

# The Link

FarmLink Newsletter

Vol 39. - Spring 2014



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Dear FarmLink Members

Welcome to the Spring edition of The Link. I hope that you are all keeping well. There has been a flurry of spring field days around the region (I hope you didn't miss the Open Day – it was a great day see page 8). We are busy capturing plant and crop data at our trial sites and wind rowing canola at TAIC. Crops at TAIC look ok but as you too are well aware, the season is a bit of a mixed bag.

Thank you to everyone who completed the member profile survey. I know it was an effort (I had to complete it for my brother – it was like pulling teeth!) so thank you the outcome is really worth it. We have analysed the responses and you can see some of the interesting statistics about FarmLink members on page 3 of this edition of The Link.

I would like to thank Erika for her work on the member profile project. She finished her practicum with us at the end of August. Erika has been a lovely presence around the office and has done some great work in the time she has been with us. Erika finishes her Ag degree at the end of this year – is a credit to CSU and would be a fantastic addition to any work place. We wish her all the best for her future.

From now on you will see us using the member profile information in our project applications and reporting, in the tailoring of our field days and our communication activities. For example, about 70% of members' who responded use a stubble retained system for at least a portion of their cropping program - so in this edition of The Link we have a case study that relates to stubble management. In addition to this there is a guideline on nitrogen utilisation in stubble retained systems. This can be viewed on our website. Did you know that if you plant your crops into

stubble they need more nitrogen? Find out why and how to manage your nitrogen more effectively. [This article is delivered to you as part of the GRDC Funded CSIRO/FarmLink Stubble Initiative Project].

GRDC research investments for 2015/16 closed on the 23rd October and we used information from the member survey to support our applications for research in – weeds and weed management, fodder and forage legumes, subsoil acidity and nitrogen management. We have also approached other funding partners in an attempt to secure investment in the moisture probe network and the weather or not for next year. From both a research and financial perspective I hope to be able to tell you by Christmas how we have gone.

Since the last edition of The Link we have completed our move to the Temora Agricultural Innovation Centre. Consolidation of the business into one office has brought welcome savings in both dollars and time. We are on track to break even or make a small surplus this year which is a tremendous result. Thank you everyone for your ongoing support and patience while we put our house in order.

Strategically FarmLink is focusing on outcomes and adoption. In practice that means ensuring that the best research is undertaken in our region and then working with our members to develop and localise the results and information so that farmers in our region can easily and confidently make changes to their farming practices. Through the member survey we can identify farmer research needs, measure the impact of our activities on farming practice and demonstrate success to our funding partners. It's really very exciting.

# CEO Message cont.

In the lead up to the recent round of GRDC investments we have worked very closely with GRDC, Central West Farming Systems and Birchip Cropping Group to develop a new approach to project costing that allows full cost recovery on projects and will be instrumental in the long term sustainability of farming systems groups.

We are now focussed firmly on our existing projects and future initiatives to deliver value to members - like establishing regional trial sites, developing a suite of livestock RD&E activities and securing funding to support weed, soil constraints and nitrogen management research activities (the top three issues identified by members). Four of our current projects will finish in June 2015 -

- CSP00146: Facilitating increased on-farm adoption of broadleaf species in crop sequences to improve grain production and profitability.
- AOTGR1-955086-42: Farmers Leading and learning about the soil carbon frontier
- AOTGR1-145: Enabling landholders to adopt profitable and sustainable carbon cropping practices.
- CLG-1206248-847: To Burn or Not Too Burn

There will be interesting results coming out of these projects along with data from Grazing Canola demonstration, Canola pod shatter trial (wind rowing vs direct heading) and the herbicide systems trial all conducted at TAIC this year.

I would like to welcome Debbie Clarke, our new office manager. Originally from this area Debbie joins us from the department of juvenile justice in Queanbeyan and brings a wealth of administrative and book keeping experience to the job.

Last but not least I would like to say THANKYOU to Cathie Fox who was filling in as office manager during our transition to Temora. This temporary arrangement lasted nearly 6 months – so I thank Dave and Dan as well, for managing without her! Cathie has done an amazing job sorting out our financials and financial reporting along with coordinating our move, helping to find Debbie and basically making my life easier in every way, everyday! Cathie I am very grateful and I know I speak on behalf of the board and the rest of the staff when I say that you have made a huge difference. Thankyou!

I would like to invite you and your family to join us on the afternoon of the 19th December for Christmas drinks – we will be putting together a short program looking at post harvest stubble management and livestock confinement lots followed by a short meeting of members and then a family oriented Christmas function. Closer to the date we will provide you with all the details which depending on numbers will include bus transport from key pick up points around the region.

Good Luck with harvest and I hope to see you all at the Christmas party!



