



Macquarie bale up

APRIL 2018

SEASON CLIMATE SUMMARY

Table of Day Degree Details for Bourke Airport Aws (48245)

Day Degree Accumulations for the period 1 October to 01 April in the years 1957 to 2018.

Note: Hot Days have Max Temp $\geq 36^\circ$. Cold Shock Days have Min Temp $\leq 11^\circ$ and are shown with *.

Date	2017	2016	2015	2014	2013	2012	Hi 2005	Lo 1974	Average
Hot Days	86.0	102.0	87.0	93.0	71.0	83.0	95.0	40.0	56.8
Cold Shock	6.0	22.0	2.0	12.0	17.0	17.0	6.0	24.0	12.7
01-Apr	2,858.7	2,887.7	2,894.6 *	2,846.7	2,675.2	2,748.8 *	2,945.0	2,268.0 *	2,539.8

Table of Day Degree Details for Warren (Auscott) (51124)

Day Degree Accumulations for the period 1 October to 01 April in the years 1957 to 2018.

Note: Hot Days have Max Temp $\geq 36^\circ$. Cold Shock Days have Min Temp $\leq 11^\circ$ and are shown with *.

Date	2017	2016	2015	2014	2013	2012	Hi 2017	Lo 1974	Average
Hot Days	56.0	55.0	58.0	45.0	46.0	48.0	56.0	22.0	31.7
Cold Shock	16.0	38.0	7.0	27.0	29.0	29.0	16.0	56.0	28.7
01-Apr	2,459.3	2,383.0 *	2,445.3 *	2,407.5	2,298.0	2,363.8 *	2,459.3	1,825.7 *	2,147.3

Table of Day Degree Details for Trangie Research Station Aws (51049)

Day Degree Accumulations for the period 1 October to 01 April in the years 1957 to 2018.

Note: Hot Days have Max Temp $\geq 36^\circ$. Cold Shock Days have Min Temp $\leq 11^\circ$ and are shown with *.

Date	2017	2016	2015	2014	2013	2012	Hi 2017	Lo 1971	Average
Hot Days	51.0	48.0	56.0	40.0	42.0	46.0	51.0	2.0	26.2
Cold Shock	16.0	37.0	14.0	28.0	30.0	27.0	16.0	47.0	31.5
01-Apr	2,409.2	2,313.8 *	2,374.3 *	2,356.3	2,242.2	2,321.2 *	2,409.2	1,754.8	2,073.9

Day Degrees	Growth Targets						Percentile Information		
Table of Day Degree Details for Narromine Airport (51115)									
Day Degree Accumulations for the period 1 October to 01 April in the years 1957 to 2018.									
Note: Hot Days have Max Temp $\geq 36^\circ$. Cold Shock Days have Min Temp $\leq 11^\circ$ and are shown with *.									
Date	2017	2016	2015	2014	2013	2012	Hi 2006	Lo 1971	Average
Hot Days	48.0	49.0	45.0	34.0	39.0	45.0	43.0	2.0	24.0
Cold Shock	21.0	43.0	16.0	31.0	40.0	34.0	28.0	45.0	33.2
01-Apr	2,335.8	2,254.3*	2,298.3*	2,271.3	2,167.5	2,245.8*	2,347.5*	1,741.4	2,023.9

Table of Day Degree Details for Dubbo (Darling Street) (65012)

Day Degree Accumulations for the period 1 October to 01 April in the years 1957 to 2018.

Note: Hot Days have Max Temp $\geq 36^\circ$. Cold Shock Days have Min Temp $\leq 11^\circ$ and are shown with *.

