



the **Mungindi grower**

September 2021

Water availability and good prices to drive large cotton planting

Welcome to the first Mungindi Grower of the new season.

As we prepare for the start of the 2021-22 cotton season, two key positive factors are lining up - good water availability and strong cotton prices.

A close eye will be kept on weather conditions in the critical planting window and it will be important to read the season with the help of long range forecasts and adjust management as the season unfolds.

BOM Long range weather forecast

- Rainfall for October to December is likely to be above medium for much of eastern Australia, although the likelihood of exceeding the median rainfall is higher in October, and lower in November.
- With a weaker negative IOD and approaching La Nina, one would expect cooler temperatures and lower crop ETo through the remainder of the calendar year.
- BOM Climate overview:
<http://www.bom.gov.au/climate/outlooks/#/overview/summary>
- Also look at the latest [CottonInfo Moisture Manager](#) compiled by Jon Welsh.

Cotton Area

Current estimate for the Gwydir 2021/22 season is 50,000 ha irrigated with strong interest in dryland this season. Having full on-farm water storages and [Copeton Dam at 83.1%](#), the Gwydir has some certainty for 2 years which is fantastic. The [2021/22 General security allocation](#) is 69.3%.

Current estimate for the Mungindi district (Mungindi/Talwood/Boomi) is 15,000 irrigated cotton and 10,000 dryland. Pindari Dam is full, 100% – holding about 313,000 ML. [Glenlyon Dam](#) is at 73.5% capacity. General Security (A Class & B Class) allocation is 100% of entitlement for the current water year (see [NSW water allocations](#)).



The largest area of cotton planted in Australia was 655,000 hectares in 2011 which produced a record 5.5 million bales. Figure one shows the production area in the Gwydir since 1990. Fully irrigated production in the Gwydir is now around 72,000 ha (dropping back from 90,000 pre-water recovery).

