Lessons, reminders and new insights at Lowbank

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A seeder demonstration organised by the Lowbank Ag Bureau is providing some revealing insights and encouraging exchange of information and ideas across the national farming community.

Lessons, reminders and new insights are flowing from a seeder demonstration in the Mallee not far from Waikerie. It is also proving a catalyst for exchange of ideas between farmers from across southern Australia.

The new-generation demonstration, on a 'typical' Mallee paddock owned by Tim Paschke and his father Brian, is being run by the Lowbank Agricultural Bureau, with the co-operation of farmers in the district.

The farm-scale demonstration, a comparison of seeding equipment, involves new-generation seeders, including several disc seeders, a new generation of farmers and has been set up using new-generation GPS technology rather than marker pegs.

This year's event is in many ways a follow-up to a similar exercise undertaken by the Lowbank Bureau eight years ago when knife-point seeders were still relatively new technology, although the K-Hart disc seeder had recently been released in Australia.

Things have changed significantly in the past eight years.

"Most of our members have bought new machines since 2004 – there is a lot of interest in discs now, and quite a few disc units around – and many of the properties in the area are now managed by the sons of members who ran the previous demonstration, so we have the next generation of machinery and the next generation of farmers," Brian said.

Bureau member Allen Buckley, an advocate for no-till stubble retention who has hosted the Mallee Sustainable Farming Waikerie Core Site on his property, was a prime mover in setting up the 2004 comparison, which was also a demonstration of continuous cropping; a novel concept for the Mallee at that time.

Brian recalls that, in that exercise, which included a K-Hart and a DBS seeder, which dislodged a lot of stone, the K-Hart had the best seeding depth control because seeding depth was controlled by the machine's press wheels.

SEEDING DAY FOR THE LOWBANK AG BUREAU SEEDER DEMONSTRATION ATTRACTED FARMERS – AND MACHINERY – FROM FAR AND WIDE.

What they saw in that demonstration prompted Brian and Tim to build a 6 m disc seeder to see how discs would work in their conditions. Today they run a disc seeder and a knife-point unit because, while they find disc seeding has many benefits, the low soil disturbance of the disc machine allows rhizoctonia to build up to problem levels if they use it more than three years in a row.

"Discs have a place but we can't use them every year. Nor are they suited to all conditions.

"We run an Ezee-On bar with disc attachments that is very good in paddy melon country because it cuts straight through the melon vines, but it doesn't handle surface trash well and if we use it on sandy soils we get a lot of hair-pinning and trifluralin damage, which reduces emergence and crop density.

"It's horses for courses. We use whichever machine is best for the conditions."

Tim and Brian farm 1,600 ha about 20 kilometres out of Waikerie towards Wunkar.

Their paddock was chosen as the demonstration site because it is more or less central for the farmers who brought machinery to do the seeding and because it has soil types representative of the most common Mallee soils, ranging from a grey marly clay to sandhills.

It also has an interesting history.

"When we bought this paddock in 1965 it was full of weeds, with ryegrass on the flats and brome on the sand hills, and wouldn't grow very much at all, but that all changed when we went to direct drilling and continuous cropping," Brian said.

"Now it grows some of our best crops."

The seeder demonstration is organised by farmers for farmers, with assistance from the SA Murray Darling Basin Natural Resources Management Board (SAMDBNRM).

It is being funded by a $5,000 NRM Community Grant and a Caring for Our Country Sustainable Agriculture Practices Grant of approximately $70,000 that have been accessed by the Bureau and the Riverland West Landcare Group with the assistance of SAMDBNRM officer Jeremy Nelson.

EARLY EMERGENCE DATA SUGGEST THE SEED HAWK MACHINE HAS THE ABILITY TO HANDLE MOST PADDOCK CONDITIONS WELL.

"We invited people with a range of different machines to take part and they took time out of their own seeding programs to bring their machines here and sow two or three runs."

Each 1.5 km 'run' included heavy flats and several sand hills, so each seeder was required to work in a variety of soil types and conditions.

The bigger machines did a run up and back. Smaller units did three passes to ensure sufficient width of crop come harvest time, when two 12.2 m strips will be harvested from the area sown by each seeder.

The location of each run was determined and will be relocated for monitoring and harvest using GPS co-ordinates.

Preparations for the demonstration included nutrient soil tests and EM mapping of the paddock to check moisture and salinity levels.

It was decided to use Mace wheat because, while Mace is not usually grown much in the Waikerie district because of concerns about its rust susceptibility, its yield potential maximised the chances of finding meaningful yield effects from the various seeding treatments.

The paddock was sprayed with 1.5 L/ha of trifluralin and each seeder was set up to sow 50 kg/ha of Mace seed with 50 kg/ha of DAP plus a fungicide to ensure a standard base for monitoring and assessment of plant counts, biomass, weed populations and yields as the season progresses.