Cindy Cassidy  
FarmLink Research CEO

## **NOTICE OF GENERAL MEETING OF MEMBERS**

19th December, 2014, 4pm at TAIC, 361 Trungley Hall Road, Temora  
To normalise the appointment of Twomey's as auditors of FarmLink

# Project Update

## A graphic representation of FarmLink's 2014 Member Survey

Thank you for completing your Farmer Member Survey. It was created to help us better understand who our members are, what you are doing on farm, what changes you have made to your farming practices and why you value FarmLink. We have found the information generated from the project already invaluable as some of the data was presented to the GRDC Southern Regional Panel recently.



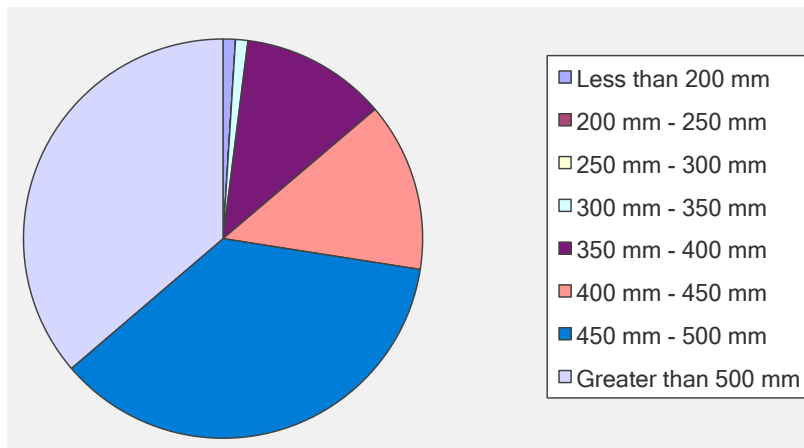
We thought you might be interested in reading some of the interesting statistics that have come back from our Survey.

### FarmLink Membership at a Glance

- **320** members
- **93%** farmers & 7% advisors & industry partners
- Manage over **720,000 ha** out of 1.2 million ha
- Farm sizes vary from 10ha up to 40 870ha
- 63% are 40-60 years old
- **77%** mixed farmers & **23%** continuous croppers
- Employ approx 825 people on farm



### Average annual rainfall of FarmLink members



### Practice change taken place via communications from FarmLink

- Cereal Grazing
- Nitrogen management in crop using PAW
- Magnesium & Calcium supplements for sheep
- Early sowing of cereals and canola
- Reduce tillage
- Stubble retention
- Summer weed control & water use efficiency

# MAINTAINING PROFITABLE FARMING SYSTEMS WITH RETAINED STUBBLE

## Enthusiasm and knowledge drive success in stubble system

A long-term interest in soil structure has guided Derek Ingold's journey from a system of direct drilling in the late 1970s to controlled traffic in the early 2000s, through to a full stubble-retention system today

PHOTO: ALEXANDER INGOLD



An unwavering commitment over several decades to optimal soil structure and better land management meant that, for Derek Ingold, moving to full stubble retention was an obvious goal.

Achieving that goal has been a challenging learning experience, but it has produced valuable insights and long-term strategies, including the need to set up quite separate systems for his property's frost-prone areas.

Derek and Susan, their son Alexander and Derek's mother Beverley run a 2400-hectare mixed farm at Dirnaseer, 38 kilometres west of Cootamundra, cropping wheat, canola and barley, and running 2500 first-cross ewes.

The family moved from Wallendbeen, NSW, when Derek's father John bought the farm in 1960. Derek studied for a Diploma of Applied Science at Wagga Wagga Agricultural College, then completed a

Before switching to discs, Derek found he couldn't inter-row sow on his undulating country because his seeding rig would crab down on the hillsides.

PHOTO: SARAH CLARRY



### SNAPSHOT:

- **PROPERTY:** 'Ingola'
- **OWNERS:** Beverley, Derek, Susan and Alexander Ingold
- **LOCATION:** Dirnaseer, New South Wales
- **FARM SIZE:** 2400 hectares
- **ANNUAL RAINFALL:** 525 millimetres
- **SOIL TYPE:** red kandasol with gravelly ridges and creek loams
- **SOIL pH (CaCl):** 5.0+
- **ENTERPRISES:** crop (70 per cent), pasture (25 per cent), remnant vegetation (5 per cent), sheep (2500 ewes)
- **TYPICAL CROP SEQUENCE:** cereal/broadleaf/cereal
- **CROPS:** canola, wheat, barley, albus lupins
- **EQUIPMENT:** 12-metre Boss disc seeder on 254-millimetre row spacings with Flexi-coil air cart; 36-metre self-propelled boomspray; International 8120 harvester with 12-metre front; three-metre John Deere Track tractor (all on a three-metre controlled-traffic system)

# MAINTAINING PROFITABLE FARMING SYSTEMS WITH RETAINED STUBBLE

year of postgraduate study at the University of NSW.

When Derek first came home to farm, he and his father were direct drilling, which was a full cultivation. One sowing pass with a full breakout was, he says, common practice by the early 1980s.

The erosion caused by these traditional practices alarmed him, but his options were limited. At that time there were very few alternatives for weed management, and labour was always tight as just he and his father farmed the area. When his father retired, Derek farmed on his own for several years until Alexander came home.

