

NGA Activity Update, November 2009

General

The main purpose of these update newsletters is to provide a brief snapshot of NGA activity, suitable for distribution to a wider grower audience. More detailed project results are available in GRDC style 'update papers' or Validator style publications.

Winter trial harvest is well underway with ~15 trials already stripped by November 2 with only trials in later maturing areas still remaining. We should have yield results of nearly all projects compiled before our next round of LCC meetings.

Validator(s)

Two volumes have recently been prepared from project activity during 2007 and 2008. Volume 1 focussed on cereal disease: crown rot tolerance work, stripe rust and net blotch management. Volume 2 is currently being printed and will detail many of the herbicide related projects, aphid management and sorghum spray-out findings. All trial co-operators and local consultative committee members should have already received a copy of Volume 1 with extra copies available at our next LCC meetings for distribution to growers and other advisers.

Next LCC meetings

The chairs of each local committee are currently organising the next round of meetings. At this stage it is expected that all meetings will be in either the last full week of November or the first week of December.

At these meetings we will present results from the key winter projects – including aphid management benefits, stripe rust at planting v foliar options, crown rot tolerance and nematodes, residual herbicides as well as others.

Also we hope to have copies of both Validator volumes available for the majority of meetings.

Surveys

Thanks again to all who responded to our last survey on crown rot and aphid management - in all we had over 65% of surveys completed. These surveys are an important method of measuring whether NGA project activity has been beneficial to the uptake and adoption of new practices but is also generating sound 'industry level' information to assist in prioritisation of new R&D. The intention is to only run 1 (or a maximum of 2) of these surveys each year and keep them short and focussed.

Your feedback in these surveys is certainly proving even more valuable than originally envisaged.

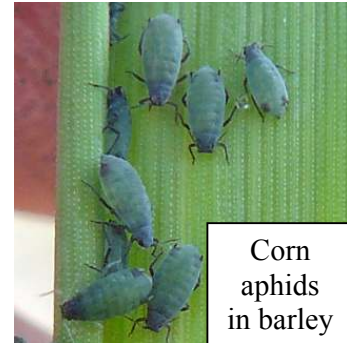
Snapshot of key recent project results

1. Aphid management in barley

Aim: 1. To evaluate the length of protection and the economic benefits of a broad range of aphid management approaches.

What was done?: Two intensive small plot trials evaluating a range of strategies on both Grout and Fitzroy. Investigated efficacy and economics of seed treatments and various foliar insecticide timings.

Key findings: 2009 was a much lower aphid pressure season with high levels of beneficial activity. Multiple aphid species were detected at both sites, as in 2008. Grain quality still to be analysed but significant yield and economic benefits (~\$10-40/ha) were achieved at both sites from the seed treatments.



1b. Aphid management in cereals

Aims: 1. To compare the impact of aphids on different winter cereals. 2. To continue to evaluate the regional importance and economic benefits of aphid management.

What was done?: Eight small plot trials comparing 5 treatments each on Fitzroy, Livingston and Bellaroi. Lower intensity trials in collaboration with NSW I&I district agronomists and QPI&F.

Key findings: Although a lower pressure year, aphid numbers exceeded the current suggested threshold at 50% of sites. Corn aphid clearly preferred barley over bread wheat and durum but little difference in numbers of oat and rose grain aphid between crops in nearly all trials. Majority of sites harvested but data not yet analysed.

2a. Crown rot and nematode tolerance

Aims: 1. Provide additional data on crown rot tolerance of a range of winter cereals. 2. Assess relationship between *Pratylenchus thornei* rating and actual yield under nematode pressure 3. Examine relationship between crown rot and nematodes in varietal yield loss.



LHS Jandaroi +CR, RHS Jandaroi no added CR

What was done?: 4 trials were conducted with 6 bread wheats, 2 barleys and 2 durums with 3 sites having moderate to high nematode counts.

Key findings: Crown rot impact on yield was less than expected in Sep/Oct but still averaged >20% yield loss across two durum varieties across all trials. Strzelecki yielded 20-30% LESS than Sunco across all sites where *P thornei* was detected.

2b. Crown rot and foliar fungicides

Aims: 1. To determine any impact of foliar fungicides on crown rot infection levels and severity. 2. To assess whether foliar fungicides provide any economic benefit.

