

# Minnipa Agricultural Centre update

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SARDI, Minnipa Agricultural Centre

Welcome to the twentieth Eyre Peninsula Farming Systems Summary. This summary of research results from 2018 is proudly supported by the South Australian Grains Industry Trust (SAGIT) and the Grains Research & Development Corporation (GRDC) through the Eyre Peninsula Farming Systems projects.

We would like to thank SAGIT, GRDC and EPARF for their contribution to Eyre Peninsula for research, development and extension and for enabling us to extend our results to all farm businesses on EP and beyond in other low rainfall areas. All articles since 2010 are also available on the EPARF website [www.eparf.com.au](http://www.eparf.com.au). Many of the trials are also catalogued in the GRDC Online Farm Trials Database, [www.farmtrials.com.au](http://www.farmtrials.com.au), which is an excellent searchable resource for finding trials and research outcomes from across Australia.

2018 was the final year for several larger projects, including the *Maintaining profitability in retained stubble systems* (or GRDC Stubble Initiative for short), and the SAGIT funded project *Identifying the causes of unreliable N fixation by medic based pastures*. Several new projects in which MAC and/or EPARF is a partner will commence in 2019, including: National Landcare Program/GRDC Mixed Cover Crops, Soils CRC Herbicide Residues Carryover, GRDC Soil and Tissue testing for P and N, Rural R&D for Profit Dung Beetle Ecosystem Engineers and GRDC Mixed Farming sheep production workshops.

MAC is also involved in a new major project that began in 2018, *"Boosting profit and reducing risk of mixed farms in low and medium rainfall areas with newly discovered legume pastures enabled by innovative management methods"*, or Dryland Legume Pasture Systems (DLPS) for short. This project is supported by funding from the Australian Government Department of Agriculture and Water Resources as part of its Rural R&D for Profit program, the Grains Research and Development Corporation, Meat and Livestock Australia and Australian Wool Innovation. The research partners include SARDI, Murdoch University, CSIRO, the WA Department of Primary Industries and Regional Development, and Charles Sturt University, as well as grower groups. The aim of the project is to develop recently discovered pasture legumes together with innovative management techniques that benefit animal and crop production and farm logistics, and promote their

adoption on mixed farms over one million hectares in the low and medium rainfall areas of WA, SA, Victoria and southern NSW.

We are also currently working on new project submissions on topics such as crop competition for weed control, improving productivity on grey calcareous soils, a new mixed farming extension program and EP farmer resilience, with numerous collaborators and funding sources. Fingers crossed that we are successful on at least some of these!

## Staff

In 2018 we welcomed new casual staff Steve Jeffs, Ashley White and Bradley Hutchings, and farewelled Rochelle Wheaton, Brett Hay and Lauren Cook.

## Students/work experience

Emma Doudle, year 10 student from Navigator College in Port Lincoln completed work experience at MAC in June 2018.

## Visitors

Minister Tim Whetstone, Minister for Primary Industries & Regions and Peter Treloar MP attended an EPARF meeting at MAC on 27 June.

His Excellency the Honourable Hieu Van Le AC - Governor of South Australia and Mrs Van Le, visited MAC on 13 August. Staff gave a presentation of the history and role of Minnipa Ag Centre, and provided a tour of the facilities.

Michael Crawford, CEO and Paul Greenfield, Board Chair of the Soils CRC, visited MAC on 11 July.

SAGIT Board members visited MAC on 20-21 August.

## Events

A range of events were held or attended by MAC staff, with details listed in the following article *Minnipa Agricultural Centre Events in 2018*.

Thanks for your continued support at farmer meetings, sticky beak days and field days. Without strong farmer involvement and support, we lose our relevance to you and to the industries that provide a large proportion of the funding to make this work possible.

We look forward to seeing you all at farming system events throughout 2019, and wish you all the best for a more productive and profitable season!

