



# UNFS UPDATE

Upper North Farming Systems Newsletter

September 2021

## Plan A didn't work...so lets go with Plan B and hope for the best!

Ruth Sommerville, Executive Officer

The first plan for the Members Expo, like so many things over the past 18 months, was de-railed by a COVID shutdown so we came up with a Plan B and it is a great one...fingers crossed it happens! September is jam packed with opportunities to listen, learn, network and of course sticky beak at what the neighbours are doing.

The Expo on September 9 has a whole of enterprise focus. The theme Productive and Profitable Soils and Systems reflects our mixed farming focus at UNFS and the desire to see our members slowly and surely improve all aspects of their farm enterprise from in-crop and sheep management, to landscape decisions, to the business and people within the enterprise...every component needs to be functioning well to create a profitable and sustainable farm. Working from the ground up, we have both the science and the "how to" of improving the bucket capacity and resilience of the resource from which all farm outputs are grown, the soil. Mark Farrell from CSIRO will bring knowledge on better managing soil carbon, nutrition and overall health to improve plant resilience and productivity, presenting both in the hall in the morning and at a practical session in the soil pit in the afternoon. The Building Better Soil Knowledge project team, including Jade Rose and Beth Sleep, will join Mark in the soil pit. We have 2 farmer presentations on the day; David Cooper, of CC Cooper and Co, will discuss their decision making around diversification and building a more resilient business model whilst the farmer panel to wrap up the in-hall sessions will talk through the outcomes to date from the Sheep Tech Group.

We will be looking at novel cropping systems in the field in the afternoon with Sarah Day and Penny Roberts from SARDI Clare and have a session from Marg Evans on managing Crown Rot with results from trials done at Booleroo and Baroota over the past few years. Michael Nash will present on building a Pest Resilient Landscape and Jess Koch will talk through some early insights from our Frost Extension project site at Murray Town.

Decision making and the process of managing the farming business has been shown to be the greatest contributor to the success of the farm, but it is often the skill that we leave to develop on its own, or consider something we are born with or not. The second key note speaker of the day is here to debunk that theory and provide you with tools and skills to better make decisions, handle tricky situations and build your farm enterprise resilience to the inevitable variability that is farming. Steph Schmidt is the 2020 Agrifutures Rural Womens Award winner for SA with her ACT for Ag program. An intro session will be held at the expo and those that are wishing to develop these skill sets further are encouraged to register for the 4 free online workshops being held over the next 2 months. There are limited places so register now! Full details on our website. ACT for AG in the Upper North is made possible through support from the Northern and Yorke Landscape Board, through funding from the Australian Government's Future Drought Fund. The expo will be run under covid management restrictions and masks are to be worn inside at all times.

The expo is just one of a massive line up of events this month...read on to find out more!

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# 2021 Members Expo

## Come along and hear our great line up of presenters

- ✓ Mark Farrell, CSIRO: Managing Soils Better
- ✓ David Cooper, CC Cooper and Co: Building Resilience
- ✓ Stephanie Schmidt: ACT for Ag
- ✓ Michael Nash: Reducing Pest Resilient Landscapes
- ✓ Marg Evans: Crown Rot Management / Systems Approach
- ✓ Sheep Technology Farmer Panel
- ✓ Sarah Day & Penny Roberts, SARDI: Novel Cropping Systems
- ✓ Jade Rose, UNFS & Beth Sleep, Elders: Building Soil Knowledge Project
- ✓ Jessica Koch, Breezy Hill Ag : Frost in the Upper North

**THURSDAY SEPTEMBER 9TH 2021**  
**BOOLEROO CENTRE INSTITUTE**  
**9AM-5PM**

Register here: <https://www.eventbrite.com.au/e/upper-north-farming-systems-expo-2021-and-agm-tickets-167011649339>  
[www.unfs.com.au](http://www.unfs.com.au)  
[www.facebook.com/UpperNorthFarmingSystems](https://www.facebook.com/UpperNorthFarmingSystems)



Gladstone SA  
September 8, 2021

# Growing Profit from Precision Ag



## Training Workshop

# Growing Profit from Precision Ag

**Location:** Southern Flinders Sports Complex, Gladstone

**Date:** Wednesday, September 8, 2021

**Time:** 8:45am to 3:30pm

**Facilitated by:** Colin Hinze from Pinion Advisory

This workshop will cover:

- Overcoming obstacles when creating yield maps
- Multi-layer analysis to understand trends
- Driving profit from variable data

This will be a hands-on workshop which is limited to 15 participants


Registration is essential via [Eventbrite](#) or by contacting:

Morgan McCallum E: [morgan@unfs.com.au](mailto:morgan@unfs.com.au) M: 0459718181

*This GRDC funded workshop is supported by:*



[grdc.com.au](http://grdc.com.au)



**UPPER NORTH FARMING  
SYSTEMS INC.**

**Rescheduled**

**ANNUAL GENERAL MEETING**

**Thursday September 9, 2021**  
 9.15am at the Booleroo Centre Civic Centre,  
 Stephens St, Booleroo Centre.

Annual Expo to follow:  
 "Productive and Profitable Soils and Systems"  
 Registration required: <https://unfs.com.au/calendar/>

**For further information, please contact  
 Kristina Mudge M: 0438 840 369**

## Sheep Tech Group Update

### Merino Flock Profiling in the Upper North

A group of enthusiastic local Merino producers from the UNFS Sheep Technology Group have come together to better understand the genetic potential of their flocks.

Ten businesses conducted Merino Flock Profile (MFP) testing. This involves taking DNA samples from a random selection of 20 young ewes. These are analysed and the results returned as average flock Australian Sheep Breeding Values (ASBVs), which allows breeders to compare their flock with the MERINOSELECT database. The group came together for a workshop with Andrew Michael of Leahcim Poll Merino stud and Anne Collins of AC Ag Consulting. We were able to share everyone's results and this generated some great discussion. Each individual flock result was discussed and all businesses were able to go away with the genesis of a plan for making better ram buying decisions having identified the traits they want to improve in their flock.

Refining your ram buying decisions is not necessarily about changing your existing ram source, it can just be about which rams you look to buy from your existing supplier. Some will only make minor changes whereas others will plan to place much greater emphasis on specific traits.

