# UNFS update

Upper North Farming Systems Newsletter April 2018

## 2017 Time of Sowing trial results

*Hannah Mikajlo*

It's that time of the year again when everyone's gearing up for sowing, and just in time, here are the results from last year's SAGIT-funded Time of Sowing trial. If you'll recall, the objective of the trial was to gain a better understanding of how to manage frost risk and heat stress in Upper North conditions by manipulating the combination of time of sowing and wheat variety. Last year the trial site was located in one of Todd Orrock's paddocks in Fullerville. Our times of sowing were the 18th of April, the 8th of May and the 26th of May. Our wheat varieties included the mid-maturing spring wheat Trojan, the early-mid spring wheat Mace, the early spring wheat Hatchet, and the mid-late spring wheat Cutlass, as well as a new winter wheat variety developed by AGT, which has recently been given the name Longsword. A statistical analysis has now been performed on the data collected and the main points are summed up below.

***The trial being harvested by SARDI. PHOTO:*** *Joe Koch.*

***Yield:***

For the first time of sowing, Cutlass tended to perform the best, yielding on average 1.72 t/ha. Mace came in second, yielding around 1.51 t/ha, while Longsword and Trojan came in third and 1.24 and 1.13 t/ha respectively. Hatchet was hit incredibly hard by frost, and on average yielded only 0.28 t/ha.

## In This Issue

In contrast to how poorly Hatchet performed when sown in mid-April, when sown in early-May it actually had the highest average yield for all varieties and at all times of sowing (1.9 t/ha). Cutlass also performed well at this time, yielding 1.78 t/ha. Longsword and Mace yielded similarly to each other at around 1.6 t/ha, while Mace had the lowest average yield, with only 1.32 t/ha.

When sown in late-May, Cutlass (1.18 t/ha) and Longsword (1.29 t/ha) didn't perform particularly well due to moisture and heat stress. Cutlass and Longsword are the two latest maturing varieties, so this was expected. On average, Mace (1.46 t/ha) yielded slightly better than Cutlass and Longsword, while Hatchet and Trojan (1.69 and 1.79 t/ha respectively) had on average the highest yields.

When looking at each individual variety and analysing how it performed across the three different sowing dates, they were usually fairly consistent, particularly Longsword and Mace. Hatchet was obviously the exception due to the frost damage it suffered, as was the late sown Cutlass due to heat and moisture stress. The analysis also indicated that Trojan performed a bit better when sown in May compared to April.