## Projects

Project name	Funder	Summary
<b>EPARF Sponsored Projects</b>		
Regional Agriculture Landcare Facilitator service delivery	EPNRM	Providing a central contact point for farmers, industry, and community groups. Collection of regional intelligence - understanding the needs of the agricultural community and keeping abreast of emerging challenges, issues or threats that may affect the agricultural sector in the region. Supporting agriculture groups to develop new projects and seek grant funding. End: June 2023
Warm and cool season mixed cover cropping for sustainable farming systems	NLP2/GRDC 4-60A5VY4	The performance of a broad range of cover crops will be evaluated in targeted field trials across the southern region to answer two key questions: What are the new and emerging plant species/varieties, summer and winter active, most suited to different environments across the region? What are the most effective strategies and timings to terminate a cover crop for achieving the optimum benefits for subsequent crops and soil health? End: June 2022
Developing knowledge and tools to better manage herbicide residues in soil	Soils CRC 4.2.001	Development of tools to enable in-field assessment of risk of herbicide carry-over to the crop. End: June 2022
Using soil and plant testing data to better inform nutrient management and optimise fertiliser investments for grain growers	GRDC 9176604	Work with 5 EP growers x 6 paddocks = 30 paddocks on EP. Soil testing of 2 sites per paddock, with fertiliser test strips in 3/6 paddocks sampled on their property. In-season tissue testing (GS30) in the paddocks where test fertiliser strips are located and biomass cut. Field day/workshop to be held at one of the test strip sites in-season. Discussion of soil testing, nutrition and determining fertiliser rates. At the end of the season need to obtain the yield map data from the growers. End: June 2022
Dung Beetle Ecosystem Engineers - enduring benefits for livestock producers	Rural R&D for Profit RnD4Profit-16-03-016	The project aims to improve soil in grazing systems, reduce the spread of diseases and insect pests, such as bush flies, increase pasture health and reduce nutrient run-off into waterways by introducing new dung beetle species and expanding the distribution of existing species. End: December 2021
Using soil water information to make better decisions on Eyre Peninsula	SAGIT EP216	To use an existing network of soil moisture probes across Eyre Peninsula to provide growers across the region with information on how data the soil moisture probes collect can be converted into easily utilized decision support tools that will assist them in targeting yield potential and tailoring inputs to match. End: June 2019
Eyre Peninsula Farming Systems Summary 2016 - 2018	SAGIT EP116	This project will support the cost of printing Eyre Peninsula Farming Systems Summaries 2016, 2017 and 2018, enabling the free distribution to all growers on Eyre Peninsula. End: June 2019
Maintaining profitable farming systems with retained stubble - upper EP	GRDC EPF00001	To produce sustainable management guidelines to control pests, weeds and diseases while retaining stubble to maintain or improve soil health, and reduce exposure to wind erosion. Increased knowledge and skills allowing farmers and advisers to improve farm profitability while retaining stubble in farming systems on upper EP. End: June 2018
<b>SARDI Projects</b>		
Boosting profit and reducing risk of mixed farms in low and medium rainfall areas with newly discovered legume pastures enabled by innovative management methods	Rural R&D for Profit RnD4Profit-16-03-010	Dryland Legume Pasture Systems (DLPS) Develop recently discovered pasture legumes together with innovative management techniques that benefit animal and crop production and farm logistics, and promote their adoption on mixed farms over one million hectares in the low and medium rainfall areas of WA, SA, Victoria and southern NSW. End: June 2022

