The Link

FarmLink Newsletter — Vol 33. - Summer 2012

FarmLink Supporters

GRDC Grains Research & Development Corporation

Australian Government
Department of Agriculture, Fisheries and Forestry

Murrumbidgee Catchment Management Authority
Landcare Australia
Lachlan Catchment Management Authority
Woolworths
Lockhart & District Bureau
Temora Agricultural Bureau Inc.

Principal Sponsor

CommonwealthBank Agribusiness

Gold Sponsors

AWB
Pacific Seeds — Modern science – traditional values

Bronze Sponsors

CBH Grain
Pioneer Brand Seeds
OAMPS Insurance Brokers
Dow AgroSciences
Boyce
Canola Breeders
RMS Agricultural Consultants
Rabobank
nab agribusiness
Suncorp Bank Agribusiness
Nuseed
Viterra
AACL
AG n VET Services

In-kind Contributors

Charles Sturt University
CSIRO
NSW Department of Primary Industries

- AgriTech
- Biddulph Rural Consulting
- Delta Agribusiness
- Grassroots Agronomy
- Lachlan Fertilizers
- 3D Ag

Dear Members and Sponsors,

Best wishes to all for a very merry Christmas and a safe, happy and prosperous New Year. I know I say this every year - but where, oh where did 2012 disappear to?!

We hope you enjoy this issue of The Link, FarmLink endeavours to constantly improve communication, and we certainly appreciate your feedback. Keep an eye on our website – it's about to undergo a facelift, all with the express aim of making it a more valuable and usable resource for each of you and your businesses.

Harvest is wrapping up nicely around us with a fair bit less pain than the last couple of years. Yield results seem to be quite varied across the region with a general trend of higher yields east of the Olympic Highway / Goldenfields Way reflecting additional in-season rainfall (and I guess land values!!). Incidence of frost damage appears somewhat higher than expected in some areas.

It is interesting to note the variation in management effects on crop results this year. We are seeing definite trends with well-managed grazing and summer weed control practices having positive impacts on crop yields right across the region. This is somewhat surprising given the abundance of summer / autumn rainfall experienced earlier this year, but it goes to show the longer term effects of effective management.

Our Water Use Efficiency and Moisture Network projects have worked to raise farmer awareness about this ability to positively impact water use efficiency in cropping and pasture systems, rather than have yields (and therefore profits) dictated strictly by weather patterns. Obviously, a lack of rainfall will severely curtail a season's potential, but we do see significant differences in results from varying management techniques across a range of seasons.

It is now our aim to capitalise on this knowledge; trial it in different localities, soil types, topographies and farming systems and ensure that these more moisture-efficient practices are proven across the region.

Harvest is almost complete at the Temora Agricultural Innovation Centre as I write this, with only a few trial plots remaining. Results from the commercial crop are yet to be finalised, but it appears to be slightly better than I had suspected, given the particularly tough year of rainfall we have experienced since sowing. Sheep running at the Centre have been de-stocked to ensure grazing pressure is manageable over summer and into the new year. 2012 has been a year of settling and consolidation - setting up systems and procedures, and learning more about the farm and its issues. We are implementing a more strategic management plan than we have had to date and starting to deal with a number of weed resistance and soil structure issues that have become evident.

Phillip Moroney, our Farm Coordinator continues to pick up more responsibility and it is very pleasing to see him grow further into his role. Well done Phil, and thank you for easing the pressure!

Support from the commercial research industry has continued to be strong, with 14,801 individual plots on-farm during 2012. Grower numbers at FarmLink events throughout the year is increasing and we appreciate your encouragement and attendance as we establish this exciting new model of agricultural research and extension for the entire region. The valued support of the Temora Shire Council and staff has been significant and should be recognised; what we are endeavouring to achieve would simply not be possible without them.

I wanted to take this opportunity to let you know how much I have appreciated your support over the last few years as I have dealt with my health issues. It has taken me some time to come to terms with the good news of my remission since October, but the number of phone calls and messages of encouragement have been treasured. Thank you so very much.

More importantly though, I truly hope that you get the time to put your feet up over the Christmas period and enjoy some well-earned celebrations and rest time with your family and friends. Just remember, there are only 376 days until next Christmas!!!

Jon Cobden, CEO

FarmLink Project Updates

'Catch More, Store More, Grow More'
Regional Water Use Efficiency Awards

In conjunction with the local Agricultural Show Societies' annual wheat crop competitions, FarmLink Research has initiated an annual award for the most water efficient crops in seven locations; Canowindra, Wallendbeen, Cootamundra, Temora, Junee, Ganmain and Lockhart.