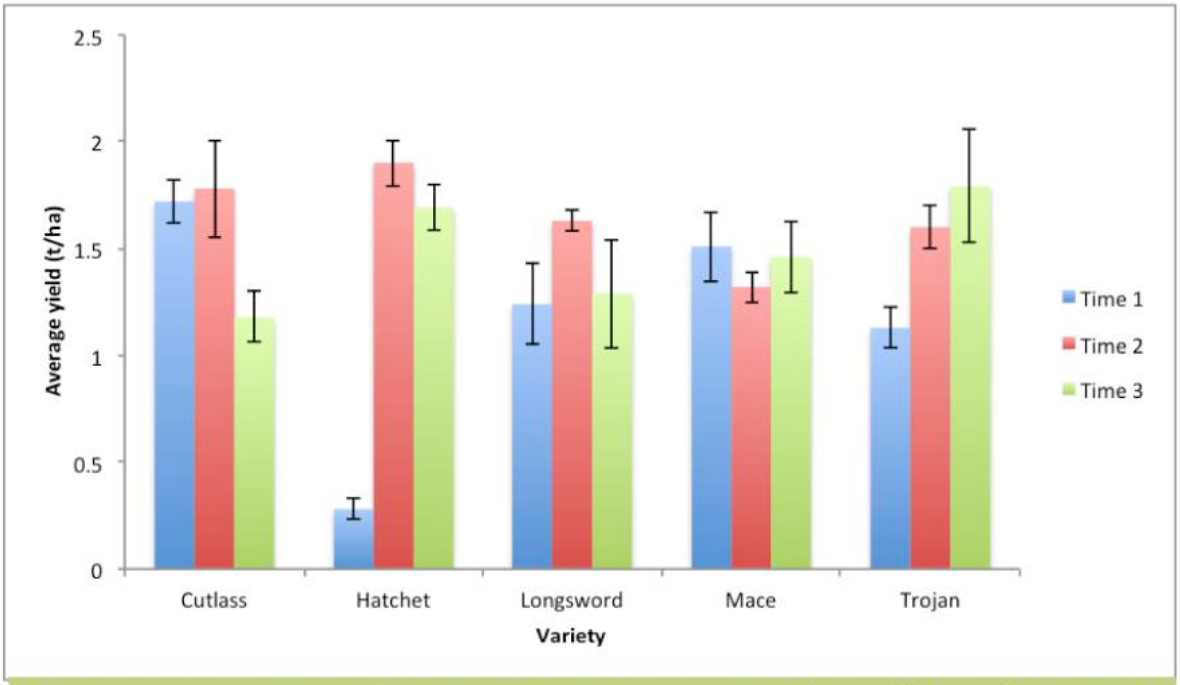


*Figure 1. Yield (t/ha) for each of the wheat varieties at each time of sowing (18th April, 8th May, 26th May). Standard error bars are shown.*

## ***Test weight:***

For the first time of sowing, Hatchet had a slightly lower test weight on average, at only 71.6 kg/HL, while all the other varieties had at least 74 kg/HL. For the second time of sowing, all varieties had test weights of between 74.4 and 76.95 kg/HL. For the third time of sowing, Cutlass ended up having the highest test weight (77 kg/HL) and Hatchet the lowest (73.55 kg/HL). The other three varieties fell in between.