Paul Rodgers from Quorn said that he got a lot more value than he expected from the process. He learned that his flock was in the top 5% of MERINOSELECT flocks in Australia for fleece weight and growth traits, while being in the lower percentiles for carcase traits such as eye muscle and fat depth. He said that tied in with what they were seeing in their flock, where they have been struggling to get decent reproduction rates. As a result of doing the MFP test, Paul has changed his ram buying strategy this year, to place more emphasis on carcase traits. This should ultimately breed more resilient and fertile mothers.



*Photo: Lachie Smart & Andrew Michealart & Andrew Micheal*

For Lachie Smart of Wirrabara, the process confirmed for him that his present genetics were about where he wanted to be, but learning that his flock's early breech wrinkle score was well below the industry average has given him the confidence to trial not mulesing a portion of his lambs this year. He says doing the MFP test has made him much more aware of what he possibly could do and has prompted him to have a conversation with his regular stud about why they don't provide ASBVs on their rams.

Most of these producers will plan to redo their MFP in maybe three years' time and this will enable them to track any genetic progress or changes in breeding direction.

If anyone would like to be involved in a similar group next year, register your interest with Rachel and we will try and organise something.

For more info on Merino Flock Profiling contact Anne Collins 0427 486 115 or Sheep Tech Group contact Rachel Trengove 0438 452 003.



*Photo: Lachie Smart & Andrew Micheal*



# Producer Technology Uptake Program Update

Jessica Koch

## 20<sup>th</sup> July, Napperby Tennis Club

On the 20<sup>th</sup> July, the first Producer Tech Uptake workshop was held for Upper North Farming Systems at the Napperby Tennis Club. Strict Covid 19 restrictions took effect the evening prior, so we were very fortunate to be able to hold the workshop person under strict social distancing and management.

There were 12 in attendance at the event, including myself Jessica Koch as project facilitator and UNFS staff member Morgan McCallum. Also in attendance was Beth Sleep, Agronomist from Elders in Jamestown, Ross Freeman, Precision Ag solutions specialist from Pringles Crouch and 8 farmers from the Napperby/Baroota/Warnertown and Wandearah districts. The Nelshaby Ag Bureau did a wonderful job distributing the information for this event to its member base. The content for the workshops was split in to four sessions with an aim of starting at the very basics for understanding ag data and how to save and interpret it for practical applications on farm. The content was well received and sparked a lot of discussion, particularly around the issue of machinery hardware support and the cost of upgrading equipment. There were quite a lot of discussion around foundation information, recording boundaries and structuring setup master files correctly to use them across several platforms. There was interest in the 'one hour follow up sessions' from some growers whom I will follow up.

## 23rd July - Conducted Via Zoom

At 6pm on Tuesday 20<sup>th</sup> July South Australia went into a Statewide Lockdown. This unfortunately made it impossible to hold our planned face to face workshop in Jamestown on the 22<sup>nd</sup> July as planned. After some consideration particularly around seasonal timing (around the content in the workshops) and the rainy weather forecast (which is favourable for solid attendance by farmers), it was decided to replace the Jamestown workshop a Zoom version to be held online. The link was sent to all UNFS members and interested members of the public were invited to register for the link. It was very exciting to have 24 tune in for the workshop. I logged into PCT AgCloud and we went through some examples on how to create prescriptions and strip trials, and how to compare data layers.

## 10<sup>th</sup> August – Melrose

On the 10<sup>th</sup> of August, the last of the first round of Producer Tech Uptake workshop was held for Upper North Farming Systems at the North Star Hotel in Melrose where there were 10 attendees including staff and myself. This workshop ran very similar to the Napperby one in which the workshop was split into four sessions. There was a lot of positive discussions around the application of the tech on existing machinery and how they can be best utilised.

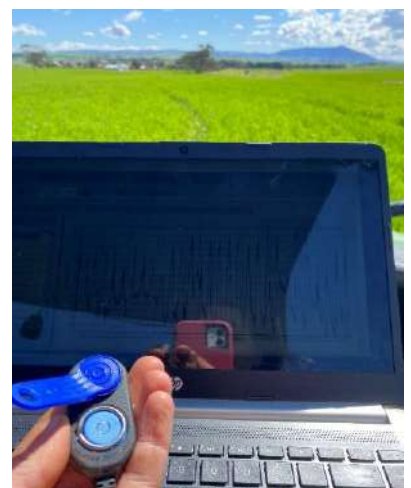
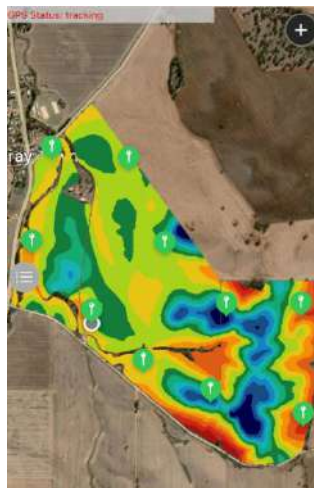
As part of the Agrifutures 'Producer Uptake Program', two fact sheets will be created as a UNFS resource. The fact sheets have two topics:

### 'Using simple map layers to practically manage frost'

This site is set up on Todd Orrocks 'Woolfords' paddock. The field has a significant paddock history of frost, confirmed by yield maps and crop scouting for inspection. The purpose of the project is to show how easily accessible elevation data, and the sub layers that are available with elevation data (such as landscape change maps) can be utilised for managing frost events at hay cutting and harvest time. iButton frost sensors have been placed in different elevation and depressions throughout the paddock and are logging at 20 minute intervals. Jess has recently downloaded the first batch of data for August and the contrast in temperature from the bottom of the paddock to the top is stark. More to come!

