

Discussion points

Stubble Field Day

Friday 26, September 2014

Pinery – John, Clinton and Derek Tiller’s farm

- Standard and wide row spacing, impact on frost damage
- Sowing time: sown crop plus resown area with same variety at different maturity dates, impact on frost damage
- Talk about Morris Razr disc seeder, bait spreader attached to seeder bar to bait mice
- Launch GRDC project
- Sam Holmes and Mick Brougham to discuss herbicides, stubble and disc seeders

Morris Razr bar – Derek Tiller

- Was the best available disc in their opinion for a return to narrow rows (190mm).
- 12m for controlled traffic use
- Bigger discs, heavier – downside is that it is easy to sow too deep
- Need to think about longer coleoptile wheat which can be sown deeper
- Enables more ground speed
- Needs more HP to pull compared to their old K-Hart – 20t with the box so will now have to upgrade tractor
- They are adding half tonne more weight to keep the wheels on the ground
- Needed to add new mud scraper and gauge wheel to overcome blockages
- Ben Marshman and Andrew Bruce have the same machine in the district
- In the first year – changeover year – the gauge wheel riding up on the ridge caused problems and perhaps they should have sown deeper than they did.
- They sowed at about 12kph and hope to speed up to 16kph
- They sowed their hill country first and by the time they got to their flatter ground it had become quite wet. In hindsight should have sown flats first.

Mouse Baiting – Derek Tiller and Bill Long

- Better if done before seeding
- 5% threshold to make baiting worthwhile
- If there are around 400 spikes/square metre, how many are actually affected?
- Density of the mouse population affects litter size

- Harvest hygiene can be more important than baiting now – how much are you putting out the back of the header which become mouse food?
- Be cautious baiting now – don't risk contamination
- Patrick Neal – has used a UAV to pick up white heads across a paddock

Frost – Derek Tiller

- They like to get their wheat all sown before the end of May. They start early so that the last paddock is not sown too late.
- 75kg/ha around the outside then most of the rest at 60kg/ha, some at 90kg/ha and 120kg/ha
- The wide rows were hit harder by frost – there was more stem frost because the cold was able to penetrate the canopy.
- He thought losses could go as high as 50% but were nowhere near that bad. Crop has freshened and compensated.
- Plants with frosted stem and head are maybe only 10-20%. In a tight finish to the season it may actually be an advantage to sacrifice a few heads.
- There is a need to push maturity earlier so there is the most water in the profile at flowering but then the frost risk might be higher – that may be worth the gamble.
- Cobra and Mace were the varieties. Would like to have some Trojan to be able to compare.
- With early sowing there are differences in frost susceptibility between Mace, Cobra and Trojan but this evens up if sown later.
- Sometimes mixing varieties reduces frost risk but you will get paid on the minimum classification variety.
- Probes don't measure accurately in vertically cracking soils.

Sowing Cobra / Mace – Derek Tiller

- Sowed, had significant rain event and then experienced Boxer Gold and Roundup damage
- Resowed with Mace @40kg/ha when the Cobra was 3-leaf stage
- Different maturity dates – will make it difficult to spray top
- There was drying soil before the rain event. They were sowing at 25mm, should have sown deeper. With disc seeders if you are sowing dry and then get a 5mm rain event you can experience herbicide damage.
- If you mix varieties and one is subject to weather damage it could be a problem. Probably better to separate into different paddocks as the mix can put the whole paddock/farm at risk. Can be headaches with variety mixes if you sow early.