The Regional Water Use Efficiency Awards recognise crop management practices that catch more water, store more water and grow more grain. Each local winner receives a complimentary membership to FarmLink Research and a certificate recognising their achievement. Each local winner is then eligible for the regional Water Use Efficiency Award. The regional winner receives a perpetual shield and a prize to the value of $500.

To determine the Regional Water Use Efficiency Award winners, the percentage of potential yield that the crops have attained is calculated using the crop judges estimate of yield. Potential yield is calculated using 30% of rainfall from November, December (previous year), January, February and March. This is then added to the rainfall received in the growing season and 60mm is subtracted to account for evaporation in the crop. The total rainfall figure is then multiplied by 22kg of grain. 22kg of grain per mm of plant available water has been determined by research undertaken by John Angus and Victor Sadras as the maximum wheat yield achievable in a water unlimited situation. This figure does not account for impacts of frost, heat stress, disease, sub soil constraints or pests. An example calculation is below;

Table 1: An example of how to calculate Water Use Efficiency (WUE), as used for the determination of the Regional Water Use Efficiency Awards.

Out of season rainfall (Nov, Dec, Jan, Feb, Mar) (OSR) x 0.3	**147mm**
Growing season rainfall (GSR)	**198mm**
Total plant available water (PAW) – 60mm	**285mm**
Potential yield (PAW-60 x 22)	**6 270kg/ha**
Crop yield percentage of potential yield (Judged Yield/Potential Yield x 100)	**5,800 / 6,270 x 100 = 92.5%**

To date, not all area winners or the regional winner have been announced. However, variations in the judged yields (3t - 6.3t) show a range of 47% to 120% of deemed potential yield.

There are a number of potential reasons why crops vary for WUE and a low WUE should be a trigger to investigate the causes and potential management changes required. Some of the practices that appear to have impacted yield, include summer weed control, grazing management, prior year cropping/fallow history and nutrition.

Final results will be presented in the 2012 FarmLink Research Report.

Right: Paul Breust (right), FarmLink's Research Coordinator congratulates Andrew Wiencke on winning the Temora Wheat Crop Competition 2012 'Catch more, store more, grow more' Water Use Efficiency Award.

Managing Longer Season Wheat Varieties to Increase Yield

Optimising flowering time, phase duration, harvest index (HI) and yield of milling wheat in different rainfall zones of southern Australia.

This is a collaborative project between CSIRO and FarmLink Research funded by GRDC. This work is in its second year and some very significant results have been collected during this time. James Hunt from CSIRO leads this work and he has implemented three trial sites in southern Australia; Temora/Junee, Lake Bolac and Condobolin.

In 2011, at Temora there was a very large yield advantage from sowing a very slow variety early (EGA Eaglehawk, 15 April) and adjusting seeding rate to improve HI (6.3t/ha) compared to sowing mid and mid-fast varieties in their optimal window (EGA Gregory, 9 May 5.4t/ha, Lincoln, 19 May 5.5 t/ha) see Table 1.

Table 1: Grain yield and harvest index of four wheat varieties of different maturity sown at Temora in 2011 to flower on the same date.

	Grain yield (t/ha)		Harvest index (%)	
Variety and sowing date	**40 plants/m²**	**100 plants/m²**	**40 plants/m²**	**100 plants/m²**
EGA Eaglehawk (15 April)	**6.3**	**6.0**	**0.41**	**0.39**
Bolac (27 April)	**5.9**	**5.7**	**0.42**	**0.39**
EGA Gregory (9 May)	**5.0**	**5.4**	**0.44**	**0.43**
Lincoln (19 May)	**4.8**	**5.5**	**0.44**	**0.44**
P-value	**0.009**		**0.018**	
LSD (p=0.05)	**0.5**		**0.01**	

The 2012 trials are investigating the impacts of time of sowing, seeding density and defoliation (simulated grazing). In the Junee trial Eaglehawk 17th April, Bolac 27th April, Gregory 7th May and Lincoln 17th May were sown. Each variety was sown at every time of sowing as a control. When varieties were sown in their target window they were also sown at 2 densities, 50 and 100 plants/m², and treated with a simulated grazing by whipper snipping at Zadoc 30.

