



NORTHERN NEWSLETTER

PLANTING

Welcome to the second issue of the Northern Newsletter, brought to you by **Acres of Opportunity**, a collaboration between Cotton Seed Distributors (CSD) and Bayer Crop Science, with contributions from Cotton Australia, CSIRO, the Cotton Research and Development Corporation (CRDC) and the Department of Agriculture and Fisheries, Queensland (DAF).

The practicalities of planting

In Northern Australian environments, it is critical to make the best of what may be a limited opportunity and break in the weather. In this case, the motto of 'plant once and do it right' will be even more important, as you may only get one opportunity.

What is a planting window?

A planting window is a resistance management technique that restricts the period in which planting can occur, with the aim of restricting the number of generations of *Helicoverpa* spp. exposed to the proteins in Bollgard® 3 each season.

Please refer to the [Planting windows in Northern Australia - Quick Guide](#) for further information.

Please be aware that the planting window for each valley in Northern Australia has been increased from 6 weeks to 8 weeks for the 2019-20 season. Planting windows have been set for two valleys:

Valley	Planting window
Douglas/Daly and Katherine Valley	27 December 2019 - 20 February 2020
Mareeba/Dimbula Valley	7 December 2019 - 31 January 2020
Ord River	TBC
Gilbert	8 January - 3 March 2020
Flinders	TBC
Burdekin	TBC

10 POINT PLAN FOR IRRIGATED COTTON

Rule 4: Planting and establishment.

It's important to have your planter serviced early and ready to go when conditions are right.

Ideal depth depends on the method of establishment and the soil conditions. A simple rule of thumb is to use the "knuckle" method (25-35 mm) as a quick and easy measurement tool in the field, and it is best to speak to your agronomist about the ideal depth for your soil type. Factors such as soil crusting, planting too deep and surface soil temperatures all need to be considered when deciding on a planting depth.

The ideal speed for planting cotton is between 8-10 km/hour, in order to prevent the planter unit from bouncing, ideally having it steady and stable as it moves along. Excessive bounce will lead to poor seed depth and placement uniformity which can result in variable establishment.

Aim to establish no more than 6-7 plants per metre. As plant establishment is likely to be rapid in Northern Australia, the usual losses observed in southern Australia that reduce plant stands after sowing are unlikely to occur. Therefore, sow no more than 7 seeds per metre.

Dryland specific considerations

The key for accurate timing is to ensure sufficient rainfall moisture is available to get the cotton seedlings off to a good start. Wet season rainfall will determine available moisture for dryland crops through the growing season. While this is uncontrollable, planting time can be somewhat managed to ensure that certain growth stages are likely to occur during the wet season. Timing will be a balance between optimising crop establishment, soil water during flowering and boll fill, and avoiding rain during boll maturity and opening that can downgrade fibre quality.

8 GOLDEN RULES FOR DRYLAND COTTON

Rule 4: Planting into standing stubble.

Cotton can be planted into groundcover (e.g. pasture) to aid in establishment, help to retain moisture, reduce

the possibility of runoff and erosion and may also help to reduce surface soil temperature. The groundcover can then be sprayed out after planting.

Row configuration

It is important to consider how your choice of row configuration will fit in with your farming system, as well as the effect it will have on your crop and its growth. Traditional 75 cm or 1 m row spacing should be transposable into Northern Australia.

The effect of temperature on establishment

It is important to consider that high temperatures can reduce seedling establishment and in extreme conditions, can kill the seed and seedling. This is where the importance of groundcover becomes a consideration.

Refuge planning

Refuge planning is a critical part of the Bollgard 3 Resistance Management Plan (RMP). A refuge is an area of crop without the Bt gene (generally Roundup Ready Flex® cotton or pigeon pea).

Under the RMP for Northern Australia, growers in Northern Australia have the following refuge options:

Crop	Conditions	% of Bollgard 3	Regions permitted
Conventional cotton	Irrigated or dryland, unsprayed conventional cotton	5	All regions
Pigeon pea	Fully irrigated or dryland, unsprayed	2.5	All regions

- Unsprayed means not sprayed with any insecticide that targets any life stage of *Helicoverpa* spp.
- It is preferable that all refuge is planted within the 2-week period prior to planting Bollgard 3. If this is not possible, refuge planting must be completed within 3 weeks of the first day of sowing of Bollgard 3.
- All Bollgard 3 fields must be no more than 2 km from the nearest refuge.
- Refuge crops must be at least 24 metres wide and each refuge area must be a minimum of 0.5 hectares.
- Destruction of refuges must only be carried out after the Bollgard 3 crop has been harvested.
- In keeping with biosecurity best practice, ensure you check any restrictions on transportation of harvested cotton crops (including refuges) interstate. Seed cotton originating from non-Bollgard refuges cannot be sent

south for ginning if it originates from the Northern Territory and Western Australia, due to the biosecurity risk of transporting Pink bollworm (*Pectinophora gossypiella*) interstate.