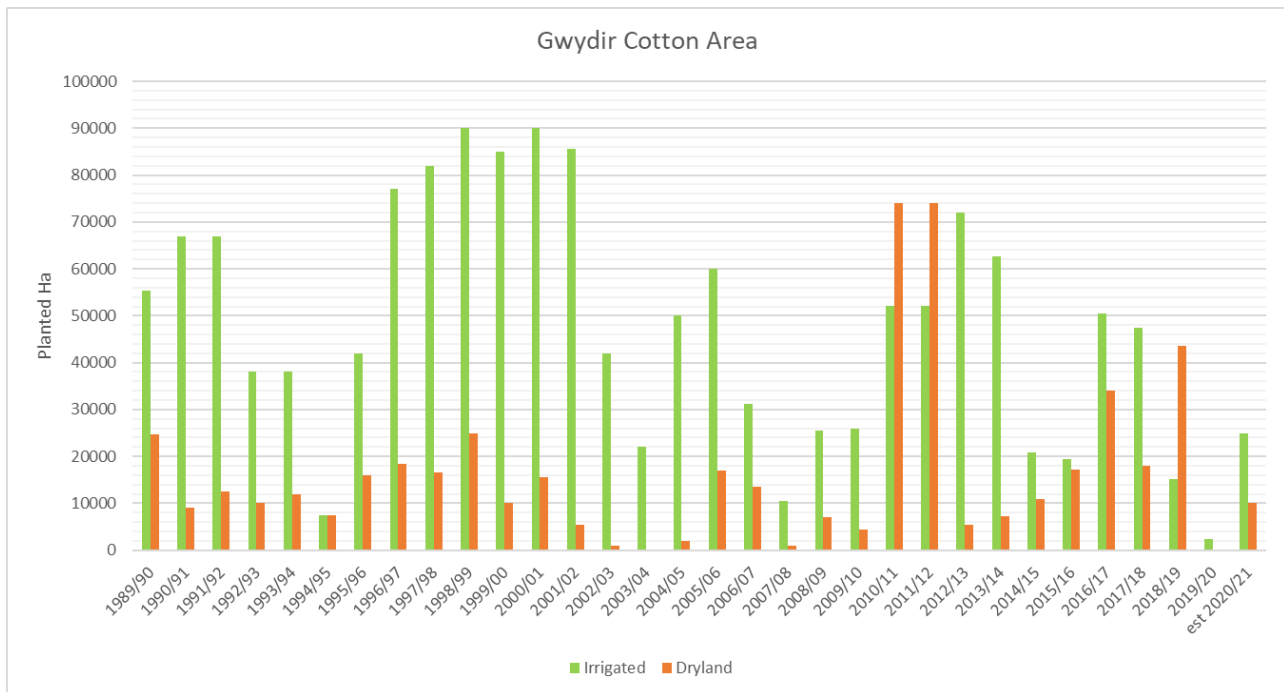


Figure 1: Gwydir irrigated and dryland cotton production since 1990. Source: Gwydir Valley Irrigators Association

Map your Cotton Area

All cotton growers are encouraged to play their part in preventing off-target spray drift damage by mapping their fields in [SataCrop](#) this season.

It is really important this map gets completed so ALL susceptible crops are marked out easily for spray applicators and farmers to see.

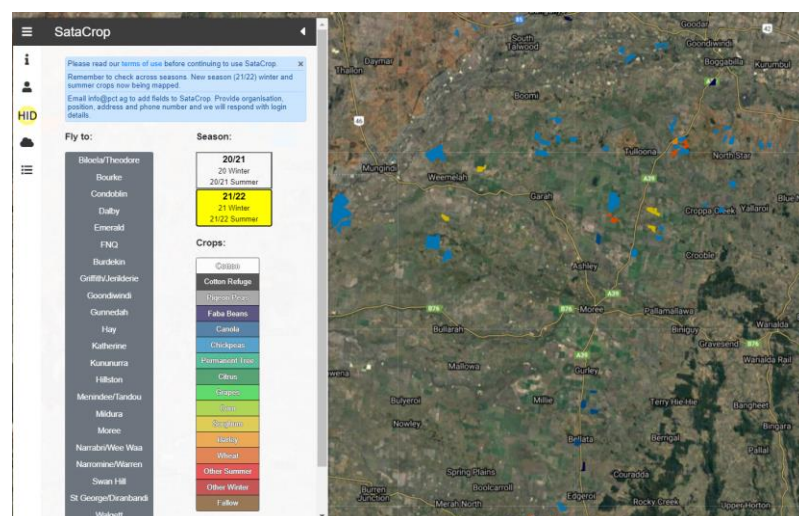


Figure 2: SataCrop Website

To gain access to the SataCrop website for editing purposes, you will need to email Ben Boughton at PCT-agcloud on ben@pct-agcloud.com

A short video to show you how to use Satacrop and add your fields is available at: [SataCrop Video- How to add a field.](#)

If you have used SataCrop previously, all you need to do this season is re-colour code your fields, depending on what you have planted where.

“It is vitally important growers do all they can to prevent off-target spray drift from occurring, and by using SataCrop, you’ll be doing your bit to help yourself and your neighbours not be impacted by off-target spray drift” Cotton Australia.

Planting: Do it right, do it once

Planting can begin when there is a rising plane of soil temperature forecasted above 14°C for the next 7 days (where the temperature is recorded at 10cm depth at 8am). Refer to the CSD Soil Temperature Network to see what soil temperatures are doing in the Gwydir district.

Stuart McFadyen has 7 soil temperature sensors installed around the Gwydir district (Figure 3). CSD has 63 installed across the whole industry. Stuart has been busy conducting maintenance and getting these installed in our district over the last month.

