



THE DOZEN DEEDS FOR NORTHERN AUSTRALIA

1. PLANNING, PREPARATION AND STEWARDSHIP

- **Service all machinery, pumps and ring tanks to ensure everything is in good condition:**
 - › This is good farming practice and should be conducted prior to planting any crop. Some operations within the cotton farming system are time sensitive and it is essential to ensure that machinery breakdowns do not limit production.
- **Know your soil type:**
 - › It is critical to select fields with the greatest plant available water holding capacity and greatest rooting depth.
 - › Cotton is very sensitive to waterlogging and prefers soils which are free draining.
 - › Develop strategies for trafficking, planting and irrigation.
- **Investigate transport, ginning and marketing options and organisations to process and sell your cotton crop:**
 - › There are many options available to sell your cotton, including through numerous merchants.
 - › Remember that both the lint and the cotton seed are marketable for each crop.
- **Have contractors (e.g. picking, spraying, farming) organised before planting:**
 - › Discuss with your contractor specific biosecurity needs and the importance of effective boom decontamination and being able to respond to required jobs in a timely manner (e.g. ability to be available with 2-3 days notice).
- **Engage a cotton agronomist/consultant:**
 - › A cotton agronomist/consultant experienced in northern agronomy will assist you with the management of your cotton crop. Their knowledge is valuable in ensuring that the crop is managed without stresses throughout the season.
 - › Cotton agronomists/consultants can help with forecasting crop requirements, variety selection, planting, fertiliser requirements and application, irrigation timing, insect and weeds scouting and control, and crop defoliation.
 - › Even the most experienced cotton growers utilise the services of cotton consultants. It is not recommended to begin growing cotton without the support of an agronomist or consultant (www.cropconsultants.com.au).
 - › It is important for agronomists/consultants to enter the crop frequently. Some may also utilise the services of bug checkers/scouts to access the crop regularly.
- **Stewardship of the cotton crop:**
 - › Establish communication with neighbours regarding your cotton plans for the season, to alert them of the damage that can be caused to cotton crops from Phenoxo herbicide (also known as 2, 4-D) drift.
 - › Investigate MyBMP, SataCrop, 2,4-D drift videos and pamphlets.
 - › Ensure you are compliant with all aspects of the Bollgard 3 RMP for Northern Australia.





2. DEVELOP STRATEGIES FOR CONDUCTING OPERATIONS DURING THE WET SEASON

- **Have strategies in place to manage application of nutrition and growth regulators if needed between wet season rainfall events.**
- **Have a Plan B for in-crop nutrition if fields remain un-trafficable.**
- **Ensure you have capacity to move fast when a break in the weather occurs.**
- **Check your forecast daily and plan for the week ahead.**
- **Don't put off until tomorrow what can get done today.**

3. ESTABLISH AND MAINTAIN A PRE-PLANT COVER CROP

- **Maintaining a cover crop is critical for the benefit of:**
 - › Aiding in crop establishment, in providing a mulch layer to:
 - » Preserve moisture in seeding zone.
 - » Insulate against high soil surface temperatures during planting.
 - › Reducing rain splash, helping to retain moisture and reducing the possibility of runoff and erosion.
 - › Creating a micro-environment which promotes early season growth, and a habitat for beneficial insects.

4. NUTRITION IN HIGH RAINFALL ENVIRONMENTS

- **Budget nutrient requirements on soil tests, crop requirements and yield potential:**
 - › Tailor to soil type and growing season.
 - › Nutrient uptake and removal for different yields.
- **Apply fertiliser in a way to boost nutrient use efficiency:**
 - › Your cotton consultant can give you advice on the rate, product, timing and application method.
 - › For nitrogen, there are two options:
 - » In-crop is most effective from 25 days after planting to early flowering.
 - » On clay soils, there is a risk that wet conditions prevent timely side-dressing of nitrogen. A potential risk mitigation strategy is to use slow release formulations of nitrogen (various products available) that can be applied prior to planting with greatly reduced risk of environmental loss. Placing large amounts of nitrogen as a pre-plant application in standard form e.g. Urea, is at significant risk of being lost prior to flowering. Tactics such as flying on urea during the wet season for furrow irrigated crops has been a risky and at times inefficient practice that cannot be consistently relied upon as an in-season application tactic.





5. SELECT THE RIGHT VARIETY AND SEED TREATMENT

- **Obtain the relevant CSD Grower Agreement and Monsanto Technology User Agreement (TUA):**
 - › Cotton planting seed within Australia cannot be purchased without both these agreements in place as a requirement of the government regulations.
 - › The agreements can be obtained from your local cotton seed supplier (CSD Agent, Bayer Technology Service Provider) who will have further information on how to order seed.
- **Select variety based on:**
 - › Yield in your area and production type.
 - › Disease tolerances.
 - › Resilience in fibre quality.
 - › Technology choice.
- **There are also special offers provided by both CSD and Bayer which will be of interest:**
 - › Your consultant will be able to assist you in making an educated decision on what variety and technology mix will suit your specific situation.
- **Match seed treatment choice to expected disease and early season insect pressure:**
 - › Your consultant will be able to assist you in selecting a suitable seed treatment.
- **Plan refuge and trap crop areas.**
 - › As part of the **[Bollgard 3 Resistance Management Plan](#)** resistance management plan you are required to plant a refuge and trap crop, which will vary depending on the amount of cotton grown and the technology choice made.
 - › Information on the purpose of, the types and requirements for the refuge crop can be found [here](#).

