BEELBANGERERA SITE (Dryland)

Co-operator - Barry Haskins “Ridge Top”

Trials include

- Canola Variety Evaluation Trial
- CWFS Long Season Wheat TOS Trial
- GRDC Lentil Nodulation Trial (2nd year)
- GRDC Ryegrass x N Placement Trial (2nd year)
- Arysta ARY452 EPE TT Canola Trial
- HBS Dryland Wheat & Barley Trial
- NSW DPI Durum Variety Trial
- LongReach Plant Breeders Dryland Wheat Trial
- Russian Wheat Aphid (RWA) Trial
- Syngenta Talinor Plantback Trial

Canola Variety Evaluation Trial

Funded by Ag Grow Agronomy, Nuseed, Pioneer Seeds and BayerCrop Science

This trial aims to compare the performance of potential canola varieties with existing canola varieties commonly grown on dryland in Southern NSW. It is a collaboration with seed companies Nuseed, Pioneer Seeds, Bayer CropScience, AWB Seeds and Advanta Seeds.

Improving Grower Profits through Longer Season Wheat Crops

Collaborating with CWFS, funded by GRDC.

Growers in central and southern NSW are interested in sowing wheat earlier than the traditional May sowing window. There are a number of drivers for this change including:

1. Advances in summer fallow management, which have led to improved soil water storage and sowing opportunities
2. Declining frequency and magnitude of traditional autumn breaks and winter rainfall but some increase in summer rain
3. Improvements in no-till seeding technology, with greater moisture seeking abilities and more accurate seed placement
4. An increase in farm size and sowing programs which have lengthened the sowing program for many growers
5. Improved understanding of pre-emergent herbicide use in early sowing

The project aims to increase farmer and advisor confidence to further develop profitable and sustainable farming enterprises based on maximising varietal choice and early sowing window options.
• GRDC Southern NSW Trials - Improving N Fixation in Lentils (2nd year)

Funded by Ag Grow Agronomy and GRDC.

This trial aims to investigate new and commonly used inoculants and rates and management techniques that improve nitrogen fixation through enhanced nodulation in lentils. This is the second season this trial will be run. As an extension in 2018 Ag Grow Agronomy has this trial at 2 sites - Beelbangera and Junee.

We also have sown wheat over the lentil trial in 2017 to see if there are any treatment effects. Lentils have also been sown on the wheat/lentil trial, where wheat was sown in 2017 with various treatments to see if we could enhance nodulation of lentils sown in 2018.

• GRDC Southern NSW Trials - Impact of N Placement and Timing on Crop Yield and Ryegrass Population (2nd Year)

Funded by Ag Grow Agronomy and GRDC.

This trial aims to get a better understanding of the benefits, in terms of increased yield, increased crop competition and reduced ryegrass seed set when using Nitrogen application under the seed row versus top dressing or spreading then Incorporating by Sowing (IBS).

2018 will be the second year of the trials, allowing a better understanding of the effect of N placement on weed numbers, over multiple growing seasons. This will allow us to fine tune best management practices that not only lead to higher N utilisation and crop yield, but also lower weed seed set following harvest.
• Arysta ARY452 EPE TT Canola Trial

Collaborating with Arysta LifeScience, funded by Ag Grow and Arysta LifeScience.

This trial aims to determine the efficacy and crop safety of ARY452 applied alone and with mixing partners applied early post emergent for weed control in triazine tolerant canola.

• 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 Ag Grow, 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.

• LongReach Plant Breeders Dryland 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.

• SARDI Russian Wheat Aphid Trial

Collaborating with SARDI, funded by GRDC

This trial is part of a GRDC funded project which aims to develop economic thresholds for Russian wheat aphid across rainfall zones of the Australian grain industry. Ag Grow Agronomy has two sites in 2018, a dryland and an irrigated site.

• Syngenta Talinor Herbicide Plantback Evaluation Trial

Collaborating with Syngenta, funded by Ag Grow Agronomy and Syngenta

This trial looks at the crop safety of various pulse crops, following the use of various herbicides applied to a wheat crop in 2017.
YENDA SITE (Dryland) - SANDY SOIL PROJECT (2\textsuperscript{nd} Year)

Co-operator - David Heath “Acres”

Increasing production on sandy soils: overcoming constraints to poor water use (CSP00203: 2016-2021)

Sandy Soil Project, trials include:
- Cultivation/Chicken Litter Trial
- Variety Trial
- Nutrition Trial
- Herbicide Trial

Increasing production on sandy soils: overcoming constraints to poor water use

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.

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 2018 the trial is sown to lupins.
2. Variety and Seeding Rate Trial:
There is a major difference between varietal/crop type performance on sands. This is partly but not solely due to acid soil tolerance. Higher seeding rates have also proven to be effective, with many using VRT (seed, fertilisers) to increase inputs on sandy areas.

The aim of this trial is to evaluate which acid tolerant varieties perform the most effectively in sandy soils across a number of seasons; the trial will also evaluate the impact of seeding rate on Beckom wheat in sandy soils in SNSW.

3. Nutrition Trial:
It has become common practice to use high fertiliser rates on sand rises. Past trials have shown no benefit of using either S, K, Mo or Zn, but have highlighted the value of nitrogen and phosphorous in conjunction with each other. Manure has been a standout treatment, which would offer several years of increased yields.

The aim of this trial is to evaluate the impact of different fertiliser form and quantity on plant performance in the under-performing sandy soils in SNSW.

4. 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 2018 the trial is sown to lupins.
**HILLSTON SITE (Irrigated)**

Co-operator - Graeme Horneman “Wilga Glenn”

Trials include

- NSW DPI Durum varietal evaluation
- HBS wheat and barley variety trial
- LongReach Plant Breeders Irrigated Wheat Trials
- Russian Wheat Aphid (RWA) Trial

- Durum Breeding Variety Trials

Collaborating with Northern durum program, funded by Ag Grow, 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 meet also market quality specifications and achieve ideal plant structures under high yielding canopies.

- Hart Bros 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 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.

- SARDI Russian Wheat Aphid Trial

Collaborating with SARDI, funded by GRDC

This trial is part of a GRDC funded project which aims to develop economic thresholds for Russian wheat aphid across rainfall zones of the Australian grain industry. Ag Grow Agronomy has two sites in 2018, a dryland and an irrigated site.
TEMORA SITE: TAIC (Temora Agricultural Innovation Centre)

- Acid Tolerant Rhizobium Trial

Collaborating with FarmLink, Eva Moffitt Senior Research Officer

Trials include
  - Inoculant Trial
  - P-Pickle T Trial
  - Lime Trial

These trials aim to investigate new and commonly used inoculants and rates and management techniques to improve nitrogen fixation through enhanced nodulation in lentils, field peas and vetch on acid soil. These trials will compliment the lentil trials we have at Beelbangera and Junee.

JUNEE SITE

Co-operator - Rob Hart, Hart Bros Seeds Coffin Rock Lane, Temora Road, via Junee

- GRDC Southern NSW Trials - Improving N Fixation in Lentils

Funded by Ag Grow Agronomy and GRDC.

This trial is similar to the trial being conducted at Beelbangera. The trial at Beelbangera generated a lot of interest further east in 2017 and as such an additional site in the Junee area in 2018 is engaging growers from that area, helping to further evaluate the technology. The second site will also add value to the project as it would allow us to evaluate the inoculants on a different soil type as well as minimise the risk of trial failure due to seasonal impacts.

Like Beelbangera the trial aims to investigate new and commonly used inoculants and rates and management techniques that improve nitrogen fixation through enhanced nodulation in lentils.

Further contacts

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