Kelvin Tiller's Lentil Site (Hart Field Day Group Project)

Sarah Noack talking about sowing lentils into wheat stubble

- Lentils sown onto different stubble treatments (I missed her description of the treatments)
- 20 x 80 m long plots
- No significant difference in establishment over the different treatments
- Spot measurements of soil moisture were made 50-70cm down. The baled treatment had less moisture than taller stubbles.
- The stubble treatments were done in late Jan so they would have picked up all the summer rain
- Taller stubble (30cm) gives taller lentil plant height
- Yield average for lentils was 2.4t/ha. The range was 2.2t/ha (baled) to 2.8t/ha (30cm stubble) but this was not significantly different.
- 30cm was max straw height, interrow sown on 12" spacing on 10 May with Flash variety

Kelvin Tiller – stripper front harvesting

- When harvesting with stripper front can be a problem getting sprays onto the soil (Sakura, Boxer Gold, Propizamide)
- With stripper front straw it's hard to monitor for insect damage from mandalotus and etiella.
- How much stubble is too much? Should you leave to maximum? The benefit of the stripper is you can increase capacity by 30% for a faster harvest. You can come back again later to cut it down to 30cm.
- With 30cm there's less chaff on the interrow. Cutting down to 30cm goes through the header and chopper giving just a nice layer of material and just a bit of bare soil.
- Using the header later on to get it to 30cm is a good system – finer chaff material that breaks down quicker.
- Cant grow oaten hay after the stripper front has been through as they don't want stubble in the hay.
- Mick Faulkner – 30cm stubble with lentils sown into it can increase the risk of Eyespot
- Lentils with high residue loads – more disease and less vigor. Less mineralization in the soil. Need to sow earlier. Works ok dry but not wet, poor establishment. Costing us in terms of plant management and yield.
- Maybe consider more UAN put down with lentils for early vigor.

Kelvin Tiller – in paddock – discussion on disc seeder

- Bought a disc seeder to manage stubble but he's now still trying to manage stubble!
- Uses a stripper front header and Aricks wheels on the seeder to deal with trash and also crop safety (removing chemical from the seed row)
- Put the Aricks wheels on in the transition year – going from different wheel spacing. It was a help in the first couple of years as it removes chemical out of seed rows and helps with hairpinning.
- They make it safer to go out in front of seeder with Boxer Gold and Sakura but they can flick rocks up and sometimes interfere with gauge wheels and seed boots
- \$25k for 44 openers
- Aricks wheels don't work well in the wet. If wet below and a dry crust on top, the Aricks wheel removes the dry soil and then the wet soil below blocks the disc.
- Richard Konzag – 1800ha program, 60ha with the Aricks wheels. They jammed up and were sent back to factory for modification under warranty. Some hairpinning.
- Transition year always a problem when changing row spacing.
- Stephen Matchoss – used disc for 6 years. The best results were in the first few years. Worse now with more stubble residue. Now gone to residue managers – much better.
- Mark Hill – rhizo and hairpinning causing a change from discs back to tines
- Chaff windrow behind barley can be a problem with the disc at the next sowing. Try to match the header front width if possible.
- Kelvin Tiller – we get too hung up on getting the crop in too quickly!
- Mick Faulkner – Canadian example – average annual rainfall +20% and no working weekends. Don't rush everything through in two weeks!

Kelvin Tiller – back in his shed at lunch – his disc seeder

- 2010 John Deere disc on 10" (up from 9.5")
- Machine was light and needed weight added for better penetration but it was good that it required less horsepower to pull it
- Spoked presswheels – don't smear in sticky country, stay on the ground more
- When discs get worn they cause more hairpinning. Generally discs are worn in one year (2200ha) but depends on soil type and rainfall.
- The machine has three rows of discs 5" apart. That is ideal as it allows for 5", 10" or 15" spacing of different crops.
- Paired with a 12,000L air cart
- 11-13kph speed
- Aricks wheels clear stubble away and give clean soil for disc to penetrate and not carry through chemical. Closes after machine goes through

Bill Long – liquid system

- Has put liquid system on trial seeder

- Mick Faulkner 's client has liquid system for Zinc and Fastac application. He has also used Aricks wheels and said that the only tie they work is when you don't need them!