“That was a great help,” Derek says. “We’ve doubled our area in the past 10 years.”

When Derek bought the airseeder in the late 1990s it was on 178-millimetre spacings, for the purposes of incorporation. Over a period of four to five years, Derek went from 178 to 230mm spacings and eventually to 305mm spacings to try to get through the stubble. During the drought years of 2004–2008 they were keeping most of their stubble to retain moisture, although there was very little there.

“Lots of years we were able to get through the stubble with the gear we had, but it was barely adequate even for very ordinary crops. Once we hit a better paddock or a better year, the system was not going to work.”

When the Ingolds changed from rotary harrows to a press-wheel system on their tine machine, they had the press wheels inside the frame. This worked well for seed placement but it restricted trash flow.

“We just didn’t know whether we would get through the straw until the day we started sowing,” Derek says. “Then we’d have to go back to paddock preparation. And because we were on a 305mm system, the stubble was very hard to burn unless we were prepared to knock it down. So it was just getting too difficult.”

## DISC SYSTEM

Derek realised that if he was going to retain stubble, he would have to ‘bite the bullet’ and buy a disc unit. Initially he was reluctant because he had seen others using discs and having problems, mainly with hair-pinning – where the disc fails to cut the straw and instead pushes it into the sowing furrow with the seed. Most of the systems he had seen had Aricks Wheels to clean the rows, but Derek did not want “another thing hanging out the front of the machine asking to get broken off”.

Also, as it was “a couple of hundred thousand dollars just for the tool bar”, he wanted to be sure it would be the right equipment for the long term. So he did his research.

“Most of the discs were almost vertical with a slight angle cutting into the soil. These disc machines weigh 15 to 20 tonnes because they rely on the weight of the machine for soil penetration,” Derek says.

“The Boss discs we bought, which are modelled on an American style, have a greater disc angle, which means they bite into the soil without requiring all that weight. The lighter weight means less pressure on the bearings and less maintenance, which is one of the perceived disadvantages of discs.”

## MOISTURE RETENTION

Derek turned to stubble retention to improve soil structure and infiltration rates.

He says there is little difference in moisture retention between a stubble and a non-stubble system up to the time of sowing, provided the grower in the non-stubble system burns immediately before sowing. But once the crop is in, stubble retention starts to make a difference.

“The quicker we can get canopy closure, the quicker we’ll start to save moisture. And sowing into straw we’ve got canopy closure almost from the day we sow.”

PHOTOS: SARAH CLARRY



Derek turned to stubble retention to improve soil structure and infiltration rates, rather than for nutrient benefits.

**STUBBLE MANAGEMENT SYSTEM STARTS AT HARVEST TIME.**

**EXTRA STORED MOISTURE IS ONLY GOING TO MAKE YOU MONEY IF YOU USE IT.**

## THE INGOLD’S JOURNEY TO FULL CONTROLLED TRAFFIC AND FULL STUBBLE RETENTION

1970	1980	1990	2000	2010	
<p><b>Late 1970s</b> Direct drilling: one sowing pass with full breakout</p>	<p><b>Mid 1980s</b> Removed cultivating tines on combine</p>	<p><b>Late 1990s</b> Bought first airseeder with narrow Agmaster points, rotary harrows, 178mm row spacing</p>	<p><b>2005</b> Partial CTF on 2m system. Contract GPS, 230mm row spacings</p>	<p><b>2011</b> Bought 8120 Case harvester with 12m draper front</p>	<p><b>2013</b> Bought MacDon self-propelled windrower to fit 12m draper front on header</p>
			<p><b>2006</b> Moved into press wheels, bought first GPS unit, 305mm row spacings</p>	<p><b>2012</b> Bought Boss disc seeder on 3m with 254mm row spacings</p>	<p><b>2014</b> Bought 36m self-propelled boomspray on 3m centres and modified residue handler for 8120</p>
			<p><b>2007</b> Went to RTK, converted to 3m partial CTF system</p>		<p><b>December 2014</b> Taking delivery of John Deere track tractor on 457mm tracks and 3m centres. This will complete the 3m CTF system</p>
			<p><b>2009</b> Modified airseeder cart to 3m</p>		

# MAINTAINING PROFITABLE FARMING SYSTEMS WITH RETAINED STUBBLE

PHOTO: SARAH CLARRY



However, that early shading of the seedlings by the stubble can also mean slower germination and poor early vigour – as he observed in the 2014 season.

“I’d be surprised if our canola plants saw any sun at all for the first six weeks of their life,” he laughs. “Stubble-retention paddocks always look terrible until about mid-August. But they turn into magnificent crops.”

Derek believes stubble-retained paddocks “come home better”, particularly in a dry finish. But he concedes it can be troubling when looking at these struggling crops early in the season.

The other reason Derek likes the stubble system is the labour-saving component. When he was still burning stubbles he would spend up to two weeks on the task and it was weather-dependent.