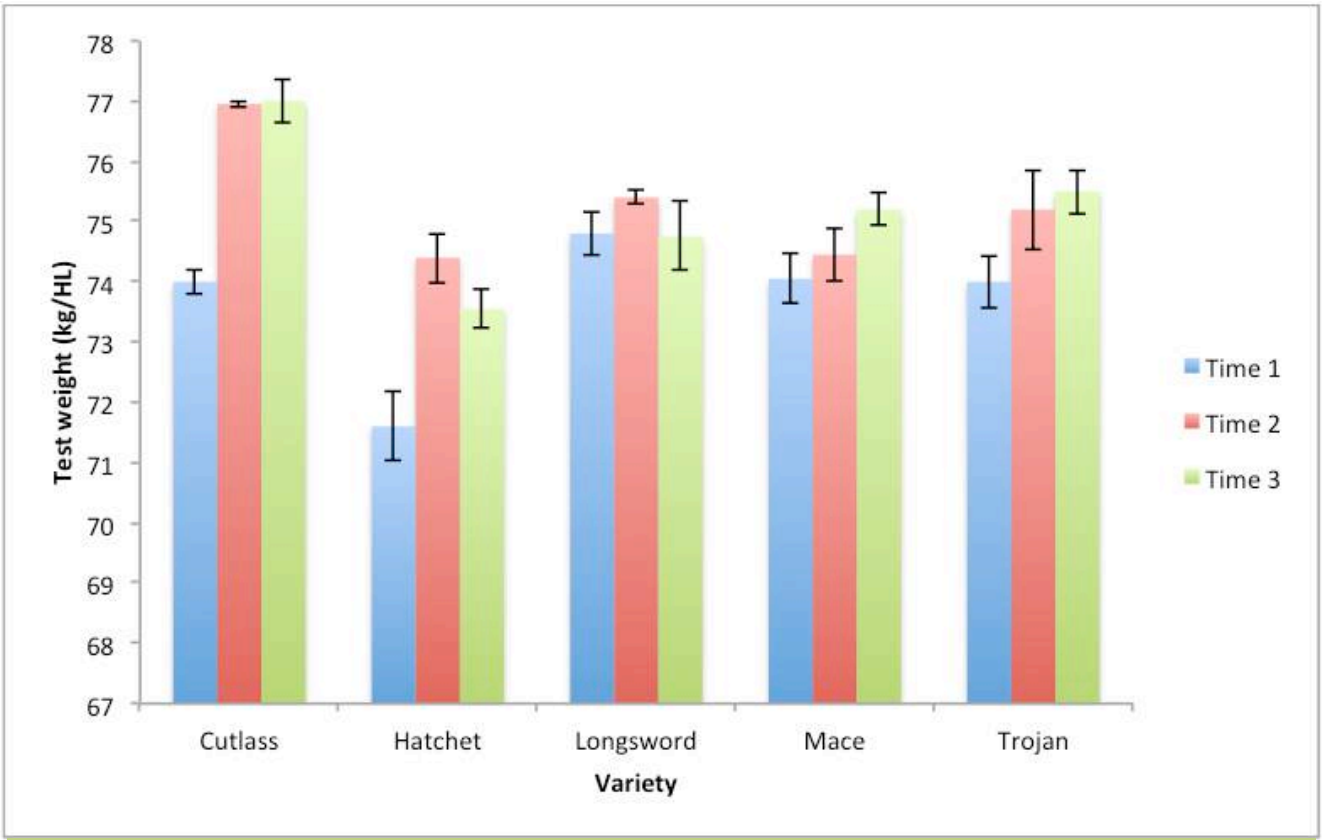


*Figure 2. Test weight (kg/HL) for each of the wheat varieties at each time of sowing (18th April, 8th May, 26th May). Standard error bars are shown.*

## Wheat varieties used in the trial:

**Mace:** often considered the benchmark variety in the Upper North, although it is being replaced by Scepter. Mace has broad adaptation, and has a consistently high relative yield in a wide range of conditions. Mace is an early-mid maturing spring wheat variety. In 2018, we will be replacing Mace with Scepter in our Time of Sowing trial.

**Trojan:** a mid-fast maturing spring wheat variety, relatively high yielding.

**Cutlass:** a mid to late-maturing variety, with a similar maturity to Yitpi.

**Hatchet:** a very fast-maturing variety developed from Axe.

**Longsword (previously called RAC2341):** a newly developed fast-maturing winter wheat variety. It requires a cold period (vernalisation) to initiate its reproductive phase, enabling early sowing whilst still aiming for the correct flowering window.

***Protein:***

Varieties were consistent for protein content regardless of the time of sowing. The exception was the earliest sown Hatchet, which is probably due to the significant frost damage it suffered.

The different varieties were also compared with each other for each time of sowing. For the first time of sowing, Hatchet on average had a higher protein content (15.6 per cent) than the other four varieties. Trojan and Longsword came in second (13.3 and 12.9 per cent respectively) while Cutlass and Mace had on average lower levels (up to 11.8 per cent). For the second time of sowing, Cutlass had on average a slightly lower protein content than the other varieties, although Hatchet in some cases had a similar level. There were fewer obvious differences for the third time of sowing, although on average Trojan had a slightly lower protein content than Longsword and Mace, while Cutlass and Hatchet were in between them.

