Ag Tools and Tech Demonstration Sites

Background

The use of technology in agriculture is rapidly advancing, but sometimes it's hard to keep up with the advances. It's always nice to be able to physically touch and see the items and learn from other farmers how useful they are and any pitfalls. For this reason, Agriculture KI sought funding to set up four local demonstration sites.

What was done

Site 1 - FARM WATER MONITORING (S & M Veitch)

Simon and Marisa Veitch have set up a complete remote water monitoring system on one of their properties in MacGillivray. Simon has installed a tank water level monitor as well as flow meters on the inlet and outlet for leak detection on the header tank (refer to Figure 1), which supplies six troughs. He has also installed a salt meter as he shandies water in the tank from a salty bore. The meter allows him to know exactly how much salty water he can add.

The system enables complete remote monitoring of the water supply and pumping systems. The information can then be viewed online 24/7 or via a daily phone text.

Financially the system stacks up. Simon valued his labour costs to drive twice a week to the farm (some 10 km from the home farm) at \$2880 per year. The cost of the system and install would pay for itself within two years.



Figure 1. Shane (Alpha Group Consulting) and the tank monitoring set up. Note the gravel in the tyres to protect the tank and equipment from cattle.

Site 2 - MOVEABLE SOIL MOISTURE PROBE (S Childs)

Two AquaCheck® probes with a MEA data logger have been installed in a potato crop on S Childs farm. The aim is to determine soil moisture levels, enabling more accurate irrigation scheduling and

preventing yield loss from the soil being either too wet or too dry. The probes are removeable and reusable making them ideal for non-permanent crops

The probes have shown the soil moisture trends at different depths, giving an excellent indication and early warning of drying soil, particularly at depths that cannot be easily dug by hand in a normal crop monitoring visit. Due to the results, watering was increased over the drier part of the pivot to prevent plants from being put under stress and potentially cause yield reduction.

In Feb, after the early rains, the probe data was an essential decision-making tool to determine the required decisions around when or if to start watering again. This is a critical time for watering as the crop is desiccated and plant water use decreases, additional watering may cause tuber disease, skin damage or vehicle bogging problems at harvest time.

By the end of the current potato season, it is hoped that sufficient knowledge will have been gained to set lines on the soil moisture graphs which, will provide direction on when and how much to water to apply on any given day.

Refer to Figure 2, showing soil moisture levels at different depths. The spike is the rainfall event on 5-6-7 Feb and the decline in soil moisture post that date shows the soil drying out pre-harvest.



Figure 2. soil moisture monitoring

Site 3 - STANTON – AUTO DRAFT AND WALK OVER WEIGHING (Tru-Test)

The ability to be able to weigh, analyse and manage your livestock from wherever they are is a game changer in taking the guesswork out of decisions. The system enables producers to weigh, analyse and manage their livestock without a person in sight be it:

- Tracking animals against target weights or a range of other data
- Filter the data to identify top and bottom performers or monitor weights by groups or individually
- Set up draft lists and view up-to-date draft numbers Instantly share the latest data with third parties

• Even keep an eye on the trough water level and livestock with images from the remote camera

The collected data is cloud based so you can access your data from any device allowing you to weigh, analyse and manage your cattle remotely. The combined with a 3-way auto draft, allows farmers to weigh, analyse and draft off the top or poor performers without even having to enter the paddock.

Will and Jenny Stanton are in the process of setting up the system and allowing the cattle to get used to it. Stay tuned for field days on site and results in next year's ag trial booklet.

Site 4 - DNA TRAIT MAPPING IN YOUR COMMERCIAL SHEEP FLOCK.

Most producers are aware of the value of using ASBV when selecting rams and in a stud operation so the full parentage of lambs is known. But how can you speed up genetic gain in a commercial flock when the progeny may come from any one of the rams put out in the mob? Neogen, offers a commercially priced DNA testing program, allowing producers to test the rams' DNA. The producers can select the best weaners in the commercial flock, test their DNA and use that data to link the lamb to its sire, thus identify the rams throwing the best progeny.

Mitch and Ros Willson are trialling the concept by selecting a group of elite ewe hoggets and cull ewe hoggets, that had been previously visually assessed. The hoggets were DNA tested for parentage then their fleece weighed and micron tested to place a dollar value on their fleece. These ewes will be followed through scanning to determine if there is any difference between various wool characteristics and fertility.

This project is in its early stages – more details to come!

Take home messages

- Technology is advancing rapidly, making many farm jobs quicker and easier.
- We now have four 'new technology' demo sites on KI, call the producers to learn more about its practical application and cost effectiveness

Funding/Sponsors

AGKI through the Australian Government National Landcare Program Smart Farms Small Grants

- S & M Veitch (Simon 0457 137 283)
- M & R Willson (Mitch 0427 531 200)
- S Childs/DJ Growers (David 0419 849 674)
- W & J Stanton (Will 0429 855 922)

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