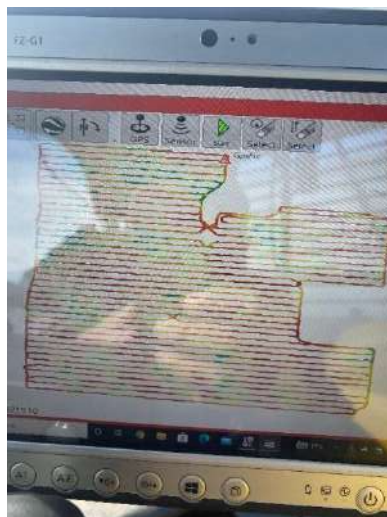
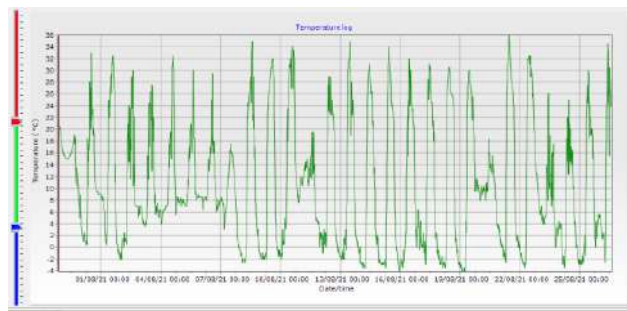


Photo: Melrose Producer Tech Update held at the North Star Hotel.



## 'A soil testing recipe, how do I use spatial map layers to get the most out of my soil testing'

The second fact sheet will demonstrate how to use common map layers to take strategic soil cores, with the aim of determining major soil types. This is a collaborative task with Beth Sleep providing soils advice, and Michael Zwar from AgTech services collecting EM38 soil survey data, and strategically placed soil cores. The locations for the cores were derived from several years yield data, EM38 data and satellite imagery – more to come!



*Proudly funded by:*



## Mixed Cover Cropping for Sustainable Farming Systems in South Eastern Australia Project Update

The new year started with below average rainfall and warmer than average temperatures. This cycle continued throughout this reporting stage with rainfall below average for Australia as a whole with April being recorded as among the driest month on record.

Maintaining delivery of activities throughout this reporting period has been less challenging with changing restrictions. Although some extension events were impacted with collaborators being forced to cancel or postpone Field Days and planned Expo's. Covid significantly reduced some capacity to plan events and secure interstate and international speakers for some events. Proposed Spring Crop Walks could still face restrictions due to some current limitations.

CSIRO in consultation with the Steering Committee devised and executed a communication plan for all collaborators to ensure that the strict sampling and sample storage protocols were understood and could be adhered to. Guidance was provided to them on alternate approaches, confirmation was received from them all that their commitments were understood.

A Field Sampling Day was held prior to sampling commencing to ensure samples were undertaken correctly. This also presented the opportunities to provide immediate remote support to other collaborators who had site-specific issues to be resolved. Sampling was completed throughout March to May by all collaborators with the exception of one based in Tasmania who will complete sampling in August due to their different farming systems.

The project is now at the critical data gathering and generation phase, CSIRO laboratory analysis for over 1000 samples received to date is progressing well. Additional technicians are assisting the project at this time of high sample load. All samples received were processed within 48 hours of receipt, preparing and stabilising them for onward analysis of various soil health metrics.

MFMG - A very dry summer once again affected the vigour of the cover crops sown in summer; late spring sowing has shown best results for that region. Efforts were focused at Western Flat (Termination Trial site) due to other sites' crops failing. Good

progress was made in the reporting period, with both warm season cover crop trials successfully established and monitored and a termination trial successfully implemented. The workshop and field walk was very well attended with all showing great enthusiasm for learning more and trialling new systems on their farms. Activities in the next six months include: preparing articles for the spring MFMG Newsletter that will be distributed to members and updating project information on the new MFMG website, harvesting 2021 cash crops for yield data and completing site Meta Data for CSIRO.

Ag KI - The past spring and summer was a busy time for this project with all activities accomplished although there were a few challenges encountered. The second Species Screening Trial attempt turned into a demonstration due to seeder mechanical issues. Fortunately there were key take away messages for warm season cover crop species that perform well in Kangaroo Island conditions.

SFS – Farm demonstration trials continued through this reporting period with Victorian sites having cover crop rotations established over summer. Both were terminated with the final cash crops sown into wheat at SW Victoria and barley at Gippsland. Soil sampling was completed in both paddocks and samples sent to CSIRO for analysis. These sites are on track with project activities and will have yield collected from the paddocks in January/February 2022. In Tasmania, the farm demonstration trial was sown into its cover crop rotation in March following a spring barley cash crop. This site will remain in cover until August/September when it will be terminated. The biomass and soil sampling will occur prior to the site being planted with a potato crop. A representative yield will be collected from the paddock in early 2022. The Tasmania Species Evaluation trial was sown May 2021. The trial has 18 treatments, including a fallow and single and multi-species treatments. The trial will remain in the ground until September when it will be terminated and then cropped over with a spring barley cash crop. This crop will be taken through to harvest and yield and grain quality data will be collected in February 2022. A crop walk and cover crop field day is planned to be hosted at this prior to September. The crimper roller has been used in a demonstration at the SW Victoria farm demonstration site. Some challenges with establishment of the Gippsland cash crop phase of the cover crop demonstration trial due to flooding of the site soon after sowing in June resulting in crop failure. Current conditions are making it difficult to get back on the paddock to sow again.

AIREP (EAPRF / LEADA) – The project is progressing and delivering on expectations as it moves into the final year. Alternative options to paddock walks are being determined to ensure extension and communication commitments are met. A summary of the project results was published in the 2020 Eyre Peninsula Farming Systems Summary distributed to 1,100 farmers across the region. Sporadic summer rainfall presented establishment issues at the Ungarra farm demonstration site, and whilst disappointing it represents what is highly likely to happen in an average year. Both farm demonstration sites have been soil sampled and samples delivered to the CSIRO. The cover crop plant species screening trial at Wangary was sampled for dry matter production at the end of summer.

SAMDB - Overall the farm demonstration trials are producing the foundations of some good findings, although it may require several seasons with more of monitoring soil and crops to begin to see the flow on effects of differing decisions and approaches on the land systems, crop and biomass productivity.

A summer cropping trial was undertaken at the Waikerie site on ground that was winter fallow in the previous period and this produced good levels of summer forage.

Growth on the Parilla demonstration site was retarded to some degree due to a Redlegged Earth Mite infestation. This may limit the level of benefit from mixed species and this will need to be factored in when considering the final grain and biomass results.

