



**AG GROW AGRONOMY
AND RESEARCH**

Research Program

2022

INDEPENDENT AGRONOMY ADVICE + CUTTING EDGE RESEARCH

2022 Research Sites & Projects

2022 TRIAL SITES

GRIFFITH RESEARCH FARM

“Ridge Top”, Beelbangera

Trials include:

- Canola Variety Evaluation Trial (Conv/CL; RR & TT)
- Canola OP seed manipulation trials – Col’s Trials
- Pacific Seeds Hyola®TD Innovation Systems Technology Trial
- Cargill Canola IMI & TRUFLEX Trial
- Syngenta - MIRAVIS Star Efficacy & Competitor comparison pulses
- Pulse Rhizobia – 2019 /2020 Elite Rhizobia Strains (Wheat 2022)
- HBS Dryland Wheat & Barley Variety Trial
- CSIRO Long Coleoptile Wheat Trial
- LongReach Plant Breeders Dryland Wheat Trial
- GRDC Wheat & Barley TOS Trial
- Bayer - Mateno® Complete & Infinity Ultra Trials
- AGT CoAXium Barley Evaluation Trial
- UPL - Uplift Market Support Trial
- GRDC Lime Trial
- LPPB Acid Tolerant Trial

HILLSTON IRRIGATED SITE:

Co-operator - Graeme Horneman “Wilga Glenn”

Trials include:

- HBS Irrigated Wheat & Barley Variety Trial
- LongReach Plant Breeders Irrigated Wheat Trial

BARELLAN SITE:

Co-operator – Jeff Savage “Wanda Downs”

Pulse Agronomy Trials – Pulse Project including:

- Pulse Variety Trials
- Rhizobia Trials
- P Management Trials

2022 TRIALS:

Canola Variety Evaluation Trial

Funded by Ag Grow Agronomy, Nuseed, Pioneer Seeds, Advanta Seeds, BASF and AGT

These trials aim to compare the performance of potential canola varieties with existing canola varieties commonly grown on dryland in Southern NSW. The trials consist of a Clearfield/Conventional trial, a Glyphosate trial and a Triazine Tolerant (TT) trial. It is a collaboration with seed companies Nuseed, Pioneer Seeds, Advanta Seeds, BASF and AGT.

Canola OP seed manipulation trials: Improving production of grower retained open pollinated canola seed using agronomic management to increase establishment in MRZ and LRZ of the GRDC Northern Region

Collaborating with NSW DPI and Grains Orana Alliance, funded by NSW DPI and GRDC.

In its third year, these trials aim to determine the treatment effect on seed size, consistency of seed size and chemical composition. Field trials are being conducted at four locations (Tottenham, Canowindra, Wagga and Griffith) as part of the first module of this project. Our site hosts 5 trials including a Main Experiment, Maternal x sowing depth, Seed size x sowing depth, MAP toxicity and a Seed leakiness trial.

Pacific Seeds Hyola® TD Innovation Systems Technology Trial

Collaborating with Pacific Seeds, funded by Pacific Seeds

These trials are set up to evaluate across herbicide technology yield comparisons as well as agronomic and performance assessments of current grown varieties vs new germplasm prior to commercial release. The trial is conducted using specific herbicide spray protocols to meet normal industry practice requirements so that each of the technologies can be compared fairly and reasonably.



Cargill Canola IMI & TRUFLEX Canola Trial

Collaborating with Cargill, funded by Cargill

These trials are designed to compare the performance, in terms of grain yield and quality, of IMI and Truflex canola lines.

Increasing the effectiveness of nitrogen fixation in pulses through improved rhizobial strains in the GRDC Northern region

Collaborating with NSW DPI, funded by NSW DPI, Ag Grow Agronomy and GRDC

This project aims to evaluate the effectiveness of nitrogen fixation in pulses through improved rhizobial strains in the GRDC Northern region. Field trials are being conducted as part of this project looking at species of rhizobium on multiple crop types, impact of herbicides, and carryover trials. 2022 is the final year for this project.

In 2022 we will have an Elite strain field site. Four elite advanced rhizobia strains, two from SARDI (SRDI969, SRDI970) and two from Murdoch University (WSM1483 and WSM4643) were compared to the current Group E (SU303) and Group F (WSM1455) commercial strains with a nil treatment included as a control at Griffith, Condobolin and Cowra in 2019 on lentils, field peas and vetch.

In 2020 the site was over-sown with wheat to test the saprophytic competence of strains going forward. In 2021 the site was resown with the legume host, plus and minus the original elite rhizobia strain to determine survival, colonisation and response to secondary inoculation. In 2022 the site will be again over-sown with wheat to further test the strains going forward. This is the final year of the project. In addition, this season growers are also trialling commercial experimental acid tolerant peat in lentils, field peas and faba beans.





