



**Information** when you need it



# Darling Downs

**January 2019**

## WELCOME 2019

Welcome to the first newsletter for 2019. Unfortunately the start of the year has not been welcomed with wet weather, but rather hot and dry conditions. Surprisingly the crops are still hanging in, although they would welcome a drink soon.

Below is a lot of information to assist you going forward with the season, like managing heat stress, keep the spray on weeds, the Pyriproxyfen window, water running short – how do we manage our irrigation and drift alert, just to name a few.

Please take time to read the articles and contact me if you have any questions.

Regards

Annabel Twine

## Pyriproxyfen (Admiral) 30-Day Window

**Industry data from Silverleaf whitefly (SLW) resistance monitoring shows an increase in pyriproxyfen (e.g. Admiral®) resistance. This is a very concerning trend as pyriproxyfen is a cornerstone product for managing SLW populations in Australia, with low impact on beneficial insects.**

To reduce the risk of SLW developing widespread pyriproxyfen resistance and potential product failure, Cotton Growers' Associations have nominated a voluntary 30-day window for each region in which pyriproxyfen can be applied. The aim of narrowing the pyriproxyfen window is to minimise consecutive generations of SLW being exposed to resistance selection, and ensure the product is being applied once per season when most effective.



The Darling Downs window/s are now open except Murgon and Byee:

**Darling Downs (Central): 28th January 2019 – 28th February 2019.**

**Darling Downs (Chinchilla - Brigalow - Tara): 20th January 2019 – 20th February 2019.**

**Darling Downs (Murgon - Byee): 10th February 2019 – 10th March 2019.**

**Reminder - when controlling SLW populations:**

- Avoid disruption to natural enemies when controlling mirids
- All spray decisions should be made based on the SLW matrix in the Cotton Pest Management Guide: <https://www.cottoninfo.com.au/publications/cotton-pest-management-guide> pages 32-36.
- Growers and consultants should check their regional window before applying pyriproxyfen
- Maximum 1 application of Pyriproxyfen per season

The aim of the threshold matrix is to identify when populations are beginning to enter a phase of rapid increase and enact control prior to numbers reaching levels where they might pose a risk of contaminating opening bolls with honey dew. Other factors that you might consider when approaching a control decision is you are unsure whether you are at threshold is to

- Examine the lower foliage for signs of honeydew. If you are seeing speckling on the leaves or the development of a honey dew sheen on the lower leaves it is time to consider a control treatment
- Examine the lower main stem leaves adjacent to the first 3-4 fruiting branches. If there are reliable numbers of nymphs present and this coincides with the presence of honeydew it is likely that you are observing an increasing population
- Consider your crop stage. The aim for pyriproxifen usage is to bring whiteflies under control by the time the first bolls open. This means that your control decisions when using a product such as pyriproxyfen should be made at least a fortnight before first open boll as the product will take 14-20 days to bring about population decline.
- Ideally use a softer selective product when controlling mirids to reduce any adverse effect on natural enemies (Beneficials). One of the reasons pyriproxyfen works so well is that it is highly selective and leaves the majority of SLW natural enemies in place after application. These natural enemies are very effective at “mopping up” any SLW that survive treatment and prolong the chance of any SLW resurgence. Fields that have been disrupted through the use of non-selective products for mirid management are more likely to have SLW numbers rebound 4-6 weeks after pyriproxyfen treatment. Also the chance of resistant individuals surviving in disturbed fields is much higher.
- If your numbers are not at threshold but SLW are still present in the crop, continue to monitor the population and keep a look out for signs of honey dew.
- If numbers build up or honey dew starts accumulating after the pyriproxyfen window has closed consider the use of a knockdown product to reduce numbers during boll opening.
- If you are worried that control might still be necessary before defoliation, products such as spirotetramat (Movento®), diafenthruon (Pegasus®), acetamiprid/emamectin (Skope®), cyantraniliprole (Exirel®) or