## GRAZING

When Derek first started retaining stubble he was hesitant about grazing it because he was worried it would damage the soil structure. Then in 2008 FarmLink and Dr James Hunt, CSIRO, ran a water-use efficiency trial, funded by the Grains Research and Development Corporation called ‘Catch More, Store More, Grow More’, at Temora, NSW.

Derek joined the project’s steering committee and Dr Hunt asked him what he wanted from the project.

“I said I’d like to know how many dollars a hectare in damage these sheep are doing to my cropping country,” Derek recalls.

The trial results were a pleasant surprise. There was surface compaction to about two centimetres, but with a disc machine and good soil structure, this would not pose a problem. Over several years the research team also found that grazed stubbles had more available nitrogen at the start of sowing than those that were ungrazed.

That research has had a big impact on Derek’s management. He had been reducing sheep numbers to accommodate a no-grazing system, and at one point was down to 1100 ewes. Now two-thirds of his

farm area is stubble, which provides grazing for all his dry ewes from December through to March–April. All the high-energy lucerne pastures are kept for the lambs, which are sold in July.

Lambs also benefit from the dual-purpose wheat and grazing barley that Derek puts in each year. This fills a feed gap and he gains the added benefit of nutrient recycling extending into the winter cropping season. Another advantage of grazing stubbles is that the sheep clean up the spilled grain, so mice are less of a problem.

## ZONING

After several devastating frosts in the late 1990s and early 2000s, Derek reworked his rotations. His solution was to zone the property according to altitude, with different rotations for high and low country.

The relatively frost-free higher country is used for long-term cropping. It is cropped for 10, 15 or even 20 years until it is no longer feasible due to weed pressure or nitrogen requirements. Derek then introduces a pasture phase for four to five years.

The frost-prone country is mostly grazed, with short cropping phases of four to six years. He works on weeds in the second-last year of the pasture phase. In the last year of pasture he uses Roundup® (glyphosate) to remove all the ryegrass.

Derek explains: “The first year we generally put in a grazing wheat. There is no nitrogen requirement and very little weed control needed, because we can fix the weeds cheaply coming out of the pasture phase. The next year we might go in with another wheat or a grazing barley, so we have two cereals. There might be a bit of ryegrass by then so we bring in canola to clean it up, then one or two wheats and sow it out [to pasture]. We might apply a bit of urea at a lower rate for the last two cereal crops.”

With this system, Derek can keep his input costs low on the higher-risk country. Four out of five years, the crops are grazed, so even if he gets no return on the crop (because of frost) he has made money from meat production.

The 2014 acquisition of a Case self-propelled boom sprayer and a John Deere track tractor completes Derek’s conversion to a full controlled-traffic system and means that Derek and Alexander are now able to manage all on-farm operations themselves.

PHOTO: GREG CONDON



Acid soils are a feature of the region, but ongoing liming over many years has increased the pH of the Ingolds’ soil to an average of about 5.0 (CaCl). Derek doesn’t incorporate lime, but believes the biological activity of the soil in a well-managed stubble system will assist with incorporation.

## RESEARCH AND INFORMATION

Derek Ingold looks to research, field days, publications and local producers to inform his farming decisions. He also credits his agronomist, Greg Condon, with helping him make his stubble system work.

“Greg already had a few clients with discs – he’s pretty passionate about straw,” Derek says.

“Enthusiastic consultants attract enthusiastic farmers, and vice versa.”

He also says the knowledge he has gleaned from the research that FarmLink has done has been invaluable.

“Along with their work on water-use efficiency, FarmLink did a lot of research on dual-purpose wheats with the Grain & Graze system.

It would be hard to say how many hundreds of thousands of dollars those two pieces of research make me every year.”

# MAINTAINING PROFITABLE FARMING SYSTEMS WITH RETAINED STUBBLE

PHOTO: NICOLE BAXTER



## STUBBLE MANAGEMENT ON ZONED COUNTRY

Derek manages his frost-zoned country differently to his higher paddocks. In these areas he burns the stubble, for three reasons:

- he believes the structure of a short rotation is less important because there is a short time between pasture phases when most of the organic matter is built up;
- the country is flat, so there is minimal erosion; and
- further FarmLink research at Temora has shown frosting to be far worse in stubbled crops, so he does not retain stubble in the frost zone.

## WEEDS AND DISEASES

He concedes that a disadvantage of the zoning system is the pressure he puts on his frost-free country.

"We have to be more astute with our weed management, certainly, but we have zero tolerance for weeds. We keep the paddocks absolutely clean from harvest right through to the day we sow," he says.

"For weed and disease control – especially foliar diseases in cereals – we have strict rotations. Discipline is critical in a stubble-retention system. Our rotation is basically broadleaf/cereal/broadleaf/cereal/broadleaf/cereal. Occasionally I might have two cereals with the second being barley."

This regime allows Derek to rotate his herbicides, from triazines and the newer herbicides such as Sakura® for grass weeds. He windrow burns on occasion, and would like to do more, but the system means fire can run out of the canola into the wheat stubble and burn the whole paddock.