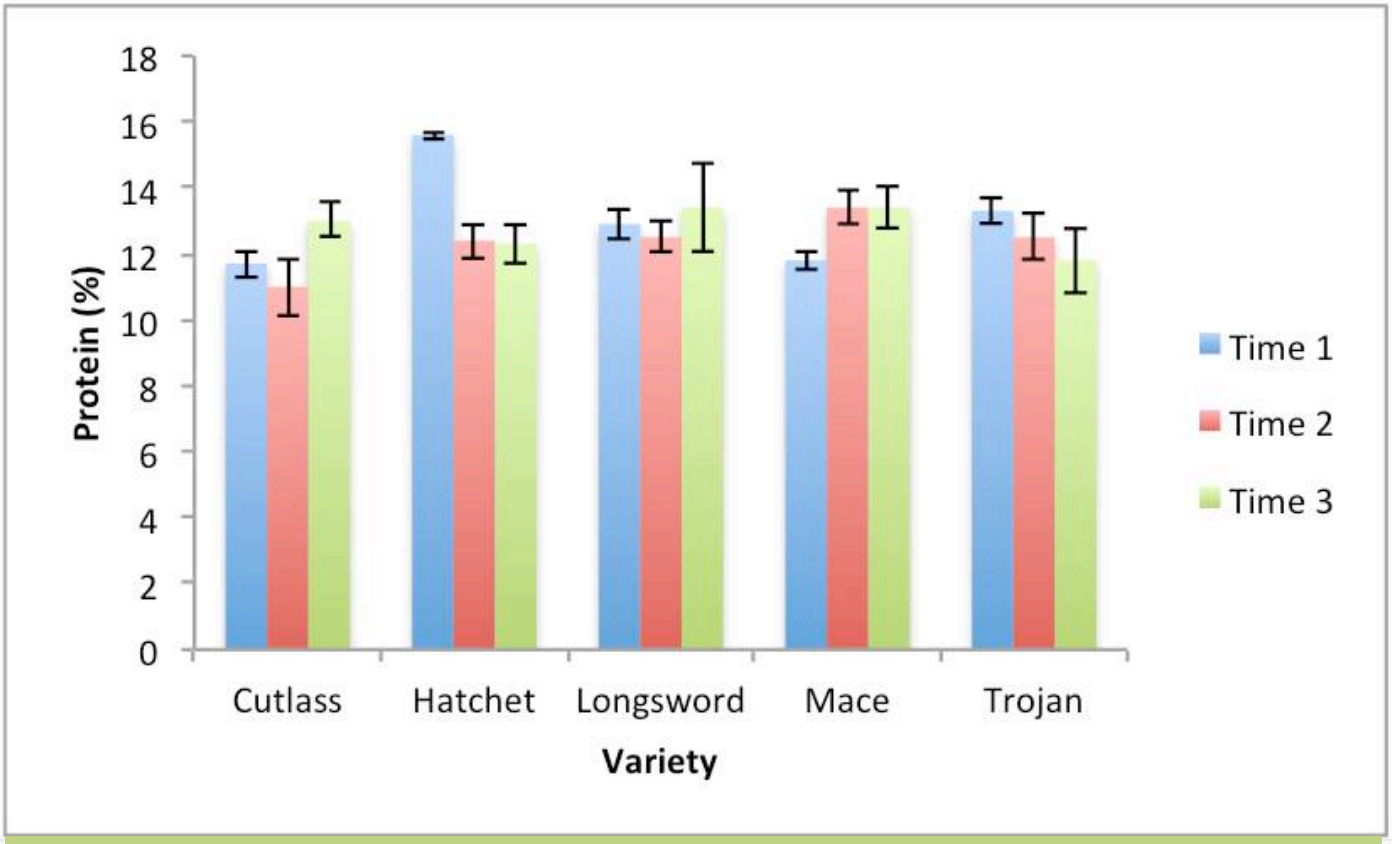


***Figure 3. Protein (%) for each of the wheat varieties at each time of sowing (18th April, 8th May, 26th May). Standard error bars are shown.***

***Screenings:***

In the lead up to the trials being harvested we were expecting some of the more frost or heat-stressed plots to have bad screening levels, but surprisingly they all had well-below 1 per cent.

***Frost:***

The temperature sensor in the paddock showed that we ended up having around 44 separate frost events. As the graph below shows, Hatchet was by far the worst affected variety, especially when it was sown in mid-April.