Soil sampling was conducted at the Langhorne Creek demonstration site in pockets of multi species to contrast more effectively with the singles. Although this site received some good summer rainfalls, summer cropping was not attempted.

These factors however have not prevented the project from proceeding. Even though the summer cropping aspect is a disappointment it did not diminish the resolve to push ahead with examining optimal approaches for improving soil condition and overall site productivity from these low rainfall cropping/land systems.

SANTFA - Soil sampling has been undertaken at all SANTFA managed sites as well as delivering a soil testing service for AIR EP and UNFS. All soil samples undertaken have been provided to CSIRO for testing.

The project web site continues to be updated with current information (<https://research.csiro.au/mixedcovercrops/>).





# Frost Variation in the Upper North

## Using past records to better understand frost risk at Booleroo.

**Peter Hayman, Dane Thomas and Bronya Cooper, SARDI Climate Applications**

Some years are frostier than others and there seem to be frostier and less frosty decades. This newsletter article addresses the year to year variability in frost. In the next newsletter, due in September, SARDI climate applications will combine with CSIRO colleagues to discuss how minimum temperature varies across the landscape (spatial variability). The final newsletter we will analyse the weather maps for the frost events in 2021.

### **Why is historical minimum temperature data important?**

In the last decade there has been an explosion of NRM and on-farm weather stations and many of these are now networked. The lower cost and availability of temperature loggers such as Tiny Tags and iButtons provide further local information. This is valuable information, but unfortunately it is all recent. Even 10 years of measurement is a small sample to try and understand year to year variability. In the future there may be clever ways to connect the on-farm weather data with the long term data. At the moment we rely on BoM sites for long term records

These long term records are the only way to 1) rank the frostiness of a season like 2021 to better interpret the demonstration trials 2) make long-term comparisons of the frostiness of regions, 3) check the impact of climate drivers like negative IOD, 4) check on how frost risk is changing over decades and 5) analyse 'optimal' or 'safe' flowering windows.

Measuring and ranking the frostiness of a season or a region is somewhat similar to what we do with deciles for rainfall. Dryland farmers would agree that a statement like *"the growing season was a decile 3 season"* tells us more than *"it was a dry season, not the worst season, but dry"*. Of course, deciles for the growing season don't cover everything. The statement of a decile 3 season might be followed with *"a late break but the rain came just as the crops were flowering"*. Deciles as a way to rank the rainfall of the season are only possible because we have reliable long-term records of rainfall. We have fewer temperature records and even when we do have good records, it is more difficult to provide a frostiness decile. Candidates for ranking years include the number of frosts, date of last frost, coldest night, accumulated nights or 'frost sum' under a threshold of 2 degrees or 0 degrees and simulated damage from frost using a crop model like APSIM (YieldProphet). We will explore different ways to measure and rank frostiness for recent years, including 2021 in the third newsletter. Any suggestions would be gratefully received.

### **What do you mean by Optimal Flowering Windows?**

In addition to ranking a given season, historical information on frost risk is important to identify the optimum flowering window. This is a "window" of days in spring that balances the risks of frost, heat and moisture stress. At recent frost workshops organised by MSF and GRDC we asked farmers and agronomists *"about what date in spring would you drive past a crop in head think it was too early and pushing against frost risk? What date would you think a crop was a bit late to be in head and prone to heat and moisture stress?"* Farmers and agronomists in the room were able to give us a consensus based on their experience, local trials and because they had paid attention to discussion at recent GRDC updates, for example [Stabilising the flowering time of wheat - GRDC](#). Farmers and agronomists at the workshops were quick to point out that hitting the optimum flowering window with different varieties and sowing times isn't always easy, especially if a season is warmer or cooler than usual. Further discussion covered how the targeted flowering window might shift earlier or later depending on the risk appetite of the farmer and the frostiness of the paddock. It is obviously a mistake to determine the Optimal Flowering Window after a single year, or even a three year project; we need to use long term climate records.

### **How can farmers access local information on frost and heat?**

The APSIM model behind [Yield Prophet](#) captures the dynamics of crop development and how critical stages interact with the risks of heat and frost but also rainfall, crop water use, nitrogen supply and the other driver of modelling biomass, radiation.

A great tool for farmers and agronomists to freely access climate data is the CliMate App [CliMate: Home Page \(climateapp.net.au\)](#). A recent GroundCover article gives a good example of using CliMate as one input into managing frost risk [Dodging frost a numbers game | Groundcover \(grdc.com.au\)](#). A user of CliMate app can set the percent chance of reaching a cold or hot threshold. For example the 10% chance of being warmer than zero degrees and the 30% chance of being cooler than 30 degrees. Because this is only based on frost and heat it is better understood as a user defined 'safe flowering window'. Unless farming in a highly frost prone area, the Optimal Flowering Window is usually earlier than the Safe Flowering Window. This is because earlier flowering minimises the risk of moisture stress as well as heat stress. What this means is that an over-



emphasis on flowering after the last frost or a very low chance of the last frost can be costly insurance because yields are reduced by moisture and heat stress.

### What is the risk of frost and heat at Booleroo?

The upper north cropping region has limited temperature recording stations, especially stations that are appropriate for frost. Temperature data is not recorded at Booleroo, but the data is calculated from the nearest recording stations with correction for altitude etc. This is the same data that is used in CliMate and YieldProphet for Booleroo.

Figures 1 and 2 show the risk of being colder than zero degrees and warmer than 30 degrees for Booleroo. The x axis of both graphs is the day of year and the Y axis is frost risk presented as a percentage. The difference is that Figure 1 is the risk for a single day whereas Figure 2 is the risk at least one day in seven. The very sensitive stage of wheat to frost is at least 7 days. The chance of one frosty night over 7 days or one hot day over the week is much higher than the chance of a frost or heat on a single day.

