

# GRDC Foreword

The 2019 Eyre Peninsula (EP) Farming Systems Summary is a highly valuable publication that consolidates information on local research, development and extension (RD&E) activities and provides insights to enhance knowledge and inform on-farm decision making.

This summary highlights the impact and value of collaboration between the Grains Research & Development Corporation (GRDC), the South Australian Research and Development Institute, the University of Adelaide, the South Australian Grain Industry Trust, Commonwealth Scientific and Industrial Research Organisation (CSIRO), EP Agricultural Research Foundation, Lower Eyre Agricultural Development Association, EP Natural Resources Management Board, National Landcare Program and others. Important support and valued input from local advisers and agribusinesses are also acknowledged.

The 2019 season was yet again a highly variable one on the EP. The diverse cropping challenges experienced by the region's grain growers during the year were clearly evident during the GRDC Southern Region Panel's annual spring tour which traversed the peninsula in the second week of September. Panel members, GRDC staff, and representatives from the GRDC Northern and Western Region Panels and the Board, met with growers, researchers, advisers, farming systems groups, agribusiness and other grains industry specialists.

The tour enabled the GRDC to gain a first-hand understanding of the constraints limiting EP growers' ability to optimise farm profit whilst dealing with seasonal and economic risk. Valuable conversations were had regarding current and potential future GRDC investment in locally relevant RD&E and the visits enabled constructive debate regarding important issues, including ongoing challenges in attracting and retaining the people required to deliver local research and development outcomes for growers. To ensure grains RD&E is meaningful and regionally relevant grassroots input and involvement is essential. To that end, I strongly encourage you to play a role in helping to shape the research investment agenda in your region – we are here to listen so please come and speak with a member of GRDC staff, panel or the broader GRDC Grower Network.

Of the issues raised and dissected during the tour, calcareous soils were frequently discussed. Whilst the impact of these soils - in terms of water use efficiency, nutrient availability, root diseases, crop establishment, yield and returns to growers - were largely known, the tour exchanges reinforced the severity of the constraint and helped to inform a new RD&E investment commencing this coming season. A significant four-year investment by the GRDC, in collaboration with partners, this project will improve our understanding of the unique characteristics of these highly calcareous soils and investigate novel management practices that address the constraints identified. Research is proposed into soil amelioration practice, soil/water relations, soil health and nutrient cycling, field validation of soil and crop management, and decision support. We look forward to extending the outcomes from this and other related investments to EP growers and the broader industry in the future.

GRDC is investing in a broad range of issues to support the profitability of grain growers on the EP. One recently initiated GRDC investment will enable the characterisation of 10 soils within the existing soil moisture probe network on the EP to increase sampling accuracy, improve soil test results and advance our understanding of the plant available soil moisture at the sites. This will then provide a more rigorous interpretation of soil moisture data for growers.

We have also recently invested in utilising cutting-edge 'synchrotron' scanning technology (a particle accelerator that acts like a super-powered microscope) at Monash University, to provide further insights into interactions between root and water distribution and nutrient availability in soils (UOQ1910-002RMX, USA1910-001RTX, UOQ1910-003RTX). Only 60 synchrotrons exist in the world, and this technology brings to our grains industry a whole new research dimension with many potential applications.

Other blue-sky investments include several innovative new approaches to fertiliser manufacture. GRDC has partnered with CSIRO, the Australian Renewable Energy Agency (ARENA) and Orica to explore an innovative and potentially transformational hydrogen to ammonia discovery project. In a separate planned investment, GRDC is exploring new nitrogen fertilisers aimed at cost-effectively matching nutrient availability to plant demand through novel formulation technology and the inhibition of nitrogen-loss pathways.

An improved understanding of crop phenology remains a focus for GRDC and significant research is underway to inform our understanding of the phenology drivers of different crops/varieties and related management approaches. This includes an investment in a National Phenology Initiative, led by La Trobe University (ULA00011), as well as a new investment starting this season targeted at matching adapted pulse genotypes to soil and climate to maximise yield and profit with manageable risk (PROC-9176094).

Also of relevance to growers on the EP is the GRDC's intent to collaborate or partner, where appropriate and aligned to strategy, to address broad agricultural industry issues such as climate risk, avoidance of spray drift, virtual fencing technology, sustainability and community trust - all of which were raised during the Southern Region Panel tour of EP. Transformational opportunities around three-dimensional characterisation of soils and radical approaches to amelioration aiming to deliver new understandings and solutions to multiple soil constraints are other examples of new GRDC investments.

This EP Farming Systems Summary presents considerable information generated from trials being undertaken in your region, together with relevant data and knowledge from further afield. Many of these trials results are also catalogued on the GRDC's Online Farm Trials website ([www.farmtrials.com.au](http://www.farmtrials.com.au)) which provides free access to on-farm or field-based cropping research data. I encourage you to visit the site and utilise the available information.

In the meantime, I congratulate all involved in the preparation and production of this summary, especially those who have worked tirelessly to collate the comprehensive content.

On behalf of the GRDC, I also extend best wishes to everyone involved in the formation of Agricultural Innovation and Research EP, signifying a new era of collaborative grower representation on the EP.

May season 2020 be a productive, profitable and safe one for you all.



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