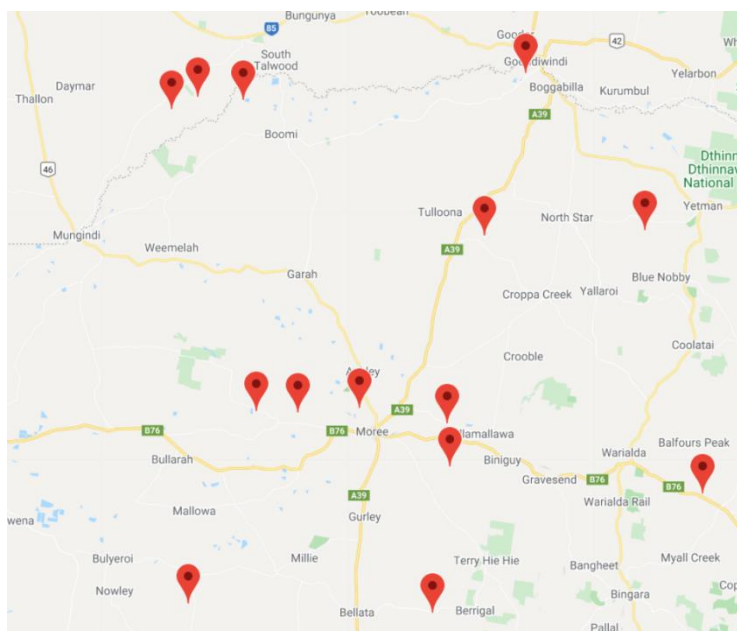


Figure 3: CSD Soil Temperature Network

Temperature affects the time taken for plants to emerge and the longer it takes the greater chance of seedling death through disease and insect damage. Check out the results of a CSD experiment using their thermogradient table – difference in growth at 7-days at different temperatures (Figure 4).



Figure 4: Difference in cotton seed germination and growth at 7-days at 12 °C, 14 °C, 16 °C, 18 °C and 20°C. Source: CSD Facts on Friday: [Factors that affect Cotton Establishment](#)

CSD talk about having the [Green Light for planting](#), if you have the green light, happy days, Lets GO! A red light indicates that planting condition are definitely unsuitable and an amber light means planting might commence, but you need to be cautious and adjustments, such as planting rate, may need to be made.

The [Fast Start initiative](#) is giving you the tools and information to ensure the best start to your crop.

Planting Rate

The [cotton planting rate calculator](#) helps you determine the planting rate required to achieve your desired plant stand. It's based on the following factors:

- Variety
- Field conditions
- Disease levels
- Establishment method
- Seed germination percentage
- Soil temp at planting
- 7-day soil temp forecast.

“Growers should aim for 10-12 established plants per meter in irrigated fields” Stuart McFadyen, CSD E&D Agronomist, Gwydir, Mungindi.

The cotton planting rate calculator does the maths for you, but for those old school below are two examples of calculating planting rate comparing sub-optimal and more optimal conditions (Table 1).

Table 1: Calculating planting rate

Example	Poor soil conditions represent cool air temperatures for the week after planting, usually back to back with a field score of 3 to 5 and a low soil temperature (<14°C)	Good soil conditions represent rising warm air temperature post sowing, usually a fallow field with a field score of 2 or above and a warm soil temperature (>16°C)
Desired plant stand	<ul style="list-style-type: none"> • 10 plants/m • 100,000 plants/ha 	<ul style="list-style-type: none"> • 10 plants/m • 100,000 plants/ha
Divide by estimate plant survival	<ul style="list-style-type: none"> • 60% (40% establishment mortality) • $100,000 / 0.60 = 166,666$ 	<ul style="list-style-type: none"> • 80% (20% establishment mortality) • $100,000 / 0.80 = 125,000$
Divide by the germination percentage of your seed	<ul style="list-style-type: none"> • 89% • $166,666 / 0.89 = 187,265$ 	<ul style="list-style-type: none"> • 89% • $125,000 / 0.89 = 140,449$
Your seedling rate	<ul style="list-style-type: none"> • 187,265 seeds/ha • 18.7 seeds/m 	<ul style="list-style-type: none"> • 140,449 seeds/ha • 14.0 seeds/m
Divide by seeds/kg for your variety	11,500 seeds/kg	11,500 seeds/kg
kg/ha required	$187,265 / 11,500 = 16.3$ kg/ha	$140,449 / 11,500 = 12.2$ kg/ha

Source: [FastStart Establishment Guide](#), Page 40

Seed size and germination data for a variety will have a large impact on the final planting rate, so you need to know this. You can get it via the QR code on your bag of cotton seed.

