AgGrow
AGRONOMY + RESEARCH

AG GROW AGRONOMY AND RESEARCH RESEARCH PROGRAM 2020

INDEPENDENT AGRONOMY ADVICE + CUTTING EDGE RESEARCH

BEELBANGERA SITE:

Ag Grow Research Farm: Barry Haskins “Ridge Top”

Trials include:

- Canola Variety Evaluation Trial (Conv/CL; RR & TT)
- Advanta Canola Breeders
- Canola OP Seed Manipulation Trials
- Elite Rhizobia Strain Trials
- Ag Grow Deep P
- Practices which promote successful early sowing opportunities in south western NSW
- HBS Dryland Wheat & Barley Variety Trial
- NSW DPI Durum Variety Trials
- LongReach Plant Breeders Dryland Wheat Trial
- UPL Devrinol Herbicide Trial
- Syngenta Crown Rot Trial
- Ag Grow Pre-em Herbicide Matrix Trial

Canola Variety Evaluation Trial

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

This trial aims 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 Roundup Ready (RR) trial and a Triazine Tolerant (TT) trial. It is a collaboration with seed companies Nuseed, Pioneer Seeds, Advanta Seeds and BASF in 2020.

Advanta Canola Breeders Trial

Collaborating with Advanta Seeds, funded by Advanta Seeds.

These trials compare the performance of canola varieties, being developed for the agronomic traits of yield, oil and blackleg resistance. This information will be used to make selection decisions on varieties that offer growers advantages over currently grown varieties and variety progression through the breeding program and commercial release.

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.

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 will host 5 trials including a macro-nutrient trial, foliar trial, density x spatial arrangement trial, crop thinning trial and a harvest management trial.

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. Various field trials are being conducted at four locations (Condobolin, Griffith, Canowindra & Tamworth) as part of this project. Our site will host 4 trials in 2020.

1. Elite strain: sown in 2019 to four advanced rhizobia strains and 3 pulse types, site will be over-sown with wheat in 2020 to test the saprophytic competence of the strains.
2. Herbicide screen 2019/2020: The aim of this trial is to assess the impact of 10 herbicides commonly used in the growing season or for summer weed control on pulse nodulation. The herbicides were applied in the fallow of 2019 and sown to vetch, field peas and lentils in 2020.
3. Herbicide screen 2020/2021: The above herbicide trial will be repeated over 2020/2021, a fresh site will be set up in 2020 in wheat.
4. Nitrogen transformation: Trial aims to measure the nitrogen benefit of pulses. 4 treatments (nil, WSM1455, WSM4643, SRDI969) by 3 pulse types (field peas, vetch and lentils) and canola sown in 2020, and oversown to wheat in 2021.

Practices which promote successful early sowing opportunities in south western NSW

This project is supported by the Department of Agriculture, Water and the Environment, through funding from Australian Government's National Landcare Program.

Conducted at 2 sites (Beelbangera and Hillston), these trials are looking at innovative ways of getting early sown crops up and out of the ground using polymers that attract moisture to the seed.

Treatments include depth of sowing, gypsum as granules next to the seed, various seed and liquid inject treatments looking at attracting moisture to seed, and a humectant and wetter crystal. It also uses 2 different varieties.

Ag Grow Agronomy Deep P Trials

Two deep phosphorous trials, one at Beelbangera and one at Hillston, were established by Ag Grow Agronomy and Research in 2020. These trials are aimed at validating existing phosphorous recommendations in terms of rate and placement.

Hart Bros Seeds Variety 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 trial is specifically measuring varietal suitability due to yield, grain quality, plant height, lodging, structure and acid soil tolerance.

LongReach Plant Breeders 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.

Durum Breeding Variety Trials

Collaborating with Northern durum program, funded by NSW DPI and GRDC.

Two sites (dryland and irrigation). These trials aim to evaluate durum varieties bred specifically for very high (8-10t/ha) yielding irrigation targets for SNSW, and varieties bred with acid soil tolerance in a rain fed environment - both of which meet market quality specifications and achieve ideal plant structures in their environments.

UPL Devrinol Herbicide Trial

Collaborating with UPL, funded by Ag Grow Agronomy and UPL.

This trial aims to compare the herbicide Devrinol-C to industry standards for the pre-emergent control of Annual ryegrass.

Syngenta Crown Rot Trial

Collaborating with Syngenta, funded by Ag Grow Agronomy and Syngenta.