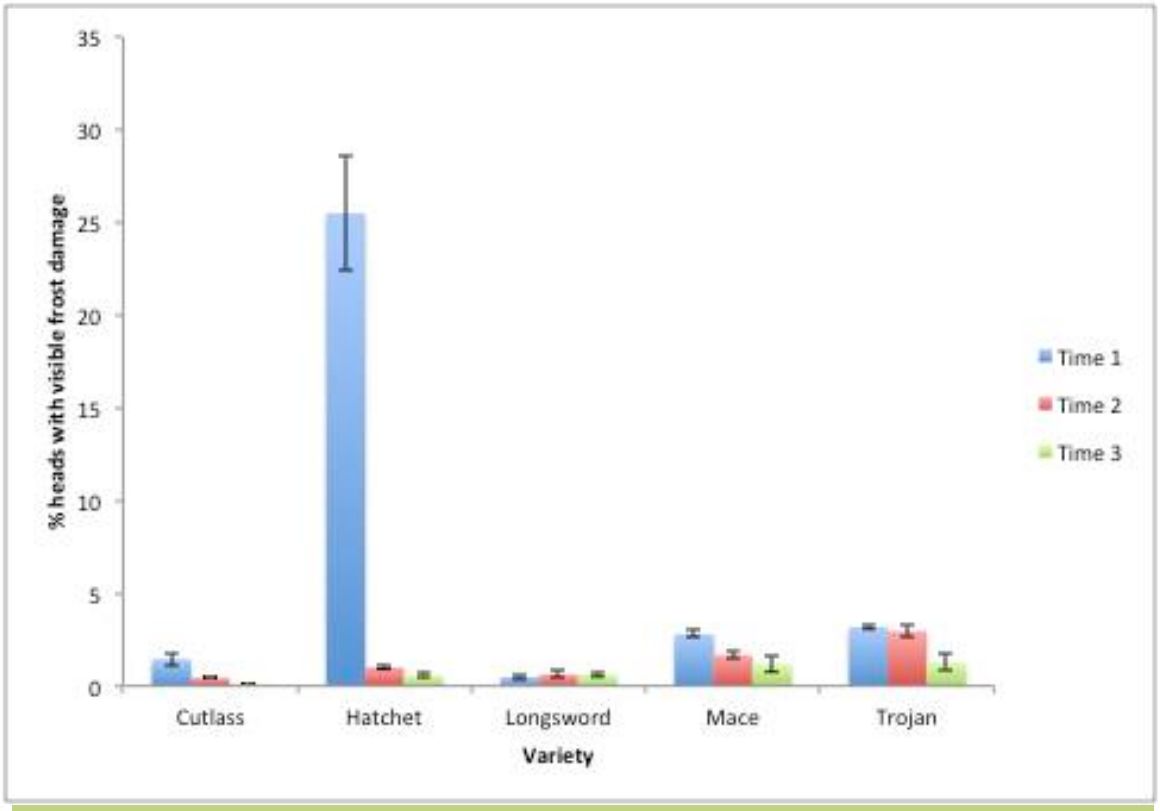


*Figure 4. Percentage of wheat heads with visible frost damage. Standard error bars are shown.*

***Some frost-damaged heads. PHOTO:*** *Hannah Mikajlo.*

The first time of sowing for this year's trial is about to be sown, so watch this space for more information on the project over the next 12 months.

If you have any questions about the trial, please send project officer Hannah an email (projects@unfs.com.au).

## UPPER NORTH FARMING SYSTEMS
## PRE-SEEDING INFORMATION SESSION

On Friday, 20th April, Ian and Sue Ellery will be hosting a pre-seeding information session at Coomooroo View.

The session starts at 4pm, and will include…

- Latest Chemical and Agronomy Information (Andrew Catford, **Northern Ag**).
- Guidance Systems Update (Ryan McCallum, **Flinders Machinery**).
- Inspection of Ian Ellery's new Hardi Boom Spray.

Refreshments provided. Come and chat prior to the session break. Looking forward to seeing you all there!

## Pulse check group meetings

Recently, UNFS hosted its second pulse check group meeting as part of the wider Southern Pulse Extension project.

The project is a GRDC investment aimed at providing growers and advisors with the information and resources to make informed decisions and maximise production and income potential from pulses. UNFS will be running four pulse check meetings per year, alternating between the west and east side of the Flinders Ranges.

Our most recent meeting was held in Booleroo Centre. Presenters Daniel Hillebrand and Matt Foulis focused on pre-seeding considerations, including pulse gross margins, paddock selection, varieties, pre-emergent herbicides, seed dressings and inoculation, sowing rate and timing. SARDI's 2017 Break Crop Trial results were also discussed, as were the implications of the Indian pulse tariffs.

Our next meeting is scheduled to occur on the western side of the Ranges in a couple of months. We will send out more details closer to the date.

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## SOIL MICRONUTRIENT AND ACIDITY EVENT

On Monday 16th April UNFS will be running a soil micronutrient and acidity workshop in the North Laura Hotel, starting at 4:30 pm.

Andrew Harding (Rural Solutions SA) and Jeff Braun (The Agronomist) are lined up as speakers.

The event is free to attend and all are welcome.

This workshop is part of two new UNFS projects; a soil acidity project funded by Natural Resources (Northern and Yorke) and a micronutrient project funded by SAGIT.

The Upper North has not traditionally had many problems with acid soils, but some farmers in the region have noticed a drop in soil pH in the last five years. The project is aimed at increasing awareness of soil pH and its implications for productivity and sustainability.

The micronutrient project is aimed at investigating the responses of Upper North soils to micronutrient applications, exploring different methods of application, improving farmer knowledge of micronutrients and their role in plant development and their potential for tie-up/deficiency.