- Further information on refuge requirements can be found by visiting: www.bollgard3.com.au.
- You can also calculate your refuge requirements at: www.bollgard3.com.au/refuge-calculator.

Have a plan for weeds

10 POINT PLAN FOR IRRIGATED COTTON

Rule 5: Weed control.

8 GOLDEN RULES FOR DRYLAND COTTON

Rule 5: Have a plan for weeds.

It is important to control weeds, in order to reduce competition for the crop and maximise yield potential. There are a number of tools available to manage weeds during a cotton season.

The cotton plant can also become a weed itself, if not controlled properly following harvest. It is essential to control both volunteer and ratoon cotton before, during and after the cotton season, as part of the RMP and also for general farm hygiene. Volunteer and ratoon plants can harbour unwanted pests and become very difficult to control if not acted on when they are small.

The Roundup Ready Flex Weed Resistance Management Plan details strategies that can be implemented to minimise the risk of glyphosate resistance developing in weeds on-farm.

For more details visit www.bollgard3.com.au and download the Roundup Ready Flex Weed Resistance Management Plan (WRMP).

Consult the Roundup Ready Flex Cotton Weed Management Guide (WMG) for clear recommendations for weed control practices in a Roundup Ready Flex cotton crop. The guide includes a range of herbicides which offer different modes of action throughout the season, reducing the risk of glyphosate resistance developing on your farm and saving you time and money in the future.

For more details visit www.bollgard3.com.au and download the Roundup Ready Flex Weed Management Guide (WMG).

A key part of any Resistance Management Plan for growers of Bollgard 3 cotton is the control of volunteer and ratoon cotton.

It's important to act on early season weeds (including cotton volunteers) when they are small, and ensure cotton is fully destroyed post-harvest as it can become a woody weed (ratoon). It is also important to implement appropriate cultural methods and herbicide strategies to control volunteer cotton.

For more details visit www.bollgard3.com.au and download the Resistance management: Control of volunteer and ratoon cotton guide.

Nutrition

Application and timing of nutrients in a cotton crop are essential to achieve yield. Engaging the services of a local agronomist will help in making these decisions and help to manage the cotton crop throughout the season.

Virtually all soils will have a low nutritional profile and therefore will require some additional inputs. It is important to match nutrition applications with realistic yield expectations. Apart from nitrogen, cotton requires similar amounts of nutrients as other comparable crops such as corn or soybeans. Nitrogen management is a balance in managing excessive crop growth, maturity and reducing losses (runoff, leaching and denitrification). For efficient uptake, all crop nitrogen should be applied prior to flowering, 30 to 45 days after planting.

INDUSTRY PROGRAMS

CSD Industry Support Program

CSD offers dryland cotton growers the opportunity to reduce their production risk via a dollar for dollar credit towards the following season's seed, if the dryland cotton crop is unable to be picked (excluding crops which are destroyed through hail damage). Terms and conditions apply.