6. PLANTING, TIMING AND ESTABLISHMENT

- **Plant once and do it right:**
 - › Ensure the planter is ready to go when required.
 - › Check planter maintenance, depth, speed and closing wheel pressure (www.faststartcotton.com.au).
 - › Have seed on farm.
 - › Establish a healthy and uniform plant population.
 - › Aim to establish 6-7 plants per metre. Plant no more than 8 seeds per metre.
 - › Establishment is rapid, and you should have a result within 5 days of seed coming into contact with soil moisture
 - › Planting windows - refer to the **[Bollgard 3 planting windows quick guide for Northern Australia](#)**.
 - › Bollgard 3 must be planted into moisture or watered-up in an 8-week window determined by Bayer and the TIMS Committee, between 1 December and 30 May.





7. HAVE A PLAN FOR WEED CONTROL

- **Start the season with a clean fallow.**
- **Consider any herbicide plant back restrictions.**
- **Manage weeds using an Integrated Weed Management plan (IWM):**
 - › Be aware of the [Australian Cotton Industry Herbicide Resistance Management Strategy](#).
 - › It is important that weeds are managed with an IWM plan to reduce weed seed set and future weed pressures. The [Roundup Ready Weed Resistance Management Plan](#) and [Roundup Ready Weed Management Guide](#) by Bayer will provide further information
 - › Consult the Roundup Ready Flex Cotton Weed Management Guide 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.
 - › The Roundup Ready Flex Cotton Weed Resistance Management Plan details strategies that can be implemented to minimise the risk of glyphosate resistance developing in weeds on-farm.
- **Act on early season weeds when they are small.**
- **Ensure cotton is fully destroyed post-harvest as this is a requirement of the RMP:**
 - › Additional information is available from Bayer on volunteer and ratoon cotton management.
- **Roundup Ready PLUS is designed to reward cotton growers who used herbicides sustainably and help slow or prevent the development of glyphosate resistance in key weed species, consult the Roundup Ready PLUS website (www.roundupreadyplus.com.au) for more details.**

8. MINIMISE PLANT STRESS

- **Engage your consultant to help formulate a water budget, and to assist in scheduling irrigation timing:**
 - › Last irrigation is timed to ensure that the crop is mature and to have the soil profile dry at defoliation.
 - › Keep the plant happy - work with the weather, consider rooting depth, vigour (NAWF), any fruit shedding and weather ahead.
- **Do not let irrigation be a limiting factor:**
 - › Factor in hot seasons. Monitor root development and be prepared to irrigate early.
 - › Understand the capacity of your system and how quickly you can irrigate the crop.





9. MONITOR TO MANAGE THE CROP

- **Utilise your consultant to monitor crop growth and progress, insect pest and disease control (if required):**
 - › Cotton is a responsive crop to manage. Growers are able to monitor and manipulate the cotton plant to maximise yield and ease of management.
 - › Critical aspects which your consultant can assist with are growth rates, plant height management and fruit retention.
- **Pest management - choose the most selective insecticide you can afford so you best preserve predatory insects:**
 - › Consult the [Cotton Pest Management Guide](#). Although not specific to Northern Australia, the general principles are transferable.
 - › Be aware of the [Australian Cotton Industry's Insecticide Resistance Management Plan](#).
- **Utilise plant growth regulators to manage excessive growth- consider any needs for:**
 - › Compensation and the period ahead.
 - › Overuse of growth regulator can hinder node production and compensation resulting in lost yield.
 - › Monitor the crop and apply growth regulator little and often rather than in large doses. The VGR model is not applicable in Northern Australia - [refer to NORpak for more details](#).
 - › Excessive rank growth is inefficient, and can lead to boll rots, increase defoliation costs and reduced penetration of insecticides and fungicides.

10. FLOWERING TO CUT-OUT IS A CRITICAL TIME

- **90% of the crop yield is set during this time:**
 - › Hosting a happy plant throughout the entire growth cycle is vital, but during the flowering period, you should aim to:
 - › Prolong the flowering period for as long as seasonal constraints allow.
 - › Ensure fruit retention and accumulated numbers are tracking to the desired target.
- **The key is to keep the plant happy through minimisation of:**
 - › Moisture stress, irrigation scheduling and timing.
 - › Nutritional stress.





11. HARVEST/PICKING

- **Do not defoliate too early - ensure the crop and fibre is mature:**
 - › Your consultant can assist with the timing of the defoliation operation (4 NACB or 60% open).
 - › Do not be tempted to go early as cool temperatures will draw out defoliation. Pay attention to the upper fruiting branches and the rate of boll opening.
 - › Once ready, pick on time and without delay.
- **Do not pick if seed cotton moisture is greater than 12%. This can cause ginning fibre quality issues which could lead to discount penalties.**

12. POST CROP CONTROLS

- **Ensure your crop is destroyed post picking:**
 - › Cotton can regrow into ratoon plants post defoliation/picking and can act as:
 - » A weed, robbing moisture and nutrients.
 - » A bridge to host insect pests, diseases and resistance build up. Effective crop destruction is your best defence against mealybugs and other sucking pests next season.
- **For more information on ratoon and volunteer cotton control, view Bayer's Resistance Management (RMP) for Northern Australia: Control of volunteer and ratoon cotton.**
- **Conduct a pupae busting operation across your trap crop, as required in the [Bollgard 3 Resistance Management Plan \(RMP\) for Northern Australia](#). For more information visit the [Bollgard 3 website](#).**



This fact sheet has been developed in collaboration between



Queensland Government
Department of Agriculture and Fisheries



For more information visit www.acresofopportunity.com.au

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