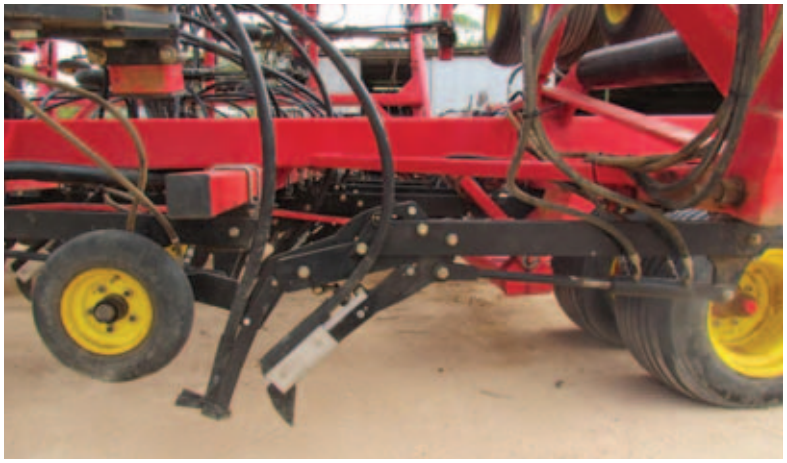
"Otherwise there were no rules. The idea was for each farmer to do exactly as he would on his own property," Brian said.

"They used their own machinery set up the way they wanted it and operated at the depth and speed they chose."

Each farmer explained features of his machine, his set up and operating philosophy before the seeding run. "Essentially they said what they were going to do and away they went."

The organisers mounted a video camera under the bar on each machine so everyone could 'see' what was happening at ground level while the machine was working, something everyone found 'quite revealing', Brian said.

Nine seeders – five discs and four tined machines – are being showcased in the demonstration, which was seeded on



THE DUAL TINE SET UP OF THE SEED HAWK IS QUITE DISTINCTIVE.

May 9, with dry topsoil but good subsoil moisture from 40 mm of rain on March 1.

The disc seeders range from a massive 18.3 m Tobin machine that has 60 cm discs and weighs 22.5 t without seed or fertiliser, to an 'entry level' set-up with bolt-on Disca-Mate single-disc openers on knife points on a 12.2 m Concord bar.

Other machines in the demonstration are a 13.7 m K-Hart, a 21.9 m Morris contour drill, a 12.2 m Borgault standard tine machine, an 11 m Ezee-On air drill with discs, a 24.4 m Seed Hawk dual-tine machine, a 12.2 m Concord with Anderson openers and an 11 m John Deere disc machine.

Row spacing ranged from 330 mm to 250 mm, with 250 mm the most common.

Units that attracted particular attention from farmers present for the seeding day were the Morris Contour drill, the Tobin Bullet and the Canadian Seed Hawk tined machine, Brian said.

The performance of the machines is being assessed on crop performance during the growing season and at harvest, when yield, protein and grain quality will be measured.

The first post-seeding assessment, a plant emergence count 15 days after sowing, proved interesting, with some areas almost fully emerged and others with little if any emergence, something Brian attributes to different seeding depths, with some seed almost on the surface and other machines set too deep, probably in an effort to place the seed on the sub-soil moisture.

Many of the disc machines had little or no emergence on the clay flats but moderately good emergence on the sandy rises and all the areas sown with disc seeders showed signs of 'trifluralin poisoning', particularly where surface residue had 'hair pinned and been pushed into the seeding slot with the seed.

Visually the Seed Hawk, which is set up for 330 mm row spacing and is fitted with splitter boots that spread seed over a width of 75 mm along the row, was 'way ahead', he said, with good emergence on the flats and sand hills; an assessment backed up by the in-row plant counts of 90 plants a metre of row. The row counts will be converted to plant densities per square metre.

The Borgault machine had the next best emergence at that early stage, with an average of 36 plants a metre of row. There was little germination in the area seeded with the Morris Contour machine at that stage, the K-Hart had a lot of dry soil around the seed and the Disca-Mate had sown very shallow, with a lot of seed on or near the soil surface.

There was a good fall of rain a day or two after the initial assessment, so things were very different on July 2, when the next assessment was done, with much of the seed that had not germinated at the time of the first assessment jumping out of ground once the topsoil was wet.

However, there were still some significant differences, with 'issues we simply never thought of popping up'.

At that stage the area sown with the Seed Hawk was still clearly the best, he said, with the performance of the disc machines assessed as the worst, largely due to the crop on the sandhill sections of their runs being smothered with brome grass; probably as a result of the interaction between the disc set ups and the trifluralin incorporation.

Brian estimates the difference between the Seed Hawk and some of the discs machines at '80 to 90%'.

There will be a field day at the demonstration site on Wed, October 24.

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