Manitoba grower shares experience with remote irrigation monitoring system

By Myron Love

Brent Metcalfe is a young progressive potato grower in the Treherne area of south-central Manitoba, located northwest of Winnipeg. In 2008, Metcalfe, along with his cousin Barry Watson, installed a new remote irrigation monitoring system on the pair's 1,000-acre operation, WM Ventures.

Metcalfe recently shared his experiences using the system with fellow potato growers during the province's annual potato production seminars held at the Keystone Centre in Brandon, Man.

The irrigation system that WM Ventures started building in 2003 in partnership with neighbouring grower, Northern Potatoes, consists of approximately 40 kilometres of pressurized pipeline fed by eight pumps that service as many as eight centre pivot irrigation systems. The radio monitoring system was installed in 2008 to allow Metcalfe and Watson the opportunity to monitor the irrigation system's performance remotely.

"The system not only remotely monitors the pivot positions but also measures soil moisture, rainfall, evapo-transpiration, flow, and water pressure in the pipelines," Metcalfe said. "It has made running our operation much easier.

"We have studied the system's efficiencies and cost savings," he added. "It has saved us in terms of down time as well as travel time. Our land is fairly spread out. The cost savings just in gas usage and repairs have been tremendous."

Included in the system is a warning program sent via text messaging should any problems arise with the pumps or water pressure in the pipelines, or should the pivots stop for any reason.

Metcalfe said he also wanted electronic rain gauges. These tools have taken the guesswork out of rainfall levels, he said.

"I can even check the gauges in the middle of the night," he added.

Because the system keeps a data log, he can look back at the information if someone adverse should happen to the crop.

Brent Metcalfe and his cousin Barry Watson, co-owners of WM Ventures, installed a new remote irrigation monitoring system on their operation to help monitor and control eight centre pivot irrigation systems, similar to the system pictured above.

Overall, Metcalfe said, the system is working well.

WM Ventures' remote monitoring system was installed through consultation with the Manitoba branch of the Prairie Farm Rehabilitation Administration (PFRA), a branch of Agriculture and Agri-Food Canada. The system was supplied by Weather Innovations Network of Chatham, Ont.

Brent Metcalfe

Bruce Shewfelt, the head of the PFRA's Irrigation and Drainage Unit based in Morden, Man., described WM Ventures' system and other aspects of real time irrigation system monitoring,

"Real time monitoring allows the producer to make better decisions," he pointed out. "That results in better productivity and is better for the environment."

He noted there are a number of components involved in monitoring irrigation systems, including radio receivers, sensors, gauges to measure rain volume, compasses, GPS systems and the Internet. Producers can have a system that collects data right on the farm – which is convenient in that it allows the producer to monitor his situation on a daily basis – or you can have the data transmitted to a third party off-site for analysis and receive notifications through the Internet or a cell phone network.

"The systems are getting better and less costly all the time," Shewfelt said. "Satellite access, cell phones, smart sensors and broad spectrum radio are all coming into play."