What was done?: 2 trials were conducted on EGA Gregory to investigate impact of foliar fungicides at different growth stages.

Key findings: Pathology data will be critical but yield impacts have been interesting and suggest further work is warranted. Both sites were suitable for crown rot expression with yield losses of 25% due to added CR at Bullarah and 13% at Cryon.

Associated work: NSW DPI evaluation in tandem as well as similar trial being conducted by Grains Orana Alliance in central NSW.

3. Stripe rust management with in-furrow fertilizer treatments

Aims: 1. Measure the length of disease protection provided by in-furrow treatments. 2. Validate and compare the efficacy and economics of 'at planting' and 'in crop' management strategies.

What was done?: Three trials comparing the suite of key management options on EGA Wylie.

Key findings: Very early disease onset but with 'epidemic' greatly slowed by adverse conditions in late Aug/ Sept. Excellent disease suppression from a very early spray for ~4-5 weeks but 'overrun' by late disease at two of the sites. Fertiliser fungicide treatments provided longer disease suppression than Jockey at 300 mL but also struggled with late disease pressure. Yield benefits in first 2 trials were much lower than in 2008 and ranged from ~1-8%.

4. Salvage options for herbicide resistant wild oats

Aim: 1. Compare efficacy of salvage herbicide options (with and without Dithane Rainshield or Bravo) in chickpeas following a Group A herbicide failure.

What was done?: Two trials in chickpea crops where poor 2009 Group A field performance strongly indicated herbicide resistance.

Key findings: One site had survived commercial Verdict and was well controlled by high label rates of Status (Verdict resistance 'confirmed'). The second site has survived a lower rate dim application and proved to be Verdict susceptible. Fungicide antagonism on weed control clearest from Bravo mixtures at Verdict resistance site.

5. Residual herbicides – in winter FALLOW and in CROP

Aims: 1. To compare weed spectrum and length of residual control across a range of environments. 2. Monitor for plantback issues in subsequent winter crop (2010).

What was done?: Five fallow and two in crop trials comparing a wide range of residual herbicide treatments for fleabane management.

Key findings: Best fleabane residual control during spring assessments has been from Nutrazine, Tordon 75D, Balance and higher rates of Diuron. Glean has been variable and has not given >85 % control in any situation.

8. Tactical Nitrogen management in wheat

Aim: To further investigate tactical N management under northern conditions.

Key details: Results from the work in 2008 finally showed a situation where significant yield INCREASES resulted from tactical N use on an early sowing of long season variety. In previous work, tactical N application has MAINTAINED yield potential but there was no additional yield benefit compared to seedbed N. The trial in 2009 has shown similar responses to delayed N in terms of crop dry matter and development but the site is yet to be harvested. 2009 trials have also included Bellaroi to assess N management in durum.

Trial location: Small plot site near Spring Ridge. Intention was to have a similar site near North Star but unable to find a suitable site with N level low enough to generate any likely N response.

9. N volatilisation (lab and field)

Aims: 1. Identify the impact of soil temperature on N volatilisation losses.
2. Initiate field activity to quantify levels of field N volatilisation losses.

Key details: NSW DPI lab (chamber) based study in late 2008 clearly showed the impact of soil CaCO₃ level on driving volatilisation losses in a closed system. It also showed clear differences between N sources. Impact of soil temperature has been delayed but pilot field study looking at N losses with topdressing in winter crop conducted.

11. Efficiency of P sources at planting

Aims: 1. Compare efficiency of granular vs liquid MAP application approaches.
2. Evaluate P response with varying row spacing.

Key details: 3 small plot trials comparing crop responses to granular P at 6 rates (0, 5, 10, 15, 20, 30 kg P/ha) and 3 row spacings (200, 300 and 400 mm) in wheat. Liquid and granular comparison at the 300 mm row spacing at the same 6 P rates. At all three sites there was a significant dry matter response to applied P at all row spacings. All sites have been harvested.

Trial locations: Yallaroi, Spring Ridge and Gilgandra.

12. Plant growth regulators (PGRs) in winter cereals

Aims: 1. To investigate crop responses to timing and rate of PGR.