Yellow leaf spot is potentially the biggest disease problem Derek faces. It can occur even after a break crop because the straw is still there. Crown rot is also a threat, although by avoiding two cereals in a row, he reduces his risk.

## EARLY SOWING

The information from Dr Hunt's water-use efficiency research has also guided Derek's time-of-sowing decisions. By managing weeds in the fallow, and

keeping straw cover, there will be more available moisture for the coming cropping season.

But extra stored moisture will only convert to yield if it is used. He is now sowing his early varieties even earlier and he has moved away from late varieties altogether.

The greater root mass achieved by the earlier-sown varieties means improved access to moisture and nutrients late in the season, compared with the late-sown varieties.

## STUBBLE HEIGHT

Derek's advice on stubble height is: "Cut as high as possible."

"Many people cut it low so they can handle the straw. But where discs run into problems is not with the height of the straw, it's what's on the ground. When it's cut short, all that trash has to be spread properly, otherwise it's best left standing.

"Stubble management starts at harvest time," Derek says. "Lower-cut crops put about 50 per cent more straw through the machine."

A good spreading system also gives herbicides the best chance for soil contact.

## FUTURE PLANS

Derek has been farming with full stubble retention for the past three years and, for now, he is content to maintain the same gross margins as before while he fine-tunes the system.

"You have to have a bit of confidence in yourself and confidence in your cash flow to go into stubble farming. You're going into uncharted waters."

So what are Derek's plans for the next five to 10 years?

"We've just got to refine the system. I wouldn't be where I am now without the passion and drive of my son Alexander; the changes I have made in the past few years have been at his urging. We are dedicated to making it work."

"The people who are going to drive stubble farming in the next 10 years are those who are innovating now; growers who are passionate and dedicated and won't let the system fail."

Derek decided on the Boss disc seeder because the greater disc angle allows the machine to be made lighter than others on the market, reducing wear and maintenance requirements.

**ALL OUR ZONING IS PURELY ON ALTITUDE; NOT ON SOIL TYPE, NOT ON EROSION RISK.**

**ENTHUSIASTIC CONSULTANTS ATTRACT ENTHUSIASTIC FARMERS.**



## GRDC

**Grains Research & Development Corporation**

Your GRDC working with you

## GRDC PROJECTS:

**FLR00005 – Catch More, Store More, Grow More:** integrating soil and crop management to improve whole farm WUE in the mixed farming zone of southern NSW

**CSP00174 – Maintaining profitable farming systems with retained stubble in NSW south-west slopes and Riverina**

# Events

## FarmLink Open Day - 11th September, 2014

FarmLink held its annual Open Day at the Temora Agricultural Innovation Centre (TAIC) on Thursday 11th September, 2014 the event featured research trials and provided the latest information designed to progress regional agriculture.

The Open Day attracted more than 150 farmers, consultants and students who were able to hear from leading industry researchers about the latest innovations in crop rotations, time of sowing, frost impacts, ryegrass management, stubble management, herbicide applications and merino genetic and genomic trials.

The grazing canola demonstration site at TAIC created a lot of discussion in regards to the do's and the don'ts of variety types and time of sowing. Dr Susie Sprague from CSIRO explained dual-purpose canola provides a significant opportunity to increase profitability as it can be grazed by livestock during the vegetative stage and then grown on to produce grain. An important point was made that grazing canola can increase the servery of blackleg, but this can be overcome by choosing a cultivar with good blackleg resistance. You can read more about dual-purpose canola on pages 13-15.

The GRDC Stubble Initiative research program managed by CSIRO and FarmLink is in it's first year at TAIC and the Open Day showcased a plot trial established into an existing population of ryegrass. Disc and tyne sowing systems and different crop rotations have been implemented at the site to assess their impact on weed control the next five years.

The Open Day saw the release of two new wheat varieties – Sunmate and Viking along with the new canola variety – Hyola RT. These releases were accompanied by seed giveaways and three of our members – Donald Coddington, Chris Golder, Jason Coleman and Sandy Biddulph were the lucky winners.

The afternoon included presentations about other research happening at TAIC - one from Craig Wilson discussing results from the Peter Westblade Memorial Merino Challenge, the nation's largest commercial evaluation of merino genetics; another from Sally Martin, consultant and CEO of MerinoLink, talking about genomic evaluation of young rams and its value in breeding programs; and finally Dr Ben MacDonald and Dr John Angus from CSIRO discussing nitrogen dynamics and management.

Finishing the Open Day on a high note, the Temora Ag Bureau coordinated a 'Chaser Bin Challenge' where the unloading speeds of four farmer owned chaser bins was assessed. There was no scientific rigour to this demonstration but it created a great deal of interest. If you would like more information regarding the Chaser Bin Challenge contact Alex Goesch [algorithms@bigpond.com.au](mailto:algorithms@bigpond.com.au)

Industry feedback following the Open Day was very positive and we will be working closely with our members and industry partners to make next year's even better.