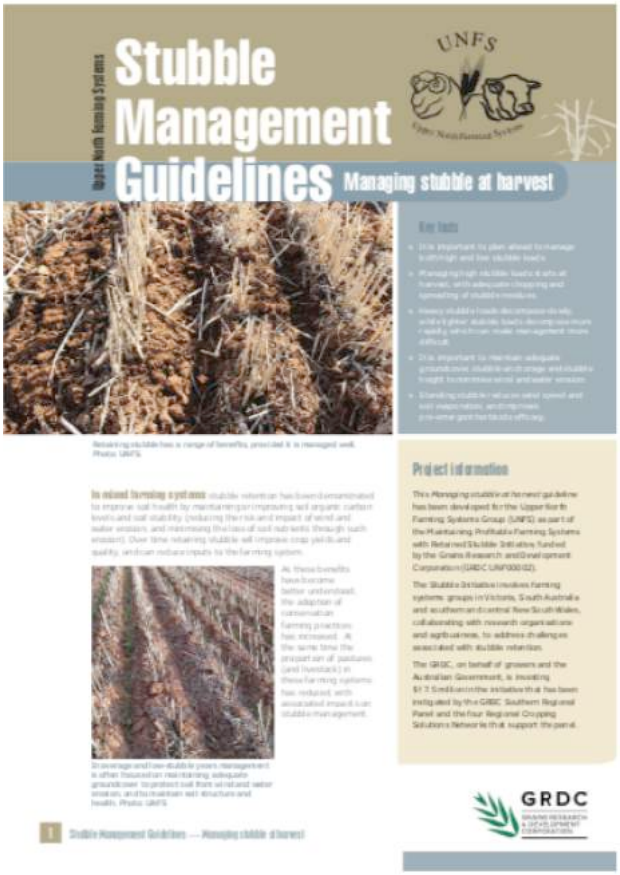
In the next edition of the newsletter, we'll also include the latest results from Andrew Harding's liming trial at Wirrabara.

Natural Resources
Northern and Yorke

SAGIT

## UNFS Stubble Initiative Update

UNFS's current flagship project, the GRDC-funded Stubble Initiative, will be winding up later this year.




As part of the project, UNFS has developed a range of locally-specific guidelines focusing on management practices in stubble retained systems.

We are pleased to announce that we have nearly completed all our guidelines and most of them are now ready to be released, including...

- Break crop options
- More or less stubble
- Mechanical stubble management
- Stubble management at harvest
- Seeding into stubble retained systems
- Monitoring stubble
- Maireana weed
- Statice weed
- Yellow leaf spot
- Mice
- Earwigs
- Millipedes
- Snails

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We plan to officially launch all our guidelines at the next members expo, coming up in the next few months.

We are also about to conduct a final survey of participants as well, so be prepared; you may get a phone call.

# EARLY SEASON TACTICS FOR RUSSIAN WHEAT APHID MANAGEMENT

From PESTFACTS South Australia, Issue 1, 12 April 2018
http://www.pir.sa.gov.au/research/services/reports_and_newsletters/pestfacts_newsletter/pestfacts_issue_1_2018/early_season_tactics_for_russian_wheat_aphid_management#toc0

With sowing fast-approaching, growers are deciding on their preferred strategy for managing Russian wheat aphid (RWA), Diuraphis noxia, in 2018. This pest is still a new arrival in Australia and much remains to be learned about its potential impact on cereal crops. Experience and trial work in the last two seasons provide some useful pointers to help inform decision-making.

The first step to avoid RWA is to eliminate the green bridge at least 4 weeks before sowing (see GRDC Media Release: Act now to manage RWA in 2018 and GRDC Green bridge management a must for RWA control). This aphid readily infests young cereal crops by walking or flying from wild grasses or volunteer cereal plants growing in or adjacent to paddocks. Wild grasses known to harbour RWA include the genera Poa, Bromus, Hordeum, Lolium and Phalaris. Dry conditions prevailing across most of South Australia over recent weeks has reduced the green bridge this season.

If growers decide to use a neonicotinoid seed treatment, the standard label rate is adequate to protect crops from early aphid infestation for 6-8 weeks. This is long enough to reach the cooler periods of winter when new RWA infestations do not occur, due to limited movement. The high rate has not shown any additional benefit over the standard rate in SARDI field trials. However, the use of seed treatment to control RWA is not a 'no-brainer' and may often be unnecessary (read on).