Date	2017	2016	2015	2014	2013	2012	Hi 1982	Lo 2011	Average
Hot Days	43.0	40.0	30.0	24.0	34.0	39.0	43.0	3.0	19.0
Cold Shock	22.0	47.0	18.0	39.0	44.0	39.0	24.0	38.0	34.8
01-Apr	2,227.5	2,168.3*	2,171.5*	2,161.5	2,058.8	2,128.5*	2,300.8	1,695.3*	1,952.6

Fig 1. Climate summary for the region (source : <https://www.cottassist.com.au>)

SUMMARY

When we look back on the last few seasons there is a vast notable difference in the average yields (2015/16 high 2016/2017 not so high 2017/2018 high) , using the tables above from cottassist we are able to see that one of big differences around the seasons is the cold shock days. The 2015 season was very high yielding and hot and dry. The 2016 season was predominantly disappointing across most of the growing regions in that the high yields were not replicated from the season before. If we look at total DD accumulated it (2106) was not that far behind the previous season or the 2017 season just passed. However the yields are telling a different story. In each of the areas we have analysed there is at least a 50% reduction in cold shock days from the 2016 season. In the Bourke region there was three

times as many cold shock days in the 2016 season compared to the 2017 season. However the DD total are not that different the 2017 season.

From analysing this data we can say that it's not how many DD we end up with but how and when we accumulate them and the number of cold shocks that has the biggest impact. The CSD Management tour on the 25th of July will shed some more light how and when temperature can affect our yield potential <http://www.csd.net.au/events/93-2018-cotton-management-tour>

PICKING AND GINNING REPORT

I have been getting some great reports of record yields across the valley. However with ginning only about 20% through I might leave the reporting on this until we have more conclusive details (but 17+ bales will not be a rare site !!!). The reports on quality of the early ginned cotton is fantastic with one gin reporting that only a few bales outside grade for high micronaire , colour and leaf have all been exceptional as we might expect from such good picking conditions.

Reports have shown that picking is around 85% through across the valley and the gin yards are filling fast. This is the first year we have had the 3 little ducks line up  in terms of hectares planted, high yields and good strong prices. If growers are reflecting on the season and have some issues that they would like me to investigate further let me know and I can do another report like last season “physiologists view of the season” for example.

DEFOLIATION

This season saw very good defoliation conditions across the valley with most fields getting three hits. Janelle Montgomery from CottonInfo in the Gwydir got a question from a consultant that she put to **Dr Mike Bange** and here is what he had to saythis is an excerpt from her March newsletter after they received rain after the first defoliation.

Question 1:

How much impact does Ethephon have in affecting how well Thiadazuron (TDZ) works on dropping leaf off the plant? In the past I have noticed the more Ethephon I use in the first defoliation the worse job I get regarding leaf drop. We don't seem to have any problems getting bolls to open, just getting the leaf to drop so, in a system where we now budget for 3 defoliation sprays are we better

using straight TDZ on the first defoliation, then using a combination of both on the following 2?

Fig 2. Two strategies for defoliation.

	1 st strategy	2 nd strategy
1 st hit	<ul style="list-style-type: none"> 150ml Thiadazuron (may be higher, depending on temperatures) 	<ul style="list-style-type: none"> 150ml Thiadazuron
2 nd hit	<ul style="list-style-type: none"> 500ml prep Ethephon 2L Ethephon 	<ul style="list-style-type: none"> 180ml Thiadazuron 2L Ethephon
3 rd hit	<ul style="list-style-type: none"> 200ml Thiadazuron 2.5L Ethephon 	<ul style="list-style-type: none"> 200ml Thiadazuron 2.5L Ethephon

MB comments : *Certainly not an expert on this (experience and knowledge of the crop situation counts most), but the high amounts of ethephon in addition to the stress caused by thiadazuron would cause high amounts of ethylene instantaneously which simulates a severe stress. Some clues maybe in the action of the two. Thiadazuron acts to stimulate a stress response and create the right balance of the appropriate hormones to enable ethylene to act. Ethephon is like a direct shot in the arm of ethylene and is more associated with contact (the reason why it is good for boll opening). This done in warm temperatures allow the action of all products to work really well.*

The second strategy when warm is more likely to avoid the problems but continues to aim to readdress the plant balance of hormones that help to age the plant and allow leaves to drop

that rely more on this process (the abscission layer) (source : Gwydir Grower 19th of March)

Please let me know if you have any questions (this goes for any of the researchers) and I will do my best to get them addressed.