Key details: Small plot replicated trials sown with plot seeder and established in growers paddocks. Trials have investigated responses to rate and timing of PGR application.

Trial location: Spring Ridge

Key summer projects 2009/10

Important sites we will be looking for are highlighted in yellow.

1. Residual herbicides – in summer FALLOW

Aims: 1. To compare weed spectrum and length of residual control across a range of environments. 2. Monitor for plantback issues in subsequent winter crop (2010).

Key details: Four small plot trials comparing 13 residual herbicide treatments for both general grass and broadleaf management.

Trial locations: All sites sprayed.

2. Fleabane management

Aims: 1. Evaluation of differences in efficacy between 2,4D formulations and salts
2. Investigate impact of high rates of oil or surfactants in glyphosate + 2,4D mixtures.

Key details: Trial is designed to evaluate a range of current commercial 'favourites' to help determine more robust fleabane mixtures.

Trial locations: Goondiwindi, Moree/Narrabri (2 sites already located, 1 already sprayed)

Final site still being sought. Any assistance would be appreciated.

3a. Hard to kill grasses – product comparison

Aim: 1. Identify most robust options for control of large perennial grasses in cropping situations

Key details: 3 trials planned on Feather Top Rhodes and Windmill grasses

Trial locations: Moree, Bellata, GRAS/Coonamble

One windmill grass site still being sought. Any assistance would be appreciated.

3b. Hard to kill grasses – application timing

Aim: 1. Identify impacts of growing conditions and regrowth extent on herbicide efficacy

Key details: 2 trials planned on Feather Top Rhodes and Windmill grasses

Trial locations: Moree, Bellata

4. *Fusarium stalk rot in sorghum*

Aims: To measure impacts on yield and lodging of stalk rots in sorghum. 2. To evaluate interactions between stalk rots and glyphosate spray-out.

Key details: Inoculating plots with sorghum active *Fusarium* strains in a method similar to what we have used in crown rot studies. We know these stubble borne rots cause lodging but are they directly impacting on yield?

Trial locations: Bellata and Mullaley (Both sown)

5a. *Glyphosate antagonism*

Aims: 1. To quantify the impact on control of sowthistle from various tankmix partners with glyphosate. 2. To investigate intervals between application of glyphosate and 2,4-D to reduce/avoid antagonism.

Key details: 4 trials planned.

Trial locations: We will be looking for sites infested with sowthistle in the New Year

5b. *Glyphosate salts comparison*

Aims: 1. To compare efficacy of glyphosate salt combinations. 2. Quantify the effects of hard water on the formulations. 3. To determine the circumstances under which ammonium sulphate will enhance efficacy.

Key details: 2 trials comparing the performance of the isopropylamine salt (eg CT) with the Potassium salt (PowerMax) and a combination of Mono-ammonium plus Potassium salts (Roundup DST).

Trial locations: Planned for Liverpool Plains and Goondiwindi. We are looking for sorghum paddocks infested with barnyard grass

6. *Weedseeker mixtures*

Aim: 1. To identify effective mixtures against large grass weeds, fleabane and sowthistle.

Key details: A continuation of work started last summer. Effective brews from last year will be compared along with alternative combinations suggested by agronomists.

Trial locations: We will be looking for suitable sites in early 2010

7. *Reliability of soil Nitrogen testing*

Aim: To determine the impact of a range of sample handling conditions on N test results.

Key details: The conditions that soil samples are subjected to between coring and analysis may have significant impacts on test results. Samples will be collected from

each sorghum N nutrition site and subjected to various 'commercial' handling treatments.

Trial locations: Soil tests that are taken from trial sites will be used for this study.

8. Tactical Nitrogen management in sorghum

Aim: To further investigate N management on sorghum grain yield and nitrogen use efficiency.

Key details: Comparison of N management strategies focussed on side band v mid row in solid and skip row sorghum. Included in the work will be in-crop applications of UAN and comparison to Urea.

Trial locations: Yallaroi (sown 24th September) and Spring Ridge

For any further details please contact your Local Consultative Committee or

Richard Daniel (NGA)

richard.daniel@nga.org.au
0428 657782

Guy McMullen (NSW DPI)

guy.mcmullen@industry.nsw.gov.au
(02) 6763-1155