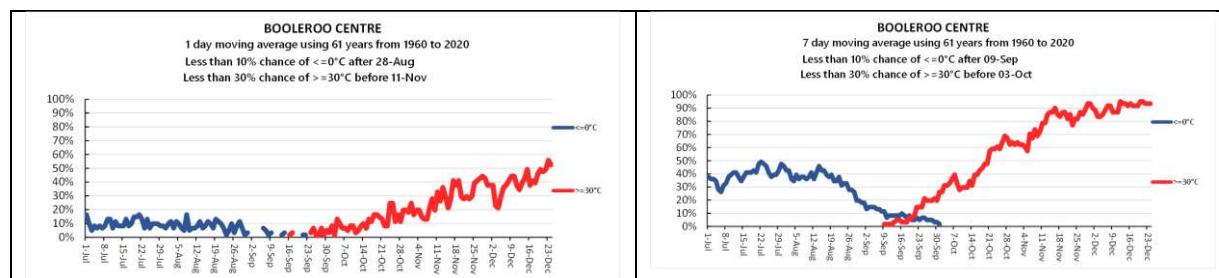


Figure 1 – Left side panel - chance of a single day measured at Booleroo Centre being zero degrees or colder (blue line) and 30 degrees or warmer (red line). Figure 2, (right side panel) the same thresholds as Fig 1 but chance of at least one day in seven meeting the threshold.

One way to think about this is that you are crossing a six lane highway with no safety island in the middle and you want to know the best hour of the day to do this. One analyst tells me the risk of being hit by a vehicle in one lane, another tells me the risk of being hit on at least one lane. They will both tell me how the risk changes by hour over the day, but the risk of being hit in at least one lane is a better measure of the risk for my problem. The chance of one event over the period gives a more realistic measure of risk. This should not be interpreted as a criticism of CliMate, it is a great tool and the how cold/ how hot component was not designed specifically for wheat, it can be applied to many agricultural applications.

The analysis in YieldProphet assumes that frost has impacts depending on the severity of the minimum temperature and the stage of the crop. Taking the analogy of crossing the six lane highway even further, YieldProphet is taking into account how quickly you cross the road. Late in spring in a warm location wheat will move through the sensitive stages much more quickly than earlier in spring.

### Is the risk of frost and heat changing?

Farmers and agronomists with long experience in the Upper North have observed more frost damage and in many cases, earlier heat events. There is a paradox whereby in a warming world, we seem to be getting more frost, or at least noticing more frost damage. Figure 3 presents the heat and frost risk in the same way as Figure 2 (at least one event in seven days). The data for Figure 2 comes from 61 years (1960 to 2020). Figure 3 compares the risk for the last 20 years (2001 to 2020) with the risk in the previous 20 years (1981-2000). It is clear that days over 30 degrees C are coming earlier; the red line showing risk in recent decades is shifted above and to the left of the brown line. The risk of frost is also much greater in the last 20 years. It is hard to say whether this is a permanent shift, but it supports local experience that recent decades have had damaging frosts at a critical period. This timing may contribute to stem frosts.

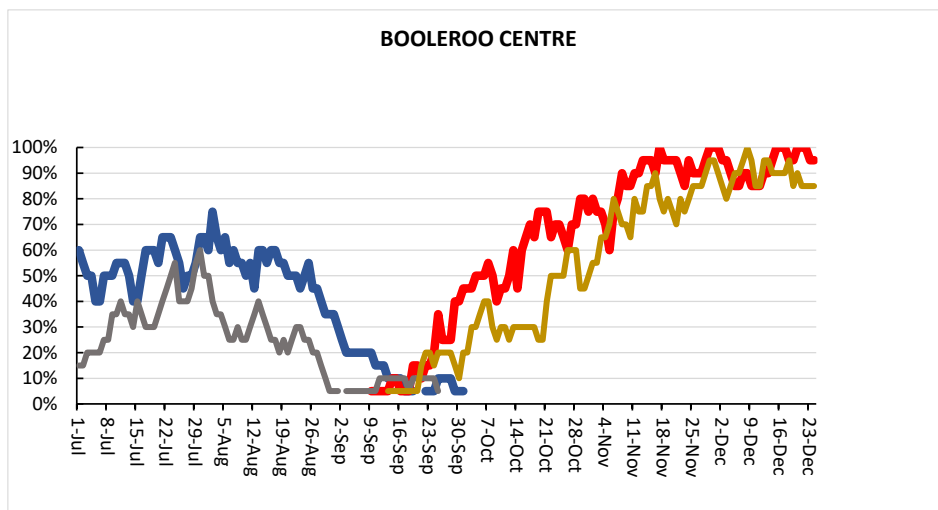


Figure 3 – The chance of at least one day in seven measured at Booleroo being zero degrees or colder and 30 degrees or warmer in the last 20 years from 2001 to 2020 (blue line and red line) or the previous 20 years from 1981 to 2000 (grey line and brown line).

### What to expect in 2021

Frost risk increases when there is an early break. The very late break to the season in 2021 has meant that even dry sown crops didn't emerge on time and hence crops will generally be later and likely to be more prone to heat stress than frost.

The Bureau of Meteorology has declared a negative Indian Ocean Dipole (IOD) [Climate Driver Update \(bom.gov.au\)](https://www.bom.gov.au/climate/updates/2016/10/16-10-2016-iod-negative/) A negative IOD is associated with warmer waters to the north west of Australia and wetter conditions. The increased cloud cover and wetter conditions are generally less conducive to frost. However, analysis conducted by SARDI Climate Applications for key sites in South Australia shows a minor decrease in the number of frosts over the season (not consistent at all sites) and even less impact on late spring frosts. Unfortunately, late spring frosts remain a random low frequency but high consequence event. The negative IOD suggests a swing towards wetter conditions, but only a small shift towards slightly lower frost risk.

The last negative IOD was 2016, and this was a wet spring with relatively low frost incidence. However, there were some damaging frosts, especially in the Clare region. The experienced agronomist Mick Faulkner made the important point that frost in a drought adds insult to injury, but the main damage to the farm enterprise is the low yield due to the lack of rain. The cost of a frost in a good season is much greater. Another problem of a frost in a wet spring is that cutting hay is more challenging and finding a profitable market can also be difficult.



# Monitor for mice before they take hold

By Steve Henry, CSRIO research officer

Farmers are readying for a bumper winter grain harvest, but could it be dampened by mice?

The winter crop is looking good, but so are conditions for mice. Early spring is a crucial period for farmers to protect their winter harvest and the best way to do this is to understand the level of mouse activity in paddocks and start baiting at the first signs of mice.

