at regular schedules. They also tend to be quick and easy to install and take down, providing flexibility on location and allow easy movement from pasture to pasture. Cost is an advantage as most can be purchased for around \$100 plus or minus. A disadvantage or consideration is that a reliable cellular signal is required to make the system work.

Water monitoring systems tend to be more expensive, are typically solar powered and use satellites to communicate. Most are relatively quick and easy to install, but will require more work than trail cameras, especially for units that require a base station that has more monitoring and functionality. These commercial monitoring systems can range from several hundred to several thousand dollars depending on the functionality and data collected. Some systems will simply collect and transmit data, while others can incorporate remote shut offs, collect weather data and many other functionalities. The increased functionality and near instant access with mobile devices are all positives, with cost and/or equipment permanence being the main deterrents for some.

Will it make sense to implement these technologies on your operation? If so which one(s)? These are questions that each producer has to ask themselves as technology depends upon the user to learn how to use it. In many cases water monitoring systems will provide added value to the operation through either time saved checking water sources or fuel savings. Before purchasing a unit, several factors should be considered to find the right system for your operation, including: 1) cellular connectivity, 2) program/subscription fees 3) software/hardware requirements and 4) the ability to mount units in a location where livestock can't disturb them.

This is a topic that has been developing for a number of years as mobile technology evolves and different options now exist. The University of Nebraska had a great online program a few weeks ago highlighting some of the technologies, both from a company and producer perspective. If anyone is interested in learning more, I'd encourage taking the time to watch the recorded program at:

<https://www.youtube.com/watch?v=FndPVIGml4Q>