

Tackling research specific to dryland cotton growers

■ By Annabelle Guest – Research Coordinator, DCRA

AT A GLANCE...

The Dryland Cotton Research Association Inc. (DCRA):

- Was formed by a core group of growers in northern NSW.
- Is a voice for the dryland cotton industry.
- Is run as a self-funded not-for-profit organisation with grower and corporate membership levels.
- Is based on the GRDC funded grower solutions groups models.
- Secures funding for projects to operate through grants from public and private entities – for example, Landcare and Local Land Services.
- Employs a research coordinator to secure funding, run projects and report on projects.

IN 2016 the DCRA was formed by a core group of growers in northern NSW to create an industry voice and address research issues specific to dryland farming. Members from all dryland cotton growing regions are encouraged to join. Aims of the DCRA are to improve innovation and increase the adoption of new practices, make cotton the first choice for summer crop options and to improve the profitability of dryland cotton growers.

The DCRA sees its place in the cotton industry as:

- Providing a united voice for dryland growers;
- Improving farming systems to result in increased areas dedicated to dryland cotton; Driving research projects;
- Improving alignment and collaboration between research bodies; and,
- Advocating dryland cotton issues.

The association is run as a self-funded not-for-profit organisation with grower and corporate membership levels. Grower committee members are located in the Goondiwindi, Moree, Rowena, Narrabri and Liverpool Plains regions. A

research coordinator located in Narrabri is employed through the membership subscriptions to secure project funding, assist in project running and carry out reporting as well as produce newsletters and run field days.

Project ideas are gathered based on the GRDC funded grower solutions groups (NGA, GOA) models where winter meetings are held to present results and identify research issues which are then prioritised by the committee and a method of address found. Project funding has been secured so far from CRDC, Landcare, Local Land Services and CSD.

Current projects the Association is driving are focused on:

- Improving cotton planter designs;
- Using cover-crops to improve water use efficiency;
- Methods to control ratoons and regrowth;
- Using PGRs to modify time of flowering and root development to avoid stress; and,
- Maximising yield fibre quality – spindle vs strippers.

Improving cotton planter designs

This season we have built a planter bar with six different units – comprising of single disc, double disc and a conventional tyne unit – on it to plant into varying moisture conditions and soil types. This piece of equipment was funded by CRDC and is available for demonstrations and field days. The units were supplied by Boss, NDF, Excel Agriculture, Norseman, Janke and David McGavin from Precision Seeding Solutions.

Using cover crops to improve water use efficiency

One of the biggest issues for dryland cotton growers is capturing and making the best use of rainfall which is of paramount importance in the dry summers we have been experiencing. A three year cover crop trial including winter and summer crops, either brown manured or taken through to harvest, has just finished. Wheat was planted into the site in year



David McGavin (PCS) runs through the planter bar set up.



Paul Slack DCRA, Dale Foster NDF, Dan Ryan and Warren Anderson Boss Agriculture.

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Dryland cotton trial, January 2018.

two and dryland cotton in year three. The trial was located east of Moree. The key findings from this trial were:

- Harvesting cover crops didn't reduce plant available water (PAW) for the following crop compared to fallow.
- Legume rotations resulted in the highest levels of PAW, higher gross margin returns than cereals and contributed to soil nutritional status.
- Ground cover greatly assists the rapid uptake and retention of moisture compared to bare fallow.
- Winter cover crops were easier to establish than summer cover crops in the season trialled.

Methods to control ratoons and regrowth

DCRA has been investigating methods such as UHP water cutting technology for controlling cotton ratoons in conjunction with Greg Butler from SA Conservation Farmers. A prototype demonstration was held last season and a path to commercialisation is being investigated.



Slashed cotton stalks after UHP water cutting.



Mitch Cuell and Zac Willmot (PenAgCon), Claire Welsh (CSIRO) inspecting the CSIRO PGR trials.

Using PGRs to modify time of flowering and root development to avoid stress

Wouldn't it be great if dryland cotton could be planted when moisture is plentiful then shut down until it rains if the season became tough? What about preventing fruit shed in times of moisture stress? A CSIRO funded PhD project being run by Claire Welsh is looking at plant growth regulators in dryland cotton to achieve these outcomes. PGRs which encourage root foraging are also being investigated.

Maximising yield fibre quality – spindle vs strippers

The question of when to pick and when to strip and the effects of both on yield and fibre quality is a major one for dryland cotton growers. The DCRA is working with Rene van der Sluijs from CSIRO in Geelong as part of a CRDC funded project to find some answers to this question. The project commences this picking season so results will begin to be generated this year.

For more information regarding the Dryland Cotton Research Association or any of the projects we are working on, please contact Annabelle Guest at drycotresassoc@gmail.com or Ian Gourley at lan@gourleypastoralco.com



Promising results one month after treatment in 2017.