<b>Project name</b>	<b>Funder</b>	<b>Summary</b>
Nutrient Responses	GRDC <i>UQ00082</i>	This project is developing critical levels for commercial soil tests of N, P, K and S for the major break crops. Two trial sites have been set up on the EP. One is at Minnipa to calibrate Colwell P for canola on a red sandy loam. The other is at Mt Hope on a gravelly sand over limestone and is to calibrate the deep mineral N test for canola. End: June 2022
Improving production on sandy soils in low and medium rainfall areas	GRDC <i>CSP00203</i>	There are opportunities to increase production on deep sands by developing cost effective techniques to diagnose and overcome the primary constraints to poor crop water-use or by reducing the impact of constraints with modified practices. Commonly recognised constraints that limit root growth and water extraction on sands include compaction (high penetration resistance), poor nutrient supply and low levels of biological cycling and poor crop establishment. The project has set up trials at Murlong to investigate both low cost modified agronomy (e.g. use of wetters) and high cost interventions (e.g. spading incorporation of OM). End: June 2021
Extension of knowledge and resources to manage risk and exploit opportunities to improve whole farm profit through successful integration of cropping and livestock enterprises	GRDC/MLA <i>9175516</i>	The aim of this fourth phase is to support farmers and advisors with information, training and tools to tackle the complexity associated with successfully integrating crops and livestock in a farming business. The focus is on understanding the opportunities, synergies and trade-offs in mixed farming, using the knowledge, experience and calculators created in previous phases of the Grain and Graze program. End: June 2020
Swathing for barley grass weed seed collection and applying drone technology	SAGIT <i>S117</i>	Swathing cereal crops with problem weed issues early (between 20 and 40% grain moisture) for grass weed seed capture into windrows, followed by harvest and using a chaff cart for weed seed collection may provide farmers with another tool for integrated weed management. Testing the use of UAV (drone) technology to assess barley grass weed density in crop. End: June 2020
Water Repellency	GRDC <i>DAW00244</i>	The main focus of this project is to explore management techniques that promote water infiltration into non-wetting soils and increase crop production and profitability. A trial has been conducted at Wharminda since 2015 investigating the impact of wetting agents and near-row seeding on crop establishment and performance. End: June 2019
Application of CTF in the low rainfall zone - MAC Research Site	GRDC via ACTFA <i>ACT00004</i>	Adoption of Controlled Traffic Farming (CTF) in the LRZ is very low (eg SA/Vic Mallee, 4%) compared to other zones in the Region (eg Vic HR, 26%). This is believed to reflect scepticism about its benefits in many LRZ environments when weighed up against the cost of adopting the practice. The project will evaluate whether or not this scepticism is justified. End: June 2019
Maintaining profitable farming systems with retained stubble -Component 1 Coordination Support	GRDC <i>DAS00145</i>	Coordination Support provided by Naomi Scholz, SARDI. The role includes organisation of national meetings, facilitate sharing of resources and communication between Component 2 grower groups and Component 1 research, and ensuring guidelines and other project products are accessible to growers across Australia now and in the future. End: December 2018
Identifying the causes of unreliable N fixation by medic based pastures	SAGIT <i>SARDI1515</i>	Assess the impacts of current weed control chemicals, adjuvants and rhizobial inoculants on N fixation by medics under field conditions typical of the upper EP and other low rainfall mallee systems. Also assess the impact of nutrition (esp N and P) on N fixation by medics under field conditions and investigate their effects on tolerance to current weed control chemicals. End: June 2018

Project name	Funder	Summary
National Variety Trials	GRDC	Yield performance of cereal & break crop varieties at various locations across upper EP.
Crop Improvement Trials	Various	Various trials including district variety trials, product trials, species trials.

## MAC staff and roles 2018

Nigel Wilhelm	Science Program Leader Farming Systems
Dot Brace	Senior Administration Officer
Leala Hoffmann	Administration Officer
Naomi Scholz	Project Manager
Jake Hull	Farm Manager
Amanda Cook	Senior Research Officer (Farming Systems)
Fabio Arsego	Senior Research Agronomist (Minnipa/Port Lincoln)
Jessica Crettenden	Research Officer (Livestock)
Fiona Tomney	Research Officer (Pastures)
Brenton Spriggs	Agricultural Officer (NVT, Contract Research)
Ian Richter	Agricultural Officer (Farming Systems)
Wade Shepperd	Agricultural Officer (MAC Farm)
John Kelsh	Agricultural Officer (MAC Farm)
Sue Budarick	Casual Field Assistant
Katrina Brands	Casual Field Assistant
Steve Jeffs	Casual Field Assistant
Ashley White	Casual Field Assistant
Rochelle Wheaton	Casual Field Assistant
Bradley Hutchings	Casual Field Assistant

### DATES TO REMEMBER

**GRDC/EPARF Spray Workshops: 27-28 March 2019**

**EPARF Member Day: mid-year 2019**

**MAC Annual Field day: Thursday 19 September 2019**

*To contact us at the Minnipa Agricultural Centre, please call 8680 6200.*