CottonInfo **Information** *when you need it*

Southern NSW crop check

	Southern Valleys
Crop Stage	• Emerging to 6 nodes, most at 1.5 to 2 nodes
Irrigation	• Not yet but as fields dry back first irrigation timing will be critical to get right with some slowly developing root systems
Insects/Beneficials	• No concerns at this stage • Thrips in low numbers but expecting to build
Weeds	• First in crop herbicide spray done on most fields
Disease/Environmental	• More Rhizoctonia than normal • Some Alternaria on cotyledons • Known BRR fields very slow in development
Comments	• Early October planted very similar to 20th October planted • 10th October planted looks the best so far • Area planted estimated at Lower Lachlan 3,000 ha, Murrumbidgee 44,000 ha and Murray 4000 ha

Seasonal Day Degree and historical data is sourced from Cotton Seed Distributors Day Degree Calculator found at www.csd.net.au/ddc. For more specific day degree and crop management detail for your farm, field and variety check out CottonTracka® at www.cottontracka.com.au

CottonInfo **Information** *when you need it*

Southern NSW crop check

18th November 2022 Griffith 87.2 1532 DDs (56 % of 10-year average)

GRIFFITH AIRPORT AWS

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Date range: 1 October, 2022 to 17 November, 2022 (48 days).

