



RESEARCH SUMMARY

AGX319

FAST FACTS

PROBLEM

The grains industry needs a skilled future workforce, but many agriculture students lack practical exposure to broadacre cropping systems and research and advisory career options.

PROJECT

A wheat crop competition immersed students in commercial crop production including agronomic decision-making and calculations of gross margins.

PARTICIPANTS

AgXtra: Richard Porter, David Mates, Edwina Cockburn, Steph Lunn, Kelly Lunn

DATES

Start: 1 March 2019
Finish: 31 March 2022

PROMOTING SECONDARY AND TERTIARY STUDENT ENGAGEMENT IN CROP PRODUCTION

A wheat crop competition provided secondary and tertiary agriculture students with hands-on experience in crop production and agronomy. Over three cropping seasons, students planned, managed and assessed replicated crop trials, supported by agronomists and industry specialists. More than 300 students from eight high schools and Adelaide University participated in the competition. The project strengthened students' understanding of agronomy, research trial work, agronomic decision-making processes and the impact of inputs on profitability. The competition also introduced students to a variety of career pathways in the grains industry.

BACKGROUND

South Australian grain growers rely on skilled agronomists, advisers and researchers to support profitable and sustainable crop production. However, many students studying agriculture have limited opportunity to apply theory in a real cropping environment. This limits their understanding of broadacre cropping systems and interest in careers in the grains industry.

The AgXtra Crop Competition was designed to address this gap by immersing students in a commercially-managed crop production system. The program aligned with school and university curricula and exposed students to agronomy decisions, seasonal variability, trial design and gross margin analysis. Involvement from a range of grains industry professionals ensured that learning was practical and relevant to commercial crop production.

RESEARCH AIMS

The core objectives of the project were to:

- Build awareness of viable career pathways in grain production, research and agronomy
- Improve student understanding of crop management, seasonal variability and agronomic decision-making
- Demonstrate how research trials are designed, assessed, analysed and interpreted
- Link classroom learning with practical, paddock-based experience
- Strengthen connections between students and the grains industry.

IN THE FIELD

In each season, teams of secondary and tertiary students from regional and metro SA prescribed the variety and seasonal management options for their entry in replicated wheat plots at a trial site at Roseworthy managed by AgXtra.

Teams made decisions on fertiliser and crop protection inputs with support from planning sessions and regular updates from AgXtra staff. Crop performance was monitored and quantified using plant counts, growth staging, NDVI, grain yield and quality assessment and gross margin calculation.

Students participated in site visits and field inspections where possible and worked with the information provided to assess crop performance and discuss management decisions. Crops were harvested using a plot harvester and grain quality testing was undertaken to determine grading and price. Gross margins were calculated using current grain prices and input costs, reinforcing the link between agronomic decisions and profitability.

COVID-19 restrictions required flexible delivery, including online updates and smaller site visits, but core field and harvest activities were maintained across all seasons.

RESULTS

More than 300 students participated in the project over the three years. This encompassed primarily Year 11 students from eight schools, including four in metropolitan Adelaide, one on the Yorke Peninsula, two in the Mid North and one in the Murraylands as well as tertiary students from Adelaide University. Feedback indicated that the most valuable components of the project were the hands-on crop management and opportunities to interact with grains industry professionals.

Students developed a clearer understanding of crop establishment, yield drivers, seasonal risk and how agronomic decisions influence profitability. The competition improved awareness of how agronomic research is conducted, including replication, data collection, analysis and interpretation of results.

School engagement depended heavily on teacher involvement and distance from the Roseworthy trial site. This geographic isolation limited participation for some schools at the trial site and learning outcomes were stronger when students were able to regularly visit the site. Clear and regular communication was critical, particularly when activities shifted online.

The project exposed students to careers in grains industry research, agronomy and advisory and helped build interest in these roles that directly support grower decision-making.

VALUE FOR GROWERS

This project delivers long-term value for SA grain growers by strengthening the future grains industry workforce. Growers benefit directly from students entering agronomy, research and advisory roles with a practical understanding of cropping systems, seasonal risk and the impact of agronomic decisions on profitability. By improving early exposure to broadacre crop production, the project helps ensure the future grains industry workforce is better equipped to support profitable and resilient grain production in SA.

MORE INFORMATION:

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L-R AgXtra staff Steph Lunn and Jess Heaslip talk growth staging of wheat with students at the Roseworthy trial site. Jess competed as a secondary and tertiary student in the crop competition and went on to run the project in Adelaide and Wagga Wagga after joining AgXtra.

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