Andrew Bruce's canola site with Beet Western Yellow Virus – Paul Umina and Ken Henry to discuss BWYV and stubbles as well as other insect pests

Paul Umina – entomologist - BWYV

- Green peach aphid is main vector for BWYV in canola and pulse crops sown in autumn
- Resistant to variety of chemicals. Foliar chemicals failed to control it. Widespread SP resistance.
- Also resistant to pirimicarb (resistance since 2010 in WA) No control at registered rates and most populations are now resistant
- Green peach aphid is asexual so all offspring are resistant so we have some populations that are resistant to SPs, Pirimicarb and OPs.
- Transform is the only product that is still working in South Australia. Cutting rates of this product to save money increases the likelihood of resistance developing.
- Ops might be dose dependent but we cant guess that from the resistance screening test in time for farmer to react.
- There is no confirmed imidacloprid resistance yet but it is suspected (Confidor)
- It was thought that there might be an anti-feeding effect of SPs even if the aphids were resistant to them but this is not the case so DON'T DO IT!
- There were ideal conditions for the aphid – wet summer, green bridge material. They are polyphagous – eat a huge range of plants like marshmallow, mustard, capeweed, sow thistles – so there was lots of green bridge material available for them. Lots of aphids got into crops early.
- In Vic most canola was sown with insecticide imidacloprid seed dressing. Some changed later to fipronil but that was not effective on the aphids
- Mild May and June weather contributed to the problem. There was a drop off in aphid activity as the weather got colder but that was quite late this year.
- The BWYV exists in most of the green bridge plants and the peach aphid transmits it to the crop at 96%!
- The cabbage aphid can transmit at 14% but is only around in the spring
- Stubble and aphids – aphids focus on the high end of the light spectrum (yellow and green) so where there is no stubble the green stands out more to the aphid looking for a feed.
- Frost wet and cold conditions knock them out.
- If we had gone in earlier with Transform instead of OPs we might have had more control but at that early stage the product was not even in stores yet.

Millipedes, Earwigs, Mites and Slaters – Paul Umina

- Poor knowledge, only recent
- Few chemical options – Fipronil as a seed dressing (canola only)
- Slater and millipedes feed on organic matter so stubble retention can cause their numbers to build up
- They occasionally attack canola, lupins and chickpeas
- It is important to make sure that these pests are actually causing damage and not just present in visible numbers and feeding on dead organic matter. We don't know why they suddenly may start to eat live plants.
- In terms of management going into the season – eg burning stubbles can be effective if you get the timing and temperature of the burn right. Baits and bifenthrin used later are not as effective as the burn
- Light tillage and the removal of some stubble can be helpful
- Earwigs – seed treatment possible. Make sure you identify the pest as the European earwig as there are native beneficial earwigs.
- Mites – ID is also critical as there are lots of good ones. For RLEM and Blue Oat mite there are lots of chemical options.
- Ballaustium mites don't respond to chemical treatments, very tough to kill.
- Bryobia mites – some chemicals work, others don't. There are multiple species with different responses to SPs. LeMat and Talstar seem to work but Fastac not so effective.

Armyworm – Jeff Braun

- Lays eggs in retained wheat stubble
- Cheap SPs work well
- Armyworms are easy to find
- Cutworms bare out an area in 2-3 leaf crops and are harder to find

Diamondback Moth

- Not a major issue in the mid north but every paddock is different
- Monitor 2x per week in warmer spring conditions, rain will wash off protective chemicals
- Lots of green bridge weeds to feed on
- Predators struggle to control it
- Affirm works on them but supply has been limited
- SP resistance
- Riverland numbers have been very high 300-1000/10sweeps
- Only spray if the pods are being eaten and you are at the spray threshold (100 moths in 10 sweeps) and observing damage
- Be aware of a 14 WHP on sprays used close to harvest
- Love a warm dry spring
- We need to know more about predators as we are nearly out of chemicals
- There is a fungus that feeds on them but it needs 5 mm of rain to activate it.

Mick Faulkner – Andrew Bruce's canola

- Canola looks better where it was sown into a standing wheat stubble
- Early sowing – more BYDV
- Tine sowing acted as an aphid deterrent compared to discs???
- Some hairpinning with discs
- In the vertisol soils the disc was better than the tine