# Events

FarmLink has been very busy bringing you events over winter and early spring. Pictured below are action shots from our Annual Dinner, Winter Bus Tour, Barellan Field Day, FarmLink Open Day, Australian Universities Crop Competition and Livestock Handling Management Field Day.



# Temora Agricultural Innovation Centre Update

## Manager's Update

### Tony Pratt

At the Temora Agricultural Innovation Centre (TAIC) the widely predicted shorter spring for this year has had an impact on production as a whole. We have had inadequate growing season rainfall through late winter and spring but the crops have battled surprisingly well and the smaller than forecasted rain events have kept things ticking over. It will be another season where due to seasonal influences we will be unsure of potential yields until the harvester has the first grain tank full.

The severe frost events we had in August has had an impact on some earlier sown crops here at the TAIC. The Mandellup lupins sown just prior to Easter had reduced flowering and possibly 40% damage to the plant biomass. They have recovered to some extent and produced quite a few pods on lateral branches. Some damage is also evident in the canola and cereals. Some of the early sown wheat trials have exhibited lodging from the zones where the stem frost caused severe plant tissue damage. In canola we have pods and seeds within pods aborted and expect this to drag our potential back a little as well.

The trial paddocks have been a hive of activity all year and were a patchwork of colour through the spring. Most days there are company representatives at the centre gathering information and data from their trial sites. Some useful trial outcomes are expected and the opportunity to get onto some of the small plot harvesters and gather that all important yield data is not far away.

The trials have been exhibited to their maximum potential this year with great attendance at the TAIC Open Day on September 11th, as well as a host of other field events and tours.

The TAIC was fortunate to host the Australian Universities Crop Competition which ran over three days 17th-19th September, and utilised the range of facilities at the Centre. It is great to see the TAIC being used for such worthwhile educational opportunities and to be fostering the learning in agriculture. I had the opportunity to take the participants on a tour of the TAIC and a tour of some district trial sites which they very much valued.

We anticipate starting harvesting canola around November 8, as we have had some canola windrowed for a couple of days now and warmer and windy conditions are bringing all crops in quickly. Lupins and barley will quickly follow and then into the wheat. It would be nice to see some of the grain prices lift a little in the next few weeks and if we achieve some benchmarked average yields then we will be grateful.

Best Regards

Tony Pratt



Above: Tony Pratt, TAIC Manager and Research Officer, FarmLink Research

## TAIC Rainfall

Rainfall for 2014, so far

Jan 20.6 mm

Feb 29.6 mm

Mar 83.9 mm

Apr 56.4 mm

May 71.3 mm

June 64.8mm

July 44.5mm

Aug 26.2mm

Sept 35mm

Oct 17.6mm

Nov to date 0mm

**TOTAL = 449.9mm**



## Hire Facilities

FarmLink Research offers seminar venues and meeting rooms ideal for your corporate requirements at TAIC.

To find out more contact FarmLink's Office Manager, Debbie Clarke on 02 69801333.

# Temora Agricultural Innovation Centre Update

## Trial in Focus

### Dual Purpose Canola

At FarmLink's recent Open Day Dr Susie Sprague from CSIRO presented along side the grazing canola demonstration site opposite the shearing shed where there was a great deal of interest and discussion taking place.

The trial site at TAIC is part of a wider research program where this site is assessing the suitability of long season winter type dual purpose canola's in the medium rainfall zones.

Key points made by Susie throughout her presentation are below;



Above: CSIRO's Dr Susie Sprague says the key to successful canola grazing is timing of stock removal which, to avoid yield penalties, should occur before buds have elongated more than 10cm above ground level.

#### Best-Bet Management

- Paddocks should be well prepared to capitalise on early sowing opportunities and ideally have adequate stored water to ensure good even establishment and early biomass. Press wheels can improve establishment in dry conditions. Crops sown 2-3 weeks earlier than normal (early-mid April) can produce significant biomass (1.5-4 t/ha) in the mid-winter feed gap and allow the resting of pastures.
- Current spring varieties can be managed for dual-purpose use from early April sowings. Use the most vigorous varieties (e.g. hybrids) with good blackleg resistance (>R-MR) and the correct phenology for the site and season. Grazing reduces biomass and slows the development of these early-sown crops back into the normal window. Weed management is an important consideration in varietal choice given early sowing and the withholding periods for some chemicals.
- Strategies to increase early biomass for grazing include earlier sowing (not too early); varietal choice (hybrid>conventional>triazine tolerant); increased sowing density; adequate nitrogen.
- Grazing can commence as soon as plants are well anchored, although generally biomass levels or chemical withholding periods would preclude grazing until the 6-8 leaf stage which coincides with mid-June for early April sowings (>1.5 t/ha biomass).
- Canola is palatable to livestock, has high feed value, and has produced good liveweight gains (210-300 g/day). We have had no animal health issues, however, guidelines for grazing brassicas should be followed. Most growers have achieved 600-800 dse.grazing days/ha in the period mid-June – mid-August with various animal classes.
- Growers should ensure they have adequate livestock on hand to capitalise on this high value feed. The choice of enterprise and class of animal will determine the profitability of dual-purpose use (e.g. cross-bred prime lambs vs breeding merinos).
- Top-dressing with N after grazing should be considered to ensure the crop has adequate nutrition to maximise regrowth and yield.
- Grazing from 6-8 leaf stage and before buds start to elongate has little impact on flowering time (2-3 days delay), yield or oil. Grazing more advanced plants heavily or late delays flowering and can reduce grain and oil yield. Crops with good grazing management have little yield penalties depending on seasonal conditions for re-growth. In general, grazing into August has resulted in some yield penalties although the grazing value can offset moderate yield penalties.
- Growers should evaluate the direct economic benefits from grazing in relation to potential yield loss (which can be minimised with good management), and indirect benefits such as a reduction in crop height/bulk to facilitate harvesting, grass weed control, pasture spelling, disease break and management flexibility.