This trial aims to test the efficacy and safety of seed applied treatments for the control of crown rot in wheat.

Ag Grow Pre-emergent Herbicide Matrix Trial

This demonstration trial evaluates the efficacy of various pre-emergent herbicide products for weed control and crop safety across a range of commonly grown crop types in our area.

HILLSTON SITE:

Co-operator - Graeme Horneman “Wilga Glenn”

Trials include:

- HBS Irrigated Wheat & Barley Variety Trial
- NSW DPI Irrigated Durum Variety Trial
- LongReach Plant Breeders Irrigated Wheat Trial
- Ag Grow Deep P
- Practices which promote successful early sowing opportunities in south western NSW

Hart Bros Seeds Variety 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 trial is specifically measuring varietal suitability due to yield, grain quality, plant height, lodging, structure and acid soil tolerance.

Durum Breeding Variety Trials

Collaborating with Northern durum program, funded by NSW DPI and GRDC.

This is an irrigation trial evaluating durum varieties bred specifically for very high (8-10t/ha) yielding irrigation targets for SNSW, which also meet market quality specifications and achieve ideal plant structures under high yielding canopies.

LongReach Plant Breeders 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.

Ag Grow Agronomy Deep P Trials

Two deep phosphorous trials, one at Beelbangera and one at Hillston, were established by Ag Grow Agronomy and Research in 2020. These trials are aimed at validating existing phosphorous recommendations in terms of rate and placement.

Practices which promote successful early sowing opportunities in SW NSW

This project is supported by the Department of Agriculture, Water and the Environment, through funding from Australian Government's National Landcare Program.

Conducted at 2 sites (Beelbangera and Hillston), these trials are looking at innovative ways of getting early sown crops up and out of the ground using polymers that attract moisture to the seed.

Treatments include depth of sowing, gypsum as granules next to the seed, various seed and liquid inject treatments looking at attracting moisture to seed, and a humectant and wetter crystal. It also uses 2 different varieties.

YENDA SITE:

Co-operator - David Heath “Acres”

SANDY SOIL PROJECT (4th Year) - *Increasing production on sandy soils: overcoming constraints to poor water use (CSP00203: 2016-2021)*

Collaborating with University of South Australia, Mallee Sustainable Farming, PIRSA and CSIRO, funded by Ag Grow Agronomy, CSIRO and GRDC.

There is a large yield gap on sandy soils in the low rainfall cropping zone of south-eastern Australia. There are opportunities for the management of primary constraints to crop water use through the use of mitigation practices such as seeding strategies, nutrient placement and crop choice; and the use of amelioration approaches such as deep placement of amendments, claying practices, spading and inversion.

The Sandy Soil Project trials that will be monitored in 2020 include:

1. Cultivation/Chicken Litter Trial:

Adoption of zero or no till systems has been rapid on sands in order to reduce erosion. There has been interest in careful cultivation and amelioration, with disturbing the silty sub layer at 12-15cm by ripping and cultivation resulting in an increase in crop performance. Previous trials have shown the value of cultivation, especially when it was coupled with manure or to a lesser extent lime.

The aim of this trial is to optimise the use of deep cultivation approaches in combination with chicken litter and lime to enhance crop performance on sandy soils in SNSW. In 2020 the trial is sown to wheat.

2. Herbicide Trial:

Multiple applications of herbicides are common over the summer months to manage weeds . Herbicide residues have been measured to be 5 x higher in sand areas compared to better performing areas, with the main herbicides hanging around being glyphosate, AMPA residue , 24-D and Trifluralin.

The aim of this trial is to evaluate the size of impact of 3 herbicides (Glyphosate, Amine and Treflan) relative to best practice, and assess the mitigation potential of manure application on sands in SNSW. In 2020 the trial is sown to wheat.

MONIA GAP – JOSH JAGER'S

Collaborating with University of South Australia, Mallee Sustainable Farming, PIRSA and CSIRO, funded by Ag Grow Agronomy, CSIRO and GRDC.