SARDI has conducted RWA field trials in 2016 and 2017 funded by GRDC and SAGIT. Researcher Maarten van Helden (SARDI) reports that RWA was observed in significant numbers only in low rainfall areas. Even in those areas, populations did not always build up to damaging numbers in spring. Where populations remained below current threshold guidelines (autumn: > 20% of plants with aphids. spring: > 10% of tillers with aphids), no yield loss was observed. In fact, RWA presence induced plants to compensate by producing more tillers and heads, and even with some empty heads, there was no overall reduction in yield.

We consider that prophylactic use of seed treatments for RWA is not always warranted and should be reserved for high risk situations. Higher risk factors include early sowing of cereal crops into paddocks where RWA-infested weedy grasses are not able to be controlled prior to sowing.

(Continued on next page).

Alternatively, RWA can be managed effectively using the FITE principle (Find, Identify, Threshold, Enact: GRDC Tips and tactics for Russian wheat aphid), based on monitoring crops and spraying affected areas only if threshold densities are exceeded. APVMA permits are available for foliar insecticides than can effectively control RWA in cereal crops (permit numbers – 83140, 81133). The negative impacts of chlorpyrifos or other broad spectrum pesticides on beneficial insect populations can be reduced by treating only when necessary and treating only affected areas.

*'Seed treatment' or 'FITE':*

This season, new field experiments will be conducted to compare 'prophylactic seed treatment' versus 'FITE' strategies. We ask you to leave a small area untreated, record real aphid pressure if possible and (most importantly) yield. We will try to collect data from your on-farm trials this season to assist in developing improved management strategies. For more information, contact Maarten van Helden on 08 8429 0642 or maarten.vanhelden@sa.gov.au.

**PestFacts** is a free service designed to keep growers and advisors informed about invertebrate pest issues in grain crops during the winter growing season.

**PestFacts relies on your reports** of pest and beneficial invertebrate activity in grain crops. Please contact us directly to report an observation or ask a question.

SARDI provides a **free insect diagnostic service** for subscribers. Send multiple specimens in a non-crushable container along with collection details to: PestFacts, GPO box 397, Adelaide SA 5001.

Follow us on Twitter @PestFactsSARDI

PestFacts map is an interactive tool that allows users to search and view historical pest reports from across south-eastern Australia. PestFacts is provided by the South Australian Research Development Institute (SARDI) Entomology Unit with the support of the Grains Research and Development Corporation.

Previous PestFacts Editions

**Contact: Kym Perry**
**Phone: (08) 8303 9370**
**Mobile: 0421 788 357**
**kym.perry@sa.gov.au**

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## Congratulations to Ruth Sommerville, our Executive Officer

From https://agex.org.au/barossa-improved-grazing-group-ruth-sommerville-announced-as-2018-award-winners/

The 13th Ag Excellence Annual Forum & Awards was held recently at the Grand Chancellor on Hindley. The 2-day Forum provides a dynamic arena for Grower Groups and Industry to share experiences, develop new ideas and foster trends within the Innovation, Technology and Extension space.

The Ag Excellence Perpetual Award for outstanding service was awarded to Ruth Sommerville and nominated by Upper North Farming Systems (UNFS). Ruth has made a substantial and long-lasting contribution to sustainable Agriculture within our State. Her professional expertise combined with hard work and passion for our industry has resulted in outstanding achievements, particularly for the UNFS, and also for the wider community. Ruth has instigated, sourced funds and lead many projects that have greatly benefitted our regions economically and environmentally.

Ag Excellence Chair, Trent Potter commended Ruth on a well-deserved accolade. “Ruth epitomises the regional hero, giving up her time to drive projects for the economic and social well-being of our communities and the environment we live in”.


Congratulations to Jess Koch, whose Ladies on the Land group has secured a new round of funding from SAGIT.

Jess will run a new project titled “Smart farmers, smart farms,” and will run a series of hands-on workshops focusing on topics such as machinery, farm business planning, landcare and native vegetation.

## INFORMATION SESSION

Update on the Australian Honey Bee Industry Code of Practice and Legislation Changes
- Mid North Session -

PRIMARY INDUSTRIES & REGIONS SA
**PIRSA**

6 - 8.30pm Monday 7 May, 2018

Department of Environment, Water and Natural Resources (DEWNR) Office
155 Main North Road, Clare

RSVP:
Teagan Alexander 0439 864 382
teagan.alexander@sa.gov.au

***Tea and coffee provided***

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