## Trial in Focus

### Dual Purpose Canola

#### Experimental Results

#### Greenethorpe – CSIRO

Cultivar Hyola971CL (winter) sown 25 March and cultivar Hyola575CL (spring) sown 16 April were defoliated at various growth stages and severity leaving different amounts of residual biomass. Both undefoliated cultivars had the same grain yield (2.8 t/ha) in a dry finish but the winter provided 3.7 t DM/ha forage compared to 0.7 t DM/ha by the spring (Table 1). Yield was reduced by grazing after the start of stem elongation and also by grazing hard even in the safe window (prior to stem elongation) as crops flowered too late and did not recover sufficient biomass to maintain grain yield. In some situations, the yield penalty from late/hard grazing was offset by the value of forage but the spring cultivar was much more sensitive to late or hard grazing than the winter cultivar. Yield loss was generally avoided if >1.5 t DM/ha and >3.0 t DM/ha remained at the end of July for spring and winter cultivars, respectively, see Figure 1.

**Table 1.** Effect of defoliation treatments on removed dry matter (DM), residual DM and grain yield recovery in Hyola971 winter canola and Hyola575 spring canola at landra, Greenethorpe, 2013. Optimal economic outcomes are highlighted in grey. GSR (A-O): 270mm; 359mm LTM.

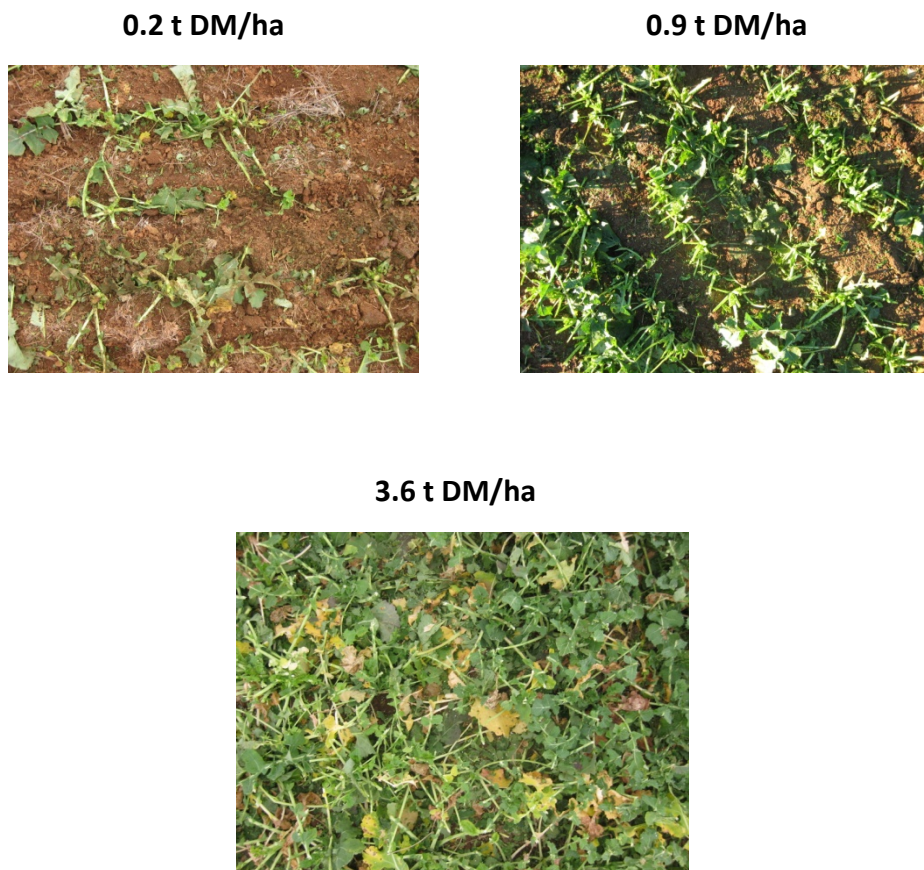
Var.	Lock-up time	Cutting intensity treatment	Removed DM (t/ha)	Residual DM (t/ha)	Grain yield (t/ha)	Relative Yield (% of uncut)	Relative economics (\$/ha)
UNCUT					2.79		
Hyola 971CL sown 25 March	6-8 leaf (7 May)	Hard	0.9	0.4	2.90	1.04	+280
	BV (19 June)	Double (+6-8lf)	3.6	0.9	2.16	0.77	+585
	BV10 (24 Jul)	Double (+6-8lf)	2.4	2.6	2.59	0.93	+500
	BV20 (6 Aug)	Double (+6-8 leaf)	3.8	3.6	2.77	0.99	+940
		Triple (+6-8lf+Bv)	4.4	1.6	2.37	0.85	+890
		Moderate	1.9	5.3	2.88	1.03	+520
6 July	Grazed	5.6	0.4	2.04	0.73	+1025	
UNCUT					2.82		
Hyola 575CL sown 16 April	6-8 leaf (17 Jul)	Hard	0.7	0.2	2.55	0.91	+40
	BV (24 Jul)	Moderate	0.2	1.2	3.01	1.07	+145
		Hard	0.8	0.6	2.29	0.81	-65
	BV10 (30 Jul)	Moderate	1.1	1.0	2.78	0.99	+255
		Hard	1.4	0.7	1.99	0.71	-65
	BV20 (6 Aug)	Light	0.4	3.1	2.58	0.91	-20
30 Jul	Grazed	0.9	0.2	2.13	0.76	-120	