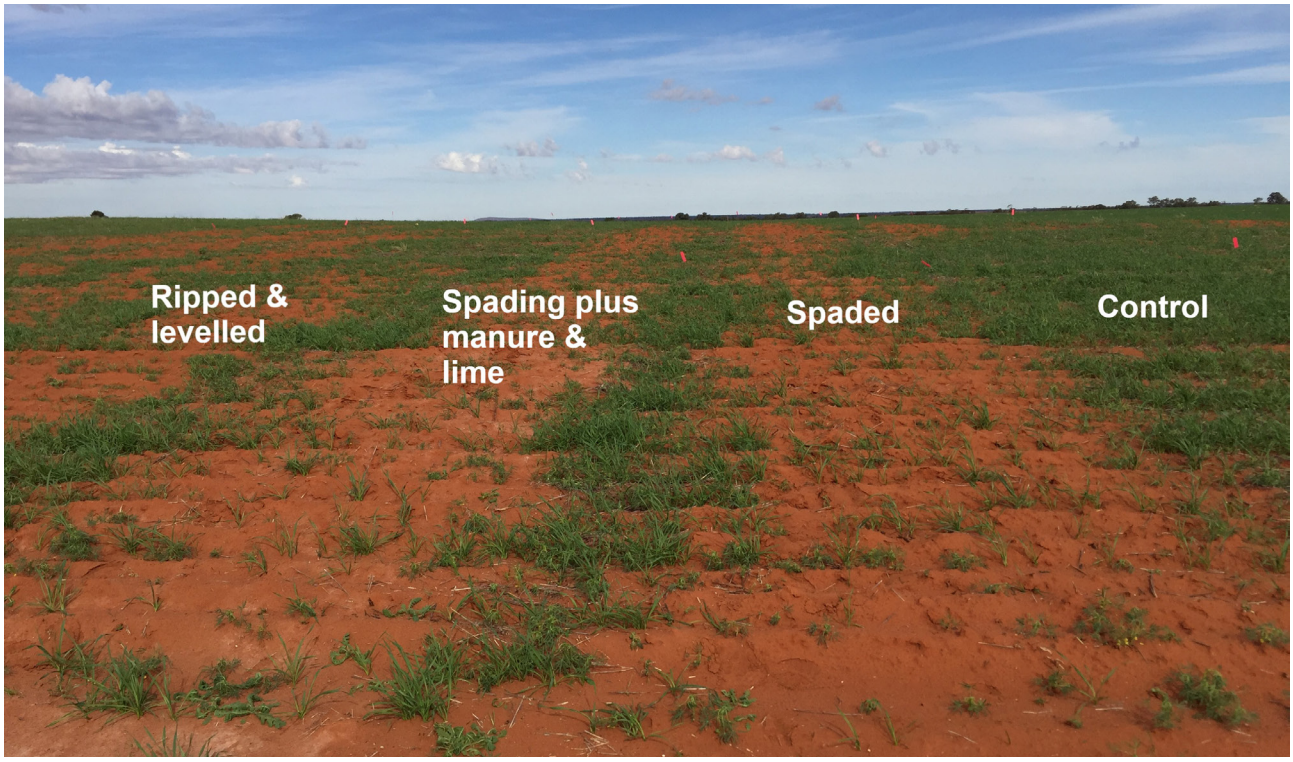
Sandy Soil Validation Trial: Sandy Soil Project CSP00203

Sandy Soil Amelioration & Mitigation Practices - year 2

The validation trials are part of the sandy soil project and they aim to validate the outcomes of the Sandy Soils Research Program across the south-eastern region, enabling targeted mitigation/amelioration techniques to be tested or demonstrated to overcome diagnosed primary/secondary constraints on sandy soils. In 2020 the 2019 trial will be further monitored.

The trial at Monia Gap is looking at the use of deep cultivation approaches, including the use of a spader, on sand hills to provide better crop uniformity and performance as well as the impact of gypsum and manure on crop performance, in addition to cultivation alone. In 2020 it is sown to canola. The 6 treatments include:

1. Control (district practice)
2. Ripped (60-70cm) and spaded
3. Spaded
4. Spading plus 1.5 t/ha Gypsum
5. Spading plus 2.5 t/ha Manure
6. Spading plus 2.5 t/ha Manure & 1.5 t/ha Gypsum



CORTEVA REXADE TRIALS

Collaborating with Corteva, funded by Ag Grow Agronomy and Corteva.

These trials aim to better understand the crop damage occurring from using Rexade and ways to manage it, particularly on acid soils, and more specifically where there are higher manganese levels. Two trial sites established in 2020 looking at a combination of herbicide and foliar fertiliser treatments. Sites are at:

1. Griffith - Michael Pfitzner's
2. Barellan - Jeff Savage's

Further contacts:

Barry Haskins	Ag Grow Agronomist	barry@aggrowagronomy.com.au
Rachael Whitworth	Ag Grow Research Manager	rachael@aggrowagronomy.com.au