While mouse populations were expected to decline over the winter months, the cold and wet haven't reduced numbers so they remain a concern. Once crops start to develop, mice are likely to take advantage of food, shelter and moisture, and the population increase could be dramatic.

Parts of Victoria are already reporting more mice than usual for this time of year and there is a critical window of opportunity for managing mouse numbers before breeding starts, numbers increase and before crops begin to ripen.

To understand what's happening on the ground, farmers need to walk through paddocks and check for signs of mice in multiple areas. It's imperative that farmers look for active mouse burrows and any damage to crops. In cereals this may be chewing at the node or stem. In canola and legume crops, growers should be inspecting flowers and pods for damage.

At the first sign of mice, growers need to be prepared to bait, preferably with 50g/kg zinc phosphide spread at 1kg/ha as controlling mouse numbers now could effectively reduce the number of mice when breeding gets underway. Adhere to label instructions and be aware of the 14-day withholding period before harvest.

Once crops develop heads or pods, management with baits becomes more difficult because of the amount of food provided by ripening crops. Mice usually start breeding in spring but if conditions are favourable, breeding can start early. Mice start breeding when they are six weeks old, and litters of six to 10 pups are born every 19 to 21 days.

## Tips for farmers:

- Download mouse chew cards from the [GRDC Mouse Control](#) page.
- Bait when there are low levels of alternate food and before crops ripen.
- Do not bait ahead of a significant forecast rain event. Ideally bait should be applied where dry weather is forecast for at least three to four days.
- Put mouse bait out before other pest/nutrient treatments. This gives mice the chance to encounter the bait before they discover any other new substances in a paddock.
- Do not mix mouse bait with snail/slug bait and do not apply mouse bait with a surface application of urea. Zinc phosphide can be scraped off the surface of the treated grain when agitated with other substances in the spreader.
- Bait on the ground is more likely to be taken before mice climb plants to eat developing seed heads.
- Co-ordinate baiting strategies with neighbouring farmers for area-wide management and highest impact.
- Measure harvester loss, minimising grain on the ground after harvest will assist in reducing populations of mice in stubbles.
- Report and map regional mouse activity using the [MouseAlert website](#).
- Further information can be found at [Tips and Tactics: Better Mouse Management - GRDC](#).



Photo: Mice Damage on Wheat



8 July 2021

Media Release

## **Farmsafe Australia Launches a New Campaign: Farming Not Harming**

Farmsafe Australia recently launched a new campaign, aimed at reminding farmers of the roles that they play in shaping a safe, healthy and productive working environment on their farms. The campaign highlights the opportunities that farmers have to be mentors, teachers and supporters and how demonstrating those leadership styles may reduce or eliminate psychosocial risks on their farm.

"Farmers are generally aware of the physical risks and hazards on their farms, but there are less obvious risks that are important to draw attention to as well," Farmsafe Australia's Chairman Charles Armstrong explained, "Psychosocial risks such as high work demands, bullying, isolation, and even having little control over the weather or the market are often the source of high levels of stress. High stress environments can contribute to or even cause, work-related incidents that may lead to serious injury or even fatality."

Agriculture consistently ranks as one of the most dangerous industries to work in here in Australia. Farmers have a duty under WHS legislation to provide a healthy and safe workplace, and that includes the mental and emotional wellbeing of their employees.

"Whether they realise it or not, farmers and managers are shaping the workplace culture on their farms through their actions and behaviours. By role modelling safe and supportive practices, having zero tolerance for bullying and harassment, and shaping a strong safety culture on farm, you ensure that your workers know that you take your obligations seriously. And you may also improve your productivity." Mr Armstrong continued.

According to the Australian Workplace Barometer Report commissioned by Safe Work Australia, depression costs Australian employers on average approximately \$8 billion every year through sick leave and/or loss of productivity due to working while sick. \$693 million of that figure is attributed to job strain and bullying.

### **Guide Available for Download**

As part of this campaign, [a new resource](#) has been added to Farmsafe Australia's library of information, available on the [Farmsafe website](#), as a guide for farmers and managers to navigate some of the less obvious risks and hazards on farm. The guide provides examples of psychosocial risks and provides suggestions on how to mentor, teach and support staff to mitigate these risks.

By investing in and creating a safe, healthy and productive working environment, Australian farmers can ensure that on their farm, they are farming not harming.

Media Contact: **Stevi Howdle**  
**Executive Officer**  
**0488 298 499**





## NAVIGATING THE ROCK AND THE HARD PLACE

Farming life is full of uncertainty and unpredictability. We might not always be able to choose what happens to us, we don't have control over when it rains or what the sheep prices do, but we do have control over the choices we make every day.

ACT for Ag is a practical skills program especially for farmers, their families and rural communities. Working with the unique challenges that we regional people face, the program teaches us how to adapt our behaviors and take steps towards what truly matters to us, even during the tough times.

### DEVELOP PRACTICAL SKILLS TO:

- Notice and observe your own experiences from a new perspective and zoom out from your situation
- Unhook from challenging and uncomfortable thoughts and reduce their impact on your behaviour and performance
- Untangle from work-related worry
- Build personal resilience, enabling an alternative response to stressful situations
- Improve your ability to live in the present (rather than entangled in thoughts of the past or future)
- Explore your personal values and define how you want to show up as a person, even during the tough times
- Apply to real life situations and take the steps that move you towards what's most important to you
- Help you support others when they may be struggling



## NAVIGATE TOGETHER



### WITH UPPER NORTH FARMING SYSTEMS

#### 4 WEEK ONLINE TRAINING COURSE INCLUDES:

- 4 x 1 hour + 30 minutes optional Q&A time
- a hardcopy of the ACT for Ag handbook
- additional resources to keep you reminded and on track
- ongoing access to helpful tools, audio exercises and the course videos; and
- connections and support from others within the ACT for Ag community

**FREE**  
**BEGINNING 1PM**  
**WEDNESDAY SEP 15<sup>TH</sup> 2021**



# DROUGHT RESILIENCE REGIONAL WORKSHOPS



WUDINNA • PORT AUGUSTA • LOXTON • ORROROO • ROSEWORTHY • NARACOORTE

[> REGISTER NOW](#)



**SA Drought Resilience Adoption and Innovation Hub**

## **Regional Nodes Roadshow Workshops**

**FREE COMMUNITY WORKSHOPS TO INFORM  
SA DROUGHT HUB PRIORITIES – REGISTER NOW**

A major step towards preparing South Australian farmers, industries and regional communities for future droughts is about to be taken.