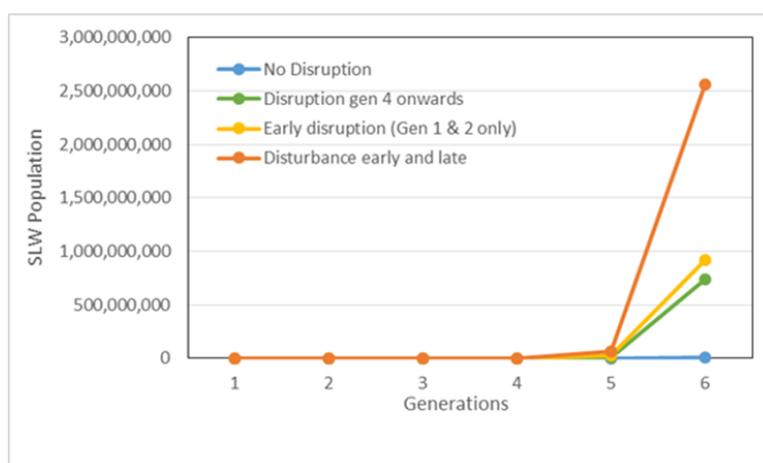
dinotefuran (Starkle) should provide effective control for any late season build-up depending on the situations circumstances.

- Remember that the objective is to limit the opportunity for honey dew contamination of the lint. Even mild honeydew can cause problems.

**REMEMBER: Hotter seasons = more generations**

**AND SLW is a numbers game**

- Early disturbance can have a HUGE multiplier effect before you even see them. The figure below illustrates how early season usage of disruptive products can dramatically increase SLW mid to late season. This is often why low numbers can rapidly transform into problematic populations within a fortnight.



Thanks to Paul Grundy, QDAF for assisting with this article.

Further Information: Refer to CottonInfo e-newsletter Monday 28<sup>th</sup> January 2019 “[Avoid a sticky situation](#)”. If are not subscribed to CottonInfo, subscribe [here](#)

## Managing heat stress

- With hot conditions continuing across the Gwydir, we bring you this [CottonInfo blog](#) on managing heat stress in your cotton, featuring CSIRO researchers Dr Mike Bange and Dr Rose Brodrick.

## Be a good mate. Stop it at the gate

A short video from CottonInfo here with top tips for biosecurity on farms. [Click here to view](#).

## Keep the spray on the weeds

- It is important that chemical users "keep the spray on the weeds" not only from an efficacy standpoint but also to prevent off-target injury to crops.
- Many of the causes of off-target spray drift are a result of:
  - Poor equipment set up.
  - Product selection of high volatility products.
  - Application in environmental conditions which are not suitable.
- The CottonInfo team have put together an information flyer on the recommendations for safe application of sprays during the summer month. Available on the CSD website: <http://www.csd.net.au/resources> or SOS Macquarie website: <https://www.sosmacquarievalley.com.au/resources>

## Drift Alert

“Regardless of the active ingredient or what crop you grow or where you grow it, as a chemical user, it's your responsibility to keep product on your land.

If you're not achieving this, then your equipment, practices & most likely your attitude need urgent review” Mary O'Brien #getmydrift

“If you are spraying 2,4-D with your lights on, you're a bloody idiot”, Mary O'Brien #getmydrift. “We're on the knife edge, regulation on this product will continue to tighten and we will lose this product”.

Drift is preventable see [Summer weed control BEST practice](#) and [Keep the Spray on the Weeds](#) poster

Never spray under still or inversion conditions. Do you know how to recognise an inversion? See this very good video [Recognising an early morning inversion](#)

Compare that video to this one: A demonstration of air movement after an inversion breaks. [Daytime conditions for spraying](#)

Expect an inversion EVERY night unless you have one or more of these:

- Heavy low cloud
- It is raining
- Wind speed remains above 11km/hr for the entire time between sunset and sunrise

### Common Inversion Myths

- 1) If wind speed is between 3 and 15 km/hr then there is no inversion – **FALSE**
  - Going out at 2am in a 8km/hr wind it's HIGHLY likely you are spraying under inversion conditions.
- 2) Only get an inversion when there is low or no wind – **FALSE**
  - Depending on location and topography the wind speed can be quite high and still have inversion conditions.

ITS NOT ABOUT THE WIND SPEED BUT HOW THE AIR IS MOVING, we need some turbulent air movement to dilute our spray and pull fine droplets to ground. Under inversion the air loses turbulence and movement becomes parallel to the surface.

Camera sprayers are also affected by inversions.

Further information

- Stop the drift – spray drift tips with Mary O’Brien [Weed Smart Stop the Drift Webinar](#)
- <https://maryobrienrural.com.au/resources/>
- <https://www.sosmacquarievalley.com.au/resources>

All you need to know about the recent APVMA 2,4-D label instruction changes in one place:  
<https://www2.nufarm.com/au/2018/11/14/apvma-24-d-2-2/>

## Water running short? How do we manage our irrigation?

When irrigation water is limited, stress has less of an impact if it occurs early or late in the season, compared to stress during the flowering period which can lead to significant yield loss. The crop is most susceptible to stress during flowering (see Table 1 - extracted from [WATERpak](#) chapter 3.1). In fact, stress during peak flowering is likely to result in double the yield loss compared to stress during squaring and late boll maturation (as shown in Table 1).