Put your phone's camera over the QR code and it will take you directly to your [Statement of Seed Analysis](#). Select your variety and seed treatment (circles in green), type in the AUSlot number (Circled in red) and the Statement of Seed analysis will appear

The information in the statement of seed analysis is specific quality data for an AUSlot and includes results for germination, seeds per kilogram, mechanical damage and physical purity. Figure 5 shows an example of the seed variety, technology and quality information that is printed on the bag sticker.



Figure 5: Statement of Seed Analysis for every bag of seed available via the QR code on the bag.



is a joint initiative of



Best Practice



The germination results represent the physiological quality of the seedlot.

Warm germination test: measures the germination potential or seed viability and represents the maximum germination rate under ideal conditions. This is a seven-day test which is conducted under a cyclic 20/30°C temperature regime. To be considered germinated, a seedling must have a length from hypocotyl hook to radicle tip of no less than 40 mm and be free from abnormalities. **The minimum seven-day warm germination percentage for cotton planting seed is 80%.**

Cool germination test: measures seed vigour, which represents the seeds potential for rapid and uniform germination and development of normal seedlings under a range of conditions. This test follows the same protocol but is conducted at a constant 18°C for 7 days. **The minimum value for seven-day cool germination of cotton planting seed is 60%, but typically is above 70%.**

Data is also provided on physical purity, as well as mechanical damage, which is assessed as a percentage of seeds with physical defects such as cracked or holed seed coat, or broken seed.

All germination values reported are for the whole sample including mechanically damaged seed

For further information look in the [Australia Cotton Production Manual](#) on page 88.

Do you know what's required for to give your crops the best start? It's all in the FastStart Accreditation Course - [iMOVIE QUIZ!](#) A great resource put together by the CSD E&D Agronomists.

FastStart Awards Open for 2021/22 season

Irrigated and dryland cotton growers who are pleased with their cotton stand establishment this season could win themselves an expenses-paid trip (Australian destination TBC) courtesy of Cotton Seed Distributors (CSD) and Syngenta.

To enter the 2019 FastStart™ Cotton Establishment Awards growers are encouraged to submit planting details and establishment figures, along with a supporting photo, with awards on offer for the best irrigated and dryland crops.

Further information can be found at <http://faststartcotton.com.au/> while the on-line entry form can be found [here](#).

Pre-irrigate, or water-up?

CottonInfo has recently released a [CottonInfo e-news](#) comparing the advantages and disadvantages of pre-irrigating and watering up. It includes some on-ground observations from Mike Stone, ICMS, Moree and Jim Purcell, Aquatech Consulting, Narrabri.



Check for soil pests prior to planting

A recent [CottonInfo e-newsletter](#) focused on how to check for soil pests prior to planting. Soil pests such as wireworms and, occasionally, earwigs can decimate plant stands while post-planting control options are largely ineffective. It is better to get a handle on numbers prior to planting and implement control measures such as in-furrow insecticide sprays at planting, if required.



The true **wireworm** is a soft-bodied, cream-coloured larva with a flattened, dark brown head. 20mm (Photo: L. Wilson)



Several species of false wireworms may occur in any particular crop, depending on locality, soil type, organic matter and tillage practices. Larvae feed on germinating seed and chew on seedling roots and shoots, resulting in patchy stands. 35mm (Photo: L. Wilson)



The black field earwig can be a pest and a predator. They can be a seedling pest in a wide range of crops, and also a predator of larvae, pupae and wireworm. 14mm (Photo: K. Power)



Adult true **wireworms** are grey to brown elongated beetles that jump and click when disturbed. They are known as click beetles. 25mm (Photo: J. Wessels)



Adults of the large false wireworm (20mm - left) and the southern false wireworm (9mm - right). (Photo: D. Ironside)



The common brown earwig is a nocturnal predator of caterpillars. 24mm (Photo: K. Power)

How to check?

Digging randomly in the soil is generally ineffective and **bait sampling** 3-4 weeks prior to planting is regarded as the most effective technique.