The South Australian Drought Resilience Adoption and Innovation Hub is preparing to conduct a series of regional roadshow workshops to identify each region's priorities for building drought resilience. Workshops will be held in Wudinna, Port Augusta, Loxton, Orroroo, Roseworthy and Naracoorte.

A strong farmer representation is being encouraged and the workshops are open to all regional community members – not just those who work in agriculture – who are keen to contribute ideas about strategies to strengthen local drought preparedness and endurance.

The workshops will be vital in defining and co-designing the future activities of the Hub and five regional Nodes. The workshops are the most important opportunity to begin to identify the priority activities the SA Drought Hub should be delivering for the next three years.

They will be positive and highly interactive meetings involving regional Hub partners, primary producers and other stakeholders where the practices and technologies each region needs to build their drought resilience will be brainstormed.

Workshops will be held on the following dates:

**Tuesday, September 14 – Upper North (low rainfall)**

Orroroo – Blacksmith's Chatter, 10.30am-2.00pm (incl lunch)

**Thursday, September 16 – Mid North (medium rainfall)**

Roseworthy – University campus, 7.00pm-10.00pm (refreshments)

[Register now](#)

Registration is essential to ensure a COVID-safe event. The workshops, being conducted through an in-person and online format, will be moved to online-only if the COVID-19 situation changes. Registrants will be kept up to date on any changes as they occur.

For more information, email [sadroughthub@adelaide.edu.au](mailto:sadroughthub@adelaide.edu.au)



# SARDI

## MINNIPA AGRICULTURAL CENTRE FIELD DAY

**WEDNESDAY 15<sup>th</sup> September 2021**

**Come and see what's happening at the Minnipa Ag Centre**

Broad-acre crop varieties and research field trials

Expert speakers delivering the latest information

*Herbicide residues*

*NVT wheat and barley*

*Management of early sown crops*

*Pulses & vetch*

*Herbicide resistance*

*Barley grass management strategies*

*Dryland legume pasture systems*

*Calcareous soils*

*Improving lamb survival*

*Ag-Tech – variable rates*

*Sandy soils*

**Date: 15 September 2021**

**Time: 9am to 5pm (Registration from 8.30am)**

**Location: Minnipa Agricultural Centre, 226 McKenzie Rd, Minnipa SA**

**RSVP Essential (limited numbers due to COVID): Phone 8680 6200**

**or email [Leala.hoffmann@sa.gov.au](mailto:Leala.hoffmann@sa.gov.au)**

**Limited catering available. Bring your own if possible.**



# BETTER HEALTH FOR BETTER WEALTH WORKSHOP

■ ■



WOOLPRODUCERS  
AUSTRALIA

# JAMESTOWN AGRONOMY CENTRE

*SPRING FIELD DAY*

**TUESDAY 14<sup>th</sup>  
SEPTEMBER**

**8am** – Breakfast available

*(Provided by J150 committee)*

**9am** – Official start and intro

**9:30am** – Group sessions; *Speakers include leading Technical Support and National Product Development Managers from partnering companies*

**10:30am** – Group swap over

**11:30am** – Gather back. *WeedSmart presentation by Jana Dixon*

**12pm** – Lunch available *(Provided by Elsewhere Clay Target Club)*

**Jamestown Racecourse**  
*'Racecourse Road'*

- Wheat, Barley and Canola Variety Comparisons
- Wheat Variety x TOS for Frost Mitigation
- Dual Purpose and Awnless Wheat
- Wheat Variety x Depth of Sowing x Pre-em Technology
- New Herbicide Technologies
- Biostimulants + Biological fertilisers
- Canola Herbicide Technology
- Pasture Demo

**AgXtra**  
Research Partners  
for Crop Innovation

**Steph Lunn**  
**0430 113 583**  
[slunn@agxtra.com.au](mailto:slunn@agxtra.com.au)

**For RSVPs and  
further info:**

**Neil Wittwer**  
**0422 057 715**  
[nwittwer@agxtra.com.au](mailto:nwittwer@agxtra.com.au)



# GROWER FORUMS



**SOUTHERN REGION**



## What's holding back profitability and productivity on your farm?

Join our free forums to provide your input on future GRDC investment in research, development and extension and hear about current, locally relevant GRDC projects.

**MAITLAND BOWLING CLUB | 10.00am - 1.00pm, Sept 22**

**MELROSE INSTITUTE HALL | 12.30pm - 5.30pm Sept 23,**

in partnership with Upper North Farming Systems'  
Eastern Spring Crop Walk

**REFRESHMENTS PROVIDED**

**REGISTER NOW: [bit.ly/GRDCGrowerForums](https://bit.ly/GRDCGrowerForums)**

SARDI

# 2021 Root Health Workshops

RIVERTON • MALLALA • NARACOORTE • PASKEVILLE



IMAGE: TIM LARWOOD

## Underperforming crops? Get to the root of the problem

**Growers and advisors are invited to attend this SAGIT funded workshop to investigate the impacts of soil-borne root diseases on plant health.**

### THE WORKSHOP WILL:

- Explore the main soil-borne root diseases in your region, providing an insight into symptoms and management.
- Include an interactive session where you get to score the root health of your own cereal and pulse crops.
- Discuss nodulation in pulses.
- Provide opportunity for discussions with SARDI pathologists.
- Demonstrate how PREDICTA®B can be used to make better informed variety, rotation and paddock management decisions.

### POINTS TO NOTE:

- All participants are required to bring along cereal or pulse plants. We will post you sample bags with further instructions.
- Plants can be assessed by PREDICTA®B at participants expense to confirm diagnosis. Results will be sent to the owners within 4 weeks post workshop and will be followed up with an online consult.
- Includes resource material (back-pocket guide)



IMAGE: KATHERINE LINSSELL

**SPEAKERS**

Presenters will include national and regional research leaders such as:

- Alan McKay, SARDI
- Katherine Linsell, SARDI
- Tara Garrard, SARDI
- Blake Gontar, SARDI

**COST**

**The workshop costs \$35 inc. GST.**

This includes morning and or afternoon tea plus workshop materials.