**Table 1. Yield loss (%) per day of water stress (extraction of > 60% plant available water) (Source Yeates et al. 2010#; Hearn and Constable 1984\*)**

	<b>Bollgard<sup>^</sup></b>
Squaring	1.1
Peak flowering	1.7
Late flowering	2.7
Boll maturation	0.69 <sup>^</sup>

<sup>^</sup> 14 d post cut out

**Timing 1<sup>st</sup> irrigation** is critical as it sets up the crop. If you stretch this irrigation, it will adversely affect the crop architecture so it will not be as efficient at generating yield is rainfall or water is received later in the season.

**One irrigation available:** It might be the one that establishes the crop and you grow a dryland crop after that.

**Two irrigations available:** The first irrigation would be at a similar time as a fully irrigated crop. The 2<sup>nd</sup> irrigation is really about managing that nodes above white flower. Delay irrigating for long as possible into flowering without letting the crop go into serious stress or fully cut out – maybe 5-6 NAWF. This will limit yield potential should further irrigation water become available later on but will give the best opportunity for good fibre quality for the fruit that is already set.

**Two irrigations available, established on rainfall:** Target that first irrigation **not** before flowering but in the early flowering period and then the second one around cut out time to make sure you fill those last set bolls. Crop monitoring around this second irrigation is essential as growth regulator may be required to prevent re-growth and target resources into filling bolls.

**Three irrigations available:** Here you are trying to extend that flowering period. These 3 waters would be applied as the crop NAWF declines from around about 8 NAWF nodes down to 4 NAWF (cutout).

### So, what can you do on your farm?

- Current recommendations for limited water situations are to aim to concentrate water applications during flowering (first flower to cutout) and minimise stress during this period. This is the period that cotton is most sensitive to water stress and loss of early fruit will require further growth and water to support growth later in the season.
- Monitoring of crop development and using [CottASSIST's](#) crop development tool to determine how a crop is performing in comparison to the expected growth of a well watered crop.
- Continue to use a variety of tools to schedule irrigations including soil moisture and weather forecasts.

### Further Information:

- CottonInfo Blog: <http://www.cottoninfo.com.au/blog/water-running-short-how-do-we-manage-our-irrigations>
- CSD Facts on Friday: [January a critical time for crop development](#)
- CottonInfo video: [Strategies to manage limited water](#)
- [WATERpak](#) (see section 3.1, 3.2 and 3.3)



## Weeds of Australian Cotton app

The Weeds of Australian Cotton app is a tool for cotton growers and their advisors, designed to assist in identifying 50 key weed species.

The app includes key includes cotyledon shapes as an important diagnostic characteristic - as weed identification in the early growth stages is critical as similar-looking species often have quite different control requirements, and waiting for diagnostic features like flowers and fruits to appear means the optimal window for herbicide applications has long passed.

This app builds on previous publications, including WEEDpak, to help growers ID weeds on the go. It has been developed as part of a CRDC-supported project led by Dr David Thornby, with input from fellow weeds experts Graham Charles, Jeff Werth and Dr Ian Taylor.

It's available on both apple and android smart phone devices and is available to download for free from the [Apple App Store](#) and [Google Play](#).

Download the app, and [this quick start guide](#), today!

## Observations from Incitec

- Increasing enquiries regarding advice on foliar & water-run K products (compatibility with insecticides; form of K; solubility and solution rates for water-run), with apparent premature senescence at higher than previous season levels?
- Advice sought on appropriate critical values and references of interpretation charts for petiole K
- Increasing enquiries regarding subsoil constraints (EC/salinity, Na, Mg) management, diagnosis etc
- Increasing queries regarding irrigation water quality, testing & interpretation

## Dates for the Diary

- **Bankless Irrigation Field Day**
  - Date: Wednesday 6th February 2019
  - Supported by NWIAL (North West Irrigation Australia Regional Committee), GwydirValley CGA, CottonInfo, NWLLS and NSW DPI Sustaining the Basin
  - Flyer attached
- **Darling Downs Cotton Grower Assoc. Grower of the Year Field Day**
  - Date: 27<sup>th</sup> February 2019
  - 'Arrawatta', Macalister
  - Early start with breakfast
  - More details to follow