Bait sampling involves the burial of soaked grain or cut potatoes at several (or more) sites in a field for 5-7 days then checking for the presence of the pests or damage to the bait (easier to see with the potato). The baits attract pests to the site so that they can be identified in the soil. Bait sampling guidelines are outlined in the [Cotton Pest Management Guide 2020-21](#) (CPMG) and a video on how to conduct bait sampling is available on the [CottonInfo Youtube](#) channel.

How Many is Too Many?

While there are no specific thresholds developed for cotton, summer grain crop thresholds can be used as a guide. One or more wireworm larvae per bait is considered damaging and 2-3 earwigs per bait (50 across 20 baits) is likely to warrant control measures. See the [CPMG](#) for more detail and control options.

Spring – a critical time to monitor mice numbers before summer crop planting

Mice have survived the winter months and numbers have increased in the Gwydir district during recent warmer weather. While numbers are still patchy across the district, some fields have had low to moderate numbers and crop damage has been observed. Baiting has commenced across the district.

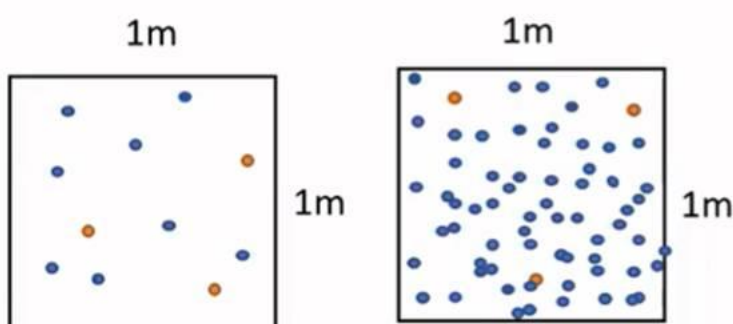
THERE IS NOTHING IN THE NEXT 6-8 WEEKS THAT IS GOING TO MAKE MOUSE NUMBERS GO DOWN

We need to be sure we make a dint in them this spring and continue to vigilant throughout summer and autumn.

Steve Henry, CSIRO resident Mice Expert says:

- In spring, you must determine the problem and take action
 - Numbers now establish the breeding potential
- We are at a very critical time as grain begins to fill. (Consultants say it's too late once you have reached milky dough stage to bait).
- Once there is an alternative food source, the mice won't bother chewing the chew cards, the crop is thick so it's difficult to see burrows, you can really only monitor obvious damage (dead heads, chewed nodes), so difficult to monitor numbers.
- Once there is an alternative food source, the bait will not be as effective.
- **You MUST bait before the crop ripens.**

Here is a good visual showing why you need to bait before there is an alternative food source – red dots are the bait, blue dots the cereal or pulse grains! The alternative food source is competing with the zinc phosphide for the attention of the mouse. So, you have to give mice the best chance of discovering the bait!



If you missed Steve Henry's latest GRDC webinar ([Mouse update - spring management in winter crops and in the lead up to summer crop sowing](#)), it's well worth a look (or just listen to it) as there is some really useful information and an interesting Q&A at for the last 30 minutes.

Further information is available on the GRDC website:

<https://grdc.com.au/resources-and-publications/resources/mouse-management>

Irrigation Pumps & Systems – September 27-28



This Irrigation Australia course is designed to provide participants the knowledge and skills to operate and maintain irrigation pumping systems and install, test and maintain pumping systems to a national standard.

Course learning outcomes:

- The ability to determine system types & requirements
- Knowledge of different types of irrigation systems
- An understanding of pump curves, selection, and installation
- Knowledge of how to maintain and test irrigation pumps
- Knowledge of how to install and commission irrigation pumps
- Hydraulics of irrigation systems including friction calculations

Entry-requirements: Participants of this course will need to have access to two (2) irrigation pump units to complete the post-course assessments.

Course program: This course is delivered over 3 x 4 hour Virtual Classroom session

For further information and to enrol: <https://www.coie.com.au/course/irrigation-pumps-systems/>

Latest CottonInfo Factsheets:

Here are two fact sheets that have just been updated and are topical at the moment.



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