	17 April, 2012		27 April, 2012		7 May, 2012		17 May, 2012	
Eaglehawk	50 50 100 100	Defoliate Control Defoliate Control	100	Control	100	Control	100	Control
Bolac	100	Control	50 50 100 100	Defoliate Control Defoliate Control	100	Control	100	Control
Gregory	100	Control	100	Control	50 50 100 100	Defoliate Control Defoliate Control	100	Control
Lincoln	100	Control	100	Control	100	Control	50 50 100 100	Defoliate Control Defoliate Control

Table 2: Treatment plan for Junee trial 2012.

Preliminary data has shown similar results to 2011 in 2012 for time of sowing. There has been reduced effect of density and defoliation. A full report will be published in the 2012 FarmLink Research Report.

Whilst these early results look promising, growers should be aware of potential problems when sowing early. Weed control, seasonal conditions and disease all have the potential to impact on the success of an early sowing system. We would prefer to see how this system performs over a range of seasonal conditions and scenarios before adoption is recommended. The three 2012 trials will provide additional data to assess this system further.

Brown Manure (BM) Pulses

As part of a large GRDC funded crop sequencing project, FarmLink have implemented a series of trials across the region investigating the impacts of a range of break crop options. A high priority was the use of brown manure pulses to control herbicide resistant weeds and supply an inexpensive source of nitrogen for subsequent crops. Brown manuring of early sown field peas has been widely adopted across the FarmLink region in recent years and we are aiming to provide scientific data on the agronomic and economic impacts of this system.

Lockhart

A grower scale demonstration at Lockhart is researching the agronomic and economic differences in brown manure peas and long fallow on soil moisture, nitrogen and weeds. Three individual strips of fallow and brown manure peas were sown side by side in early April. As an add-on we are also comparing incorporated brown manured peas to unincorporated using a two way disc and a speed tiller. There is some research that incorporation will increase nitrogen mineralisation. The speed tiller handled the brown manure peas easily with 2.6t/ha of dry matter and left the area ready to sow after one pass.

Another farmer scale demonstration at Lockhart is comparing the effects on canola and wheat following brown manure peas. The wheat has yielded up to 4t/ha and canola up to 1.8t/ha at this site.

Final results will be presented in the 2012 FarmLink Research Report.

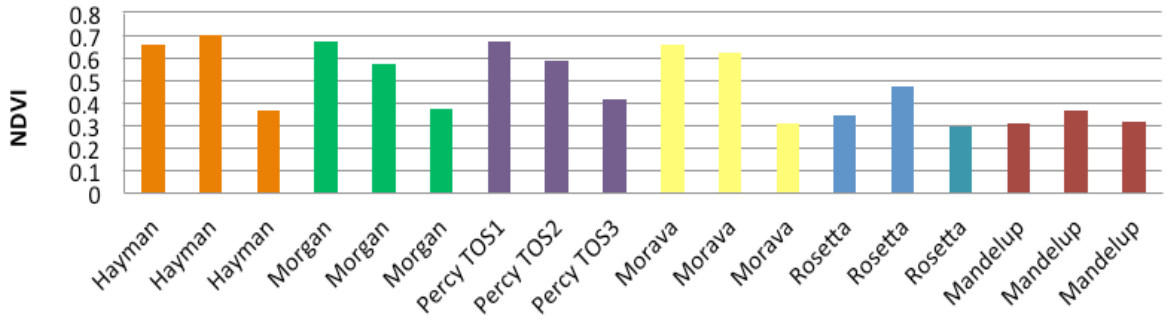
Brown Manure (BM) Pulses *cont.*

Left: Brown Manure Peas incorporated. Middle: Brown Manure Peas, no incorporation. Right: Fallow incorporation.