**REGISTRATION**

Registration is essential. Head to: <https://bit.ly/3rXvaL4>

**FURTHER INFORMATION**

**Loren Revell-Karutz**

**M 0410 548 454**

**E [loren@agcommunicators.com.au](mailto:loren@agcommunicators.com.au)**

**A note on participant safety**

In light of COVID-19 we wish to reassure participants that your safety is our number one priority. Places on these workshops will be limited due to social distancing laws and the COVID-19 safety plan measures in place with each selected venue. During each workshop hand sanitiser will be made available along with appropriate food safety practices and the legal 1.5m spacing between participants.

A reminder on participant safety measure will be sent out a few days prior to each workshop to all registered participants.

In the event these workshops need to be postponed or cancelled due to an outbreak all participants will be refunded and content will be delivered in an alternative format.

**WORKSHOP LOCATIONS**

**RIVERTON - 2 SEPTEMBER**

Riverton Town Hall

9.00am - 12.00pm

**MALLALA - 7 SEPTEMBER**

Mallala Football Club

9.00am - 12.00pm

**NARACORTE - 16 SEPTEMBER**

Naracoorte Town Hall

2.00pm - 5.00pm

*Presented in collaboration with MacKillop Farm Management Group Soil Forum being run from 9am-1pm.\**

**PASKEVILLE - 6 OCTOBER**

Paskeville Community Centre

9.00am - 12.00pm

**\*Make sure to register for the MacKillop Farm Management Group Soils Forum- Using soil data to make good decisions being run earlier in the day in Naracoorte. Details below:**

Join MFMG to find out about all things soils in our local environment. Join our guest presenters for:

- Masterclass in soil sampling, analysis and interpretation – Dr Sean Mason, Agronomy Solutions and Dr Mel Fraser, PIRSA
  - Key indicators of soil chemical fertility
  - On farm tests and soil sampling strategies
  - Understanding different lab methods
  - What do all the numbers mean? Interpreting soil test results and addressing constraints
- Challenges for nutrient availability and alternative fertiliser sources in alkaline soils – Dr Nigel Wilhelm, PIRSA
- Management of and the latest trial results in acid soils – Brian Hughes, PIRSA

**Registration is essential.**

**Head to: <https://bit.ly/3rXvaL4>**



# 1500 harvest jobs 1500 reasons



## Meet Michelle & Darren

*Grey nomads*

Michelle and Darren first worked the harvest so they could fund their retirement travel. Now it's an annual event that they both look forward to.



Now hiring  
[viterra.com.au](https://viterra.com.au)

## Upcoming Events Calendar

September		
Date	Event	Details
1	Livestock Forum: Rebuilding Stock Numbers	Jodie Reseigh-O'Brien 0428 103 886
8	Growing Profit from Precision Ag	Morgan McCallum 0459718181
9	UNFS Annual AGM and Expo	Kristina Mudge 0438 840 369
13	Better Health for Better Wealth Livestock Workshop - Jamestown	Hannah Ling (08) 8648 5981
14	Better Health for Better Wealth Livestock Workshop - Hawker	Hannah Ling (08) 8648 5981
14	Jamestown Agronomy Centre Field day	Steph Lunn 0430 113 583
15	SARDI Minnipa Agricultural Centre Field Day	Amanda Cook 0427270154
21	Hart Field Day	Sandy Kimber 0427 423 154
23	GRDC Grower Forum in Partnership with Upper North Farming Systems 'Eastern Crop Walk'	Morgan McCallum 0459718181
24	Nelshaby Ag Bureau & Upper North Farming Systems Wester Spring Crop Walk	Nathan Crouch 0407 634 528
29	Upper North Farming Systems Strategic Board Meeting – Via Zoom	Ruth Summerville 0401042223
October		
1	Masterclass Controlling foxes, rabbits, deer and weeds	Jen Gills 84290438
13	Upper North Farming Systems Operations Committee Meeting – Booleroo Centre 6pm BBQ, 7pm start	Morgan McCallum 0459718181
14	Drought Hub Resilience Workshop	Email: <a href="mailto:sadroughthub@adelaide.edu.au">sadroughthub@adelaide.edu.au</a>

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## Funding Bodies

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Australian Government  
Department of Agriculture,  
Water and the Environment



Future  
Drought  
Fund

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## Gold Sponsors

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## Sliver Sponsors

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## Bronze Sponsors

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Global Grain Genetics

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## Delivery Partners

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SARDI



SOUTH AUSTRALIAN  
RESEARCH AND  
DEVELOPMENT  
INSTITUTE



AIR EP  
Ag Innovation & Research  
Eyre Peninsula



Breezy Hill  
Precision Ag Services







# Upper North Farming Systems Contact



## Details 2020/21

### Strategic Board Members

**Matt Nottle—Chairman** - Booleroo Centre  
matt.nottle@hotmail.com  
0428 810 811

**James Heaslip—Vice Chairman and Booleroo/Appila Hub Rep** - Appila  
james.h.heaslip@gmail.com  
0429 233 139

**Joe Koch Financial Officer and Ag Technology Hub Rep** Booleroo Centre  
breezyhillag@outlook.com  
0428 672 161

**Barry Mudge Board Member** - Baroota  
theoaks5@bigpond.com  
0417 826 790

**Jim Kuerschner Board Member and Morchard/Orroroo/ Pekina/Black Rock - Black Rock**  
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**Chris Crouch Board Member**— Wandearah  
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**Andrew Walter Board Member and Melrose Hub Rep** - Melrose  
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**Andrew Kitto Board Member and Gladstone Hub Rep** - Gladstone  
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**David Clarke Board Member** - Booleroo Centre  
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**Michael Zwar Board Member**  
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**Kym Fromm - Public Officer - Non-Committee Member** - Orroroo  
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### Operations Committee Members Industry Representatives

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**Steph Lunn**  
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### Morchard/Orroroo/Pekina/Black Rock

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**Quorn**

### **Paul Rodgers**

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### **Wilmington**

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**New Farmer Representatives Matt Hagger**  
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