

Summer 2015/16 Trial Snapshots

1. Common Sowthistle Management

A total of six trials are planned, three trials will look at the effectiveness of a range of residual herbicides over the summer fallow. An additional three trials will compare herbicides and combinations for the knockdown of large sowthistle late in the summer fallow, as well as evaluating the impact of a double-knock.

2. Summer grass weeds knockdown

Six trials evaluating knockdown herbicides against a range of problem summer grass weeds will be conducted. These trials will be conducted on three main target species - *Windmill grass*, *Button grass* and *Liverseed grass* - and will also evaluate the efficacy of a double-knock compared to single pass.

3. Fallow water efficiency

This is a continuation of work looking at the impact of additional stubble cover on fallow water accumulation and efficiency. An existing site at Walgett will continue to be monitored together with two new sites which will evaluate additional stubble loads together with harvest height and soil disturbance.

4. Impact of Kelly Chains

A number of large scale trials, similar in design to the work currently being conducted in chickpeas, are planned to look at the impact of Kelly Chains on both soil moisture and the impact on crown rot levels in the subsequent cereal crop.

5. Optimising the use of paraquat

Three trials are planned to evaluate the impact on efficacy from combinations of product rate, droplet size and water volume. The objective is to determine which management tool provides the most consistent and economic benefit to efficacy. Another three trials will examine the use of additives and different mixing partners with paraquat, targeting grass weeds and also large/stressed fleabane or sowthistle.

6. Metolachlor Use Patterns

Already well underway, three trials looking at the safety and efficacy of metolachlor use patterns in sorghum. This is a continuation of work to evaluate the impact of early application on weed control efficacy, both prior to planting and in-crop.

7. Sorghum performance following Canola

Concerns have been raised that sorghum production often appears poorer when following canola in the rotation. Possible factors include impact on VAM levels and subsequently effect on P or Zn nutrition, differences in available soil water or even possibly herbicide residues.

Work is underway to establish a 'proof of concept' trial to compare sorghum yield when following either canola or wheat at a site where VAM levels are the most likely possible factor.

8. Impact of Root-Lesion Nematode on Summer Crops

NGA's mega site at Macalister Qld will be the location for a wide range of summer crops to be screened against high and low populations of the root-lesion nematode *Pratylenchus thornei*. Trials have already been planted evaluating maize and sunflower hybrids together with a sorghum x deep P trial. Trials still to be planted include broadleaf and grass resistance screens, soybean variety comparisons and mungbean x deep P trials. In addition, we will continue to collaborate with CSD to generate more data on the impact from dryland cotton varieties on *P thornei* populations.

9. Sorghum Desiccation

Two trials are planned to evaluate additional options for sorghum desiccation using glyphosate and various tank mix partners. These options may also provide benefits in late season weed control.

10. Group A Compatibility

A continuing project evaluating the impact on efficacy of broadleaf mixing partners with key Group A herbicides. The trials will be conducted on common problem summer grasses - *windmill grass, awnless barnyard grass and feathertop Rhodes grass*.

11. Camera (optical) Spray Mixtures

A series of small scale trials evaluating herbicide options that may be suitable for the control of large glyphosate resistant grass weeds when applied with camera sprayers. The same approach will be used to screen for options against large sowthistle.

12. Citric Acid

Two trials to examine the impact of citric acid on the fallow knockdown of summer grasses - in particular ABYG. Comparisons will be conducted on both bore and rain.

13. Residual Herbicides in Fallow

NGA has been heavily involved in evaluating the fit of residual herbicides in the summer fallow in recent years. No new field trials are planned for summer 2015/16 with the focus on collaborating with other research groups to compile, interpret and extend the large amount of data that has been generated.