WHAT IS TURN OUT/OUT TURN (LINT) PERCENTAGE?

The turn out percentage is a simple measurement of the weight ratio of lint to seed cotton in any particular field. Each module is comprised of lint, seed, trash, burr, mote fibres and moisture. For example if the lint percentage is 40%, 50% may be seed and the remaining 10% by weight of extraneous matter such as trash and mote. These ratios can be influenced by many environmental and management influences (CSD).

What affects turn out?

- 1) Inherent turn out of the variety, due to seed size and weight.
- 2) Trash content. High trash levels reduce turnout. Timely and effective defoliation will help reduce the amount of trash.
- 3) Moisture content at Picking and Ginning – very dry years turn out is usually higher. However modules with higher moisture require extra heat during ginning and this can reduce the turnout.
- 4) Irrigated vs Dryland cotton - dryland turnouts generally a few percent below that seen in fully irrigated conditions for the same variety.
- 5) Fertile Conditions Late into the Season (adequate N and H₂O) after cutout can increase seed size and micronaire. Larger seed size will reduce turn out.

Turn out percentage is not correlated to final crop yield, it is made up of how well you have grown the crop to maturity, how well the defoliation process has gone, how well picking goes in terms of how clean the pick was and moisture content.

Example to describe Turn Out:

- Deliver 2300kg Round Module to gin
- Gins out at 44% turn out equating to 4.46bales or 1012 kg of lint for that Round Module.
- Assume Seed factor for gin @260kg per bale
- 4.46 bales by 260kg gives 1159kg of seed
- Therefore if you add up the lint and the seed, Total weight of Lint and Seed sums to 2171kg
- Therefore 129kg (2300kg minus 2171kg) of the original round is not accounted for in either seed or lint. This 129kg is made up of moisture, leaf, burr, trash, some of the immature fibres (mote) and any wrap contamination.
- It's the fluctuation in this 129 kg that changes the turn out percentage.

This information has come from CSD. Refer to CSD Facts on Friday for more detailed information:

<http://www.csd.net.au/fofs/218-turn-out-percentage---factors-involved>

HAVE YOUR SAY

Thanks to those who have taken the time to fill out the survey below, we are winning the charge on number of surveys filled out (not that we are competitive or anything) so if you have some opinions on where you want your research dollars spent please take the five minutes to fill this out so we can make sure your voice is heard.

<https://www.surveygizmo.com/s3/4263510/cotton-research-priority-survey-2018?CGA=Macquarie+Cotton+Growers'+Association>

This survey should take approximately 5 mins to complete and asks for feedback regarding issues or research opportunities associated with;

- Cotton crop productivity;
- Cotton business profitability; and
- Risks that threaten the cotton industry.

LOCALS FLYING THE FLAG

This year we have another of our growers who have made it to the finals of the Monsanto grower of the year awards. Glen and Narelle Whittaker were the winners of the farm of year at a local level last season, they were nominated for the national awards and were selected as finalists. The judging panel flew in to Warren two weeks ago and we did a farm tour out at "Wingfield" with the judges and industry reps. Glen made it clear that their success was the result of a great team who included his family, farm manger Owen McNair of Black Dog Ag Services and Dave Klaare his consultant as well as many others who all work towards their mantra of "consistent, even yields". It seemed to be a what they did this season as there were plenty of yellow bales and the end of each field.



Fig 3 . Dave Klaare check out his handy work
Fig 4 . Glen Whittaker on the MCGA Warren field day.

IN CASE YOU MISSED IT

CottonInfo Climate risk workshop: Macquarie Valley Summary: 2ND May 2018

Attached to email are the notes from the climate workshops held in the Macquaire valley last week. Three speakers lead us through the maze that is the models, the forecasts, and the plethora of tools such as analogue years, ocean indices plus much more that gain the skills to know what to look at when.

That's it for another edition of the Macquaire bale up, the next one will have all the details of the records broken and the crop competition until then I'll leave with this pearl of wisdom.

"You can either oar, using either oar, or you can let it sink.. either or 🚣 " (anon but it could have been Glen himself)

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