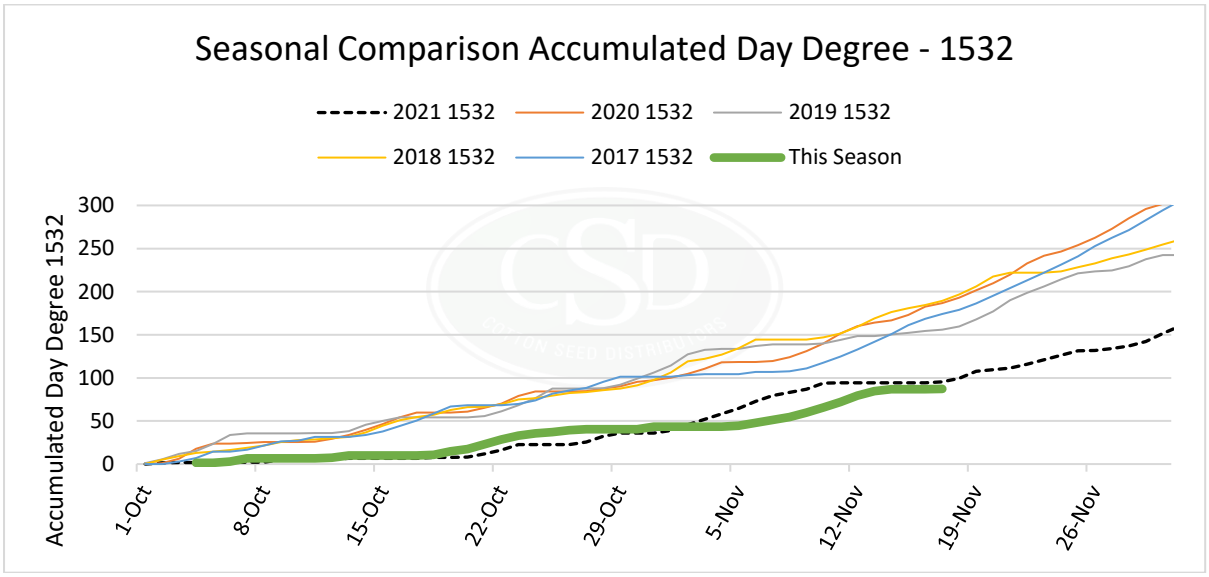
Summary | Seasonal comparison

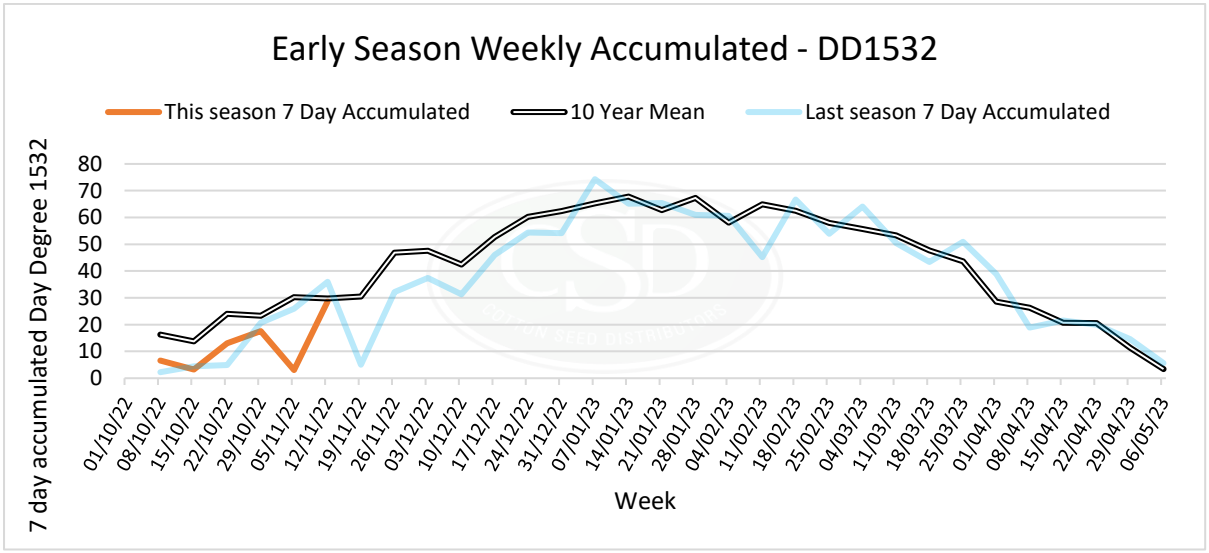
	2022	2021	2020	2019	2018	10 year mean
Base 12	273.3	299.8 ▲	393.7 ▲	384.5 ▲	405.9 ▲	371.7 ▲
DD1532*	87.2	95.5 ▲	186.7 ▲	156.0 ▲	189.4 ▲	156.6 ▲
Cold shock days (≤ 11°C)	24	32 ▲	21 ▼	32 ▲	27 ▲	26.4 ▲
Days above 36°C	0	0	1 ▲	3 ▲	2 ▲	1.6 ▲
Nights above 25°C	0	0	0	1 ▲	1 ▲	0.2 ▲
Days above 40°C	0	0	0	0	0	0.1 ▲
Total rainfall (mm)	283.6	69.4 ▼	59.6 ▼	47.8 ▼	84.4 ▼	73.8 ▼
Total radiation (MJ/m^2)	788.4	914.5 ▲	1017.9 ▲	1081.9 ▲	998.7 ▲	912.7 ▲
Average temperature (°C)	16.3	16.7 ▲	19.3 ▲	18.6 ▲	19.6 ▲	18.5 ▲

* Experimental calculation.

CottonInfo **Information** *when you need it*

Southern NSW crop check





CottonInfo **Information** *when you need it*

Balonne crop check

DATE – 15 November 2022

ST GEORGE AIRPORT

Download

Date range: 10 October, 2022 to 15 November, 2022 (37 days).

Summary | Seasonal comparison

	2022	2021	2020	2019	2018	10 year mean
Base 12	340.3	423.5 ▲	423.8 ▲	437.3 ▲	494.9 ▲	438.5 ▲
DD1532*	196.3	267.6 ▲	270.6 ▲	262.7 ▲	320.3 ▲	273.3 ▲
Cold shock days (≤ 11°C)	7	5 ▼	3 ▼	10 ▲	1 ▼	4.8 ▼
Days above 36°C	0	3 ▲	2 ▲	4 ▲	8 ▲	4.1 ▲
Nights above 25°C	0	0	0	1 ▲	2 ▲	0.6 ▲
Days above 40°C	0	1 ▲	0	0	3 ▲	0.9 ▲
Total rainfall (mm)	134.8	85.6 ▼	47.6 ▼	4.6 ▼	40.4 ▼	48.5 ▼
Total radiation (MJ/m^2)	731.1	790.1 ▲	832.1 ▲	894.6 ▲	827.9 ▲	767.1 ▲
Average temperature (°C)	20.9	23.3 ▲	23.4 ▲	23.4 ▲	25.3 ▲	23.6 ▲

* Experimental calculation.

Climate observations and data are obtained via the State of Queensland SILO patched point dataset.

Accumulated day degree 'targets' after seed imbibed

Cotton development	DD Base 12** (Industry standard)	Experimental DD 1532
Emergence	80	50
First square	505^	339
First flower	777^	584
First open boll	1527^	1077

^ Please note that DD Base 12 targets to first square, first flower and first open boll will increase by 5.2 DD for EACH cold shock event - please adjust your target accordingly.

Targets relate to specfic developmental events.

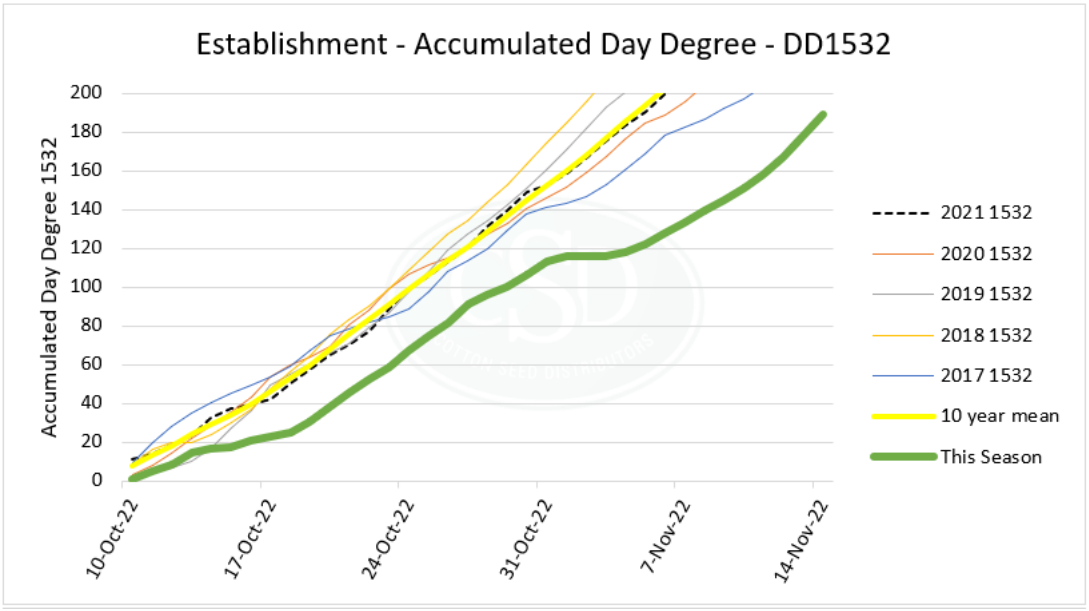
** **Source:** Australian Cotton Production Manual 2019 (page 8).