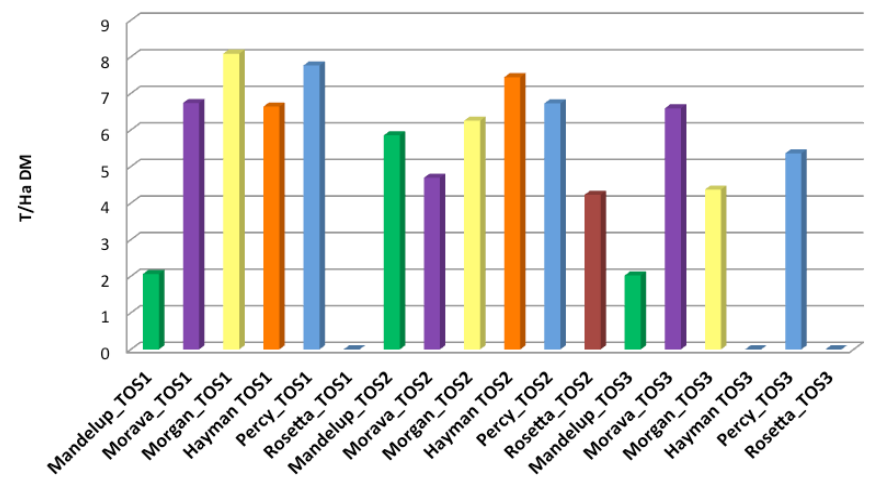
In response to the questions raised by the project steering committee, FarmLink and NSW DPI implemented a time of sowing by brown manure pulse trial at Wagga. The aim of the trial was to determine the impacts on dry matter production of a range of sowing times for three varieties of field peas, narrow and broadleaf Lupins and a vetch.

There is a strong relationship between biomass and Nitrogen mineralisation and we wanted to see if an early sowing would produce higher biomass. Herbicide resistant weed control is the main trigger for implementing BM crops so the maturity of the weed species plays a critical role in timing of the brown manuring. Competiveness with weeds of the BM crop is also a critical consideration. Unfortunately the Lupins were grazed by hares and rabbits and this had a detrimental effect on their dry matter production and competitiveness. At this stage there is only preliminary data available but at this site the earlier time of sowing increased biomass. Final results on Nitrogen mineralisation, moisture and weed control will be presented in the 2012 FarmLink Research Report.

Graph 1: Normalised differential vegetative index (NDVI) results 25th July 2012 for the three different sowing times. NDVI measures infra red reflectance from green biomass an early indicator of biomass.



Graph 2: Peak biomass cut results Wagga crop sequencing BM trial, 31 Oct 2012.
Note: Lupin varieties were detrimentally grazed by rabbits and hares.



FarmLink Events

FarmLink Research hosts Birchip Cropping Group on Regional Tour, 26 Sept 2012

Temora Agricultural Innovation Centre

FarmLink Principal Sponsor

CommonwealthBank Agribusiness

2013 Calendar Dates

JANUARY

30 FarmLink Executive Meeting

FEBRUARY

21 Conservation Farming Field Day - Temora

25 Crop Sequencing Field Day

26-27 GRDC Advisor Update - Temora

MARCH

4 FarmLink Research and Development Committee Meeting

13 GRDC/FarmLink Grower Update, Ganmain

26 FarmLink AGM - TBC

21 GRDC Business Update, Lockhart

Executive in Profile

Robert Hart, Junee Reefs

Robert Hart, Junee Reefs

Robert grew up on the family farm "Breffni", Junee Reefs with his three siblings. He attended Junee High School until year 10 and two years at St Patricks Goulburn. Robert completed two years of a Bachelor of Agriculture degree at the University of New England then worked for a year in the Cotton industry around Moree before finishing his studies at CSU Wagga.

Following Robert's overseas travel in 1996, he then committed to the farming operation, which he ran with the help of his mother Anne until 2009, before moving across to learn the ropes in the family seed business Hart Bros Seeds (HBS).

In 2010 Bernard and Robert exchanged roles, with Bernard moving from HBS to the farm and vice versa. This was a decision based on succession planning.

Robert is now in a role that overseas both businesses. He is doing this under Bernard's guidance which he thoroughly appreciates.

Robert is married to Alison and they have three children Ineka 9, Juliette 7 and Henry 5, who has already stated he is either going to be a farmer or 'just stay at home with mum'.

FarmLink Staff

Jon Cobden, CEO
Paul Breust, Research Coordinator
Karen Giddings, Communications Coordinator
Judith Neill, Administration
Phil Moroney, Farm Hand

FarmLink Executive

Charles Kingston, The Rock (Chair/ Director)
Matt Dart, Ariah Park (Director)
Steven Day, Lockhart (Director)
Darryl Harper, Barmedman
Robert Hart, Junee
Jeff Hoffmann, Lockhart
Bruce Holden, Rannock
Ernie Idiens, Canowindra
Derek Ingold, Dirnaseer
Ian Jennings, Coolamon
Rob McColl, Binalong
Lyndon McNabb, Quandialla
Mike O'Hare, Beckom

FarmLink Research
Address: 17 Denison Street, PO Box 240, Junee, 2663
(02) 6924 4633
(02) 6924 4677
farmlink@farmlink.com.au
www.farmlink.com.au