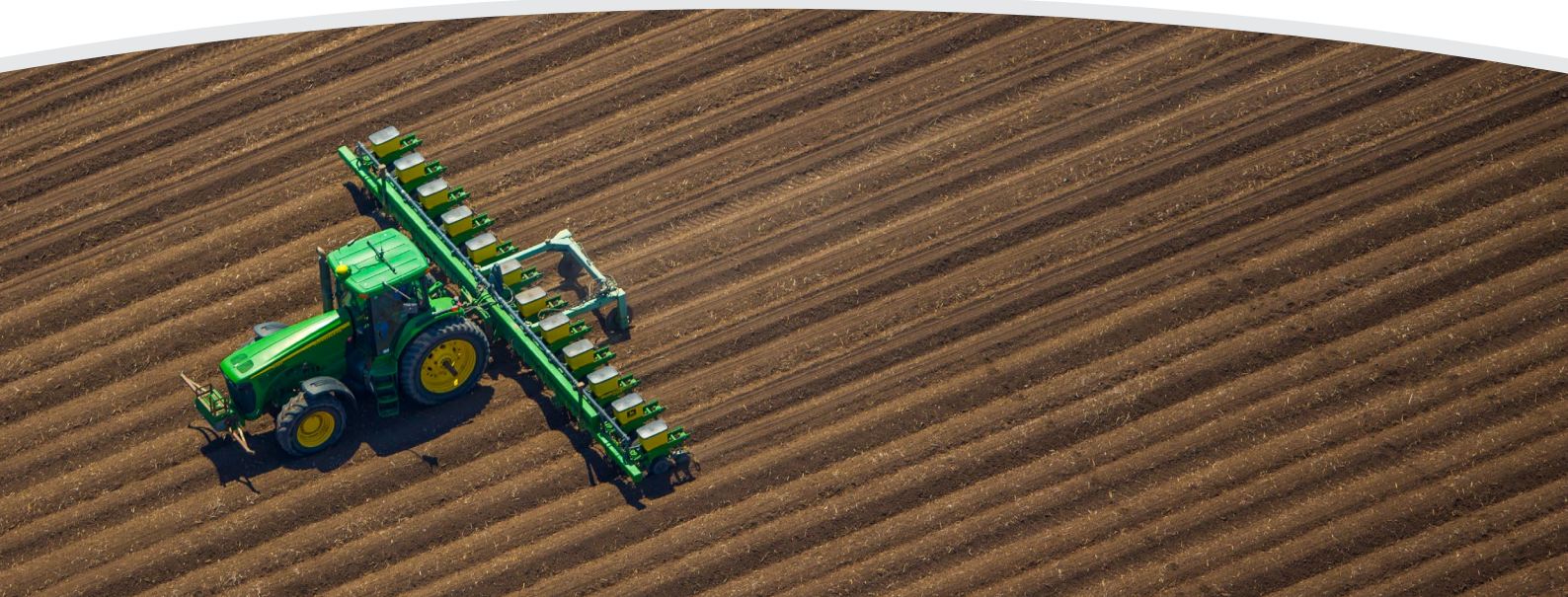
For growers in Northern Australia, the crop must be registered by email to a CSD Extension and Development Agronomist within the 8 week planting window for the relevant area (previously 6 weeks). Registrations will not be accepted after the window has closed for the area where the planting takes place.

For further information, visit: www.csd.net.au/isp.

Roundup Ready PLUS® Program

The Roundup Ready PLUS program is designed to reward cotton growers who use herbicides sustainably and help slow or prevent development of glyphosate resistance in key weed species. The program encourages growers to use a range of weed control practices through product recommendations, education and stewardship campaign and financial rebates. Terms and conditions apply.

For further information, visit:
www.roundupreadyplus.com.au.



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RESOURCES AND TOOLS

Resources

- [NORpak: Cotton Production and Management Guidelines](#)
- [Tropical Cotton Production: Considerations for Northern Cotton Growers](#)
- [Growing Cotton in Northern Australia Guide](#)
- [Acres of Opportunity Irrigated Cotton Guide](#)
- [Acres of Opportunity Dryland Cotton Guide](#)
- [2019 CSD Grower Information Guide](#)
- [Australian Cotton Production Manual](#)
- [CSD Variety Guide](#)
- [FastStart™ cotton website](#)
- [CSD Variety Trial data \(no local trial data for Northern Australia currently, but there will be next season\)](#)
- [CottonInfo YouTube series - Planting and establishment, hosted by John Marshall \(formerly CSD\)](#)
- [CSD Statement of Seed Analysis](#)
- [CSD seeds per kilogram](#)
- [CSD disease ranks](#)
- [Planting Window Quick Guide](#)
- [Bollgard® 3 Resistance Management Plan for Northern Australia](#)

Useful Tools

- [Variety Performance Comparison](#)
- [Cotton Planting Rate Calculator](#)
- [Cotton Field Weather Network](#)

General guide only, not comprehensive or specific technical advice. Circumstances may vary from farm to farm. To the fullest extent permitted by law, CSD and Bayer expressly disclaims all liability for any loss or damage arising from reliance upon any information, statement or opinion in this document or from any errors or omissions in this document.

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