Hart Bros Seeds Variety Dryland & Irrigated Trials

Collaborating with Hart Bros Seeds, funded by Ag Grow and HBS

Two sites (dryland and irrigation) comparing the performance of potential wheat and barley varieties with existing varieties commonly grown in SNSW under local irrigated and dryland conditions. The trials are focussing on varietal suitability in terms of yield, grain quality, plant height, lodging, structure and acid soil tolerance. These trials complement existing NVT trials.

CSIRO Long Coleoptile Wheat Trial

Collaborating with CSIRO, funded by Ag Grow and CSIRO

This trial is comparing the performance of long coleoptile wheat lines with short coleoptile wheat lines at two sowing depths, shallow (4cm) and deep (12cm). Growing wheats with a longer coleoptile allow you to plant wheat deeper in the soil into moisture from summer rain, allowing early sown crops to get up and out of the ground.

LongReach Plant Breeders Dryland & Irrigated Wheat Trials

Collaborating with LongReach Plant Breeders, funded by LongReach

These trials compare the performance of wheat lines for yield, grain quality, agronomic attributes and disease reaction for all major production environments in Australia. This information will be used to make selection decisions for progression through the breeding program and commercial release.

In addition, this season we are also hosting a trial focussing on acid tolerant wheat varieties on an acid site at Beelbanger.





Syngenta - MIRAVis Star Efficacy & Competitor comparison pulses

Collaborating with Syngenta, funded by Syngenta

The objective of this trial is to assess the efficacy of MIRAVis STAR & AMISTAR Xtra compared to other commercial fungicides in pulses in low to medium rainfall environments.

Bayer - Mateno[®] Complete Trials

Collaborating Bayer, funded by Bayer

The purpose of these trials is to demonstrate the effectiveness and safety of Mateno[®] Complete in wheat and barley.

AGT CoAXium Barley Evaluation Trial

Collaborating with AGT, funded by Ag Grow and AGT

The purpose of this trial is to demonstrate the effectiveness and safety of Aggressor Herbicide in CoAXium barley.

UPL - Uplift Market Support Trial

Collaborating with UPL, funded by Ag Grow and UPL

The purpose of this trial is to compare the performance of the foliar fungicide Uplift in wheat at various rates and time.





Maximising the benefit of early sowing barley and wheat cultivars in low rainfall & high temperature environments

Collaborating with FAR Australia, with funding from FAR Australia, Ag Grow Agronomy and GRDC.

Earlier sowing of cereal crops in drier regions has increased over the last 10-15 years. Farms have increased in size and growers have gained confidence with dry seeding techniques, and as such have seen the evidence of higher productivity. However, sowing in April has raised a number of questions over the germplasm that should be used and its associated management.

The project aims to test the performance of longer season wheat and barley types in cropping regions subject to lower rainfall and higher temperatures. It also aims to establish how newer germplasm and management techniques associated with earlier sowing can be used to improve productivity in these more hostile environments.

Lime response on acid, low rainfall, sandy soils of southwestern NSW

Collaborating with Jason Condon (CSU), funded by CSUI, Ag Grow Agronomy and GRDC

Discussions in Grower Network forums in the GRDC sub-region of Southwest NSW and particularly in the Griffith, Hillston and Lake Cargelligo regions have highlighted the need to understand reports of poor lime responses on acid sandy soils that typically have low organic matter. There is a need to validate the issue of acid soils that are anecdotally unresponsive to lime in western NSW so that crop yield gaps can be reduced. This project aims to:

- measure the efficacy of applied lime on grain yield and profitability
- measure any differences between incorporation methods
- measure any differences between incorporation depths
- measure any impact on phosphorous uptake efficiency



Pulse Agronomy Trials - Development and extension to close the economic yield gap and maximise farming systems benefits from grain legume production in New South Wales

Collaborating with Brill Ag, Grain Orana Alliance and Frontier Farming systems, with funding from GRDC.

This is the second year of a 4-year project. The project aims to get a better understanding of the adaptability of pulse species to the local environments and how to improve production and close the yield gap of the best adapted pulses. The project includes 2 major validation (hub) sites at Ganmain and Parkes, delivering a series of fully replicated trial designs to measure the yield gap, and 5 on farm demonstration (spoke) trial sites. Our site at Barellan is one of the 5 spoke sites for the project, along with sites at Gol Gol, Canowindra, Caragabal and Buraja focussing on on-farm paddock scale strip trials, and/or small demonstration plot trials driven by local grower D&E priorities.

The focus of the Barellan site is to:

1. Evaluate the relative performance of major pulse crops (chickpeas, faba beans, field peas, lentils, lupins, vetch) in a variable rainfall environment.
2. Compare the effectiveness of nitrogen fixation using existing commercial rhizobia strains and a new acid tolerant strain as well as the effect of nitrogen on nodulation in lentils and peas grown on acid soils in a variable rainfall environment.
3. Determine best management practice for phosphorus (rate and placement) for lentils and lupins in a variable rainfall environment.



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