Economics calculated at \$450/t grain and biomass removed at \$0.25/kg (i.e. \$1.7/kg LW for a sheep growing at 225g/day and eating 1.5kg biomass/d)

## Trial in Focus

### Dual Purpose Canola

Figure 1. Residual biomass t DM/ha.



#### Temora – FarmLink and CSIRO

Spring canola grown at Temora provided 500-800 DSE grazing days/ha at Temora with little or no yield penalty.

**Table 2:** Grazing and grain yield achieved at FarmLink site at Coleman's, Temora in 2010 and 2011.

Year	Sown	GSR (mm)	Grazing			Variety	Yield (t/ha)	
			Time	SR	DSE.d/ha		UG	Graze
2010	15 April	460	30/6-1/7	Crash	517	Tawriffic	4.1	4.0
2011	14 April	200	24-25/6	Crash	~800	45Y82	3.4	3.1

## Are winter cultivars a suitable fit for Temora? Results from APSIM simulations

APSIM has been used to predict the grazing and grain potential of different canola maturity types at Temora using 50 years of weather data (Table 3). Sowing opportunities for winter canola are limited and crops are at greater risk of failure due to subsequent dry autumn conditions. Although grazing and grain yield of winter canola is high in some seasons, the variability in predicted grain yield is also high. The winter x spring canola has a similar predicted yield than spring types (but greater yield variability), however as they can be sown earlier they have much greater forage production. Sowing opportunities are more consistent for spring canola (with minimal chance of crop failure due to a false break) but the amount of grazing is lower. At present, no winter x spring cultivars are commercially available but they are in development.

**Table 3:** Summary of predicted (by APSIM) sowing opportunity, grazing and grain potential for winter, winter x spring and spring canola maturity types at Temora over 50 years. Results are based on 60 plants/m<sup>2</sup> with 250kg N/ha at sowing and 100 kg N/ha applied post-grazing.

Variety	Sowing	Sowing opportunity	Start graze	Start flower	Grazing (range) DSE.d/ha	Yield (range) t/ha
Winter	8 Mar	34%	28 Apr	4 Sept	2700 (2400-3200)	3.1 (1.0-4.8)
	22 Mar		15 May	11 Sept	2400 (2200-2800)	3.3 (1.0-5.2)
Wint x Spr	22 Mar	55%	8 May	27 Aug	2200 (2100-2500)	2.8 (0.8-4.8)
	26 Apr		24 Jun	11 Sept	1700 (2000-2500)	3.2 (1.0-4.8)
Spring	26 Apr	70%	18 Jul	30 Aug	800 (800-1100)	2.8 (1.2-4.1)
	17 May		7 Aug	10 Sept	600 (500-700)	3.0 (1.2-4.0)



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# Debbie Clarke

Office Manager, FarmLink Research

Debbie was born in Temora and grew up and attended school in Aria Park, Debbie has returned to the area after many years living and working in both the ACT and Queanbeyan. Debbie has more than twenty five years of experience in the areas of business administration and financial management most recently as the Administrative Officer covering the operational requirements of five locations across the Southern Highlands, Queanbeyan, South Coast and Alpine areas of NSW with the Department of Attorney Generals and Justice, Juvenile Justice.

Debbie is excited about returning home and to the challenges her new role as Office Manager with FarmLink will bring.



Above: Debbie Clarke, Office Manager, FarmLink Research.

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