CottonInfo **Information** *when you need it*

Balonne crop check

Balonne

Season Total 1532 Day Degree Accumulation **196.30**



Day degree accumulation for the season has been slow with cold shocks (7) above the 10-year average (4.8) and average temperature nearly 3°C below the 10-year average. Combined with wet conditions (well above average) and restricted bed preparation, it has made for a slow start for crops. Surprisingly, the radiation accumulated is not that much below the 10-year average. While this means little at this stage of the season, researcher investigation into some of the phenomenal yields produced in central Qld last season, has identified an absence of extreme temperatures (hot and cold) and above average radiation for the season as being possible contributors to these results.

AREA	Balonne
Crop Stage	• Some planting still happening and ranges through to 7-8 leaf, Bulk of crops around the 4 leaf stage. • Replant area has been minor and due to inundation or hail for a few.
Irrigation	• Plenty of water. • Some later plant crops to be watered up, most advanced likely to be irrigated in the next week.

CottonInfo **Information** *when you need it*

Balonne crop check

Insects/Beneficials	• Light mirid pressure, occasional thrips – generally near wheat crops • Helicoverpa egg lays evident
Weeds	• Generally ok although some pressure where residuals were unable to be applied prior to crop. • Fleabane in most crops and targeted with cultivation but some escapees in plant lines.
Disease	• BRR in heavier fields and some Rhizoctonia. • Fusarium evident in fields with history. • Crops starting to grow through these with improved temperatures
Comments	• Generally an Ok start despite wet and cool conditions and most plant stands good and consistent.

Seasonal Day Degree and historical data is sourced from Cotton Seed Distributors Day Degree Calculator found at www.csd.net.au/ddc. For more specific day degree and crop management detail for your farm, field and variety check out CottonTracka® at www.cottontracka.com.au

CottonInfo **Information** *when you need it*

Darling Downs crop check

DATE – Friday 11 November 2022 (CC1)

Season Total 1532 Day Degree Accumulation **181.35**

DALBY AIRPORT

Download

Date range: 10 October, 2022 to 22 November, 2022 (44 days).

Summary | Seasonal comparison

	2022	2021	2020	2019	2018	10 year mean
Base 12	361.9	435.5 ▲	470.7 ▲	495.8 ▲	465.6 ▲	457.4 ▲
DD1532*	177.0	262.0 ▲	280.8 ▲	277.8 ▲	289.1 ▲	266.9 ▲
Cold shock days (≤ 11°C)	16	7 ▼	8 ▼	12 ▼	1 ▼	8.2 ▼
Days above 36°C	0	0	5 ▲	7 ▲	3 ▲	3.0 ▲
Nights above 25°C	0	0	0	0	0	0.0
Days above 40°C	0	0	0	0	0	0.1 ▲
Total rainfall (mm)	77.6	265.8 ▲	51.8 ▼	8.6 ▼	152.6 ▲	76.3 ▼
Total radiation (MJ/m^2)	886.7	861.0 ▼	991.6 ▲	1064.9 ▲	949.3 ▲	884.5 ▼
Average temperature (°C)	19.6	21.7 ▲	22.5 ▲	22.7 ▲	22.5 ▲	22.0 ▲

* Experimental calculation.

Climate observations and data are obtained via the State of Queensland SILO patched point dataset.

CottonInfo **Information** *when you need it*

Darling Downs crop check

AREA	Darling Downs
Crop Stage	• Emergence to 5 leaf/3 nodes • Not planted – 6 leaf • cotyledon
Irrigation	• not needed yet • may need to flush soon to maintain plant stand • haven't needed due to rain
Insects/Beneficial	• low to moderate thrips • no thrip damage yet • low level wire worm and earwig damage in last years sorghum blocks • symphylids
Weeds	• Fleabane and FTRG • Vines • Fleabane control has been difficult • Pre emerge herbicides working well • Clean after planting sprays
Weather	• Wet still in some areas • Bit cold and rough on crops planted 2 weeks ago • Good conditions for dryland • Still wet in some areas but good to get a couple of weeks with dry weather • Too cold • Temps below average. Earlier crops taking 10 days to emerge. Later planted crops taking 4 days to emerge • Longest dry spell – hasn't rained in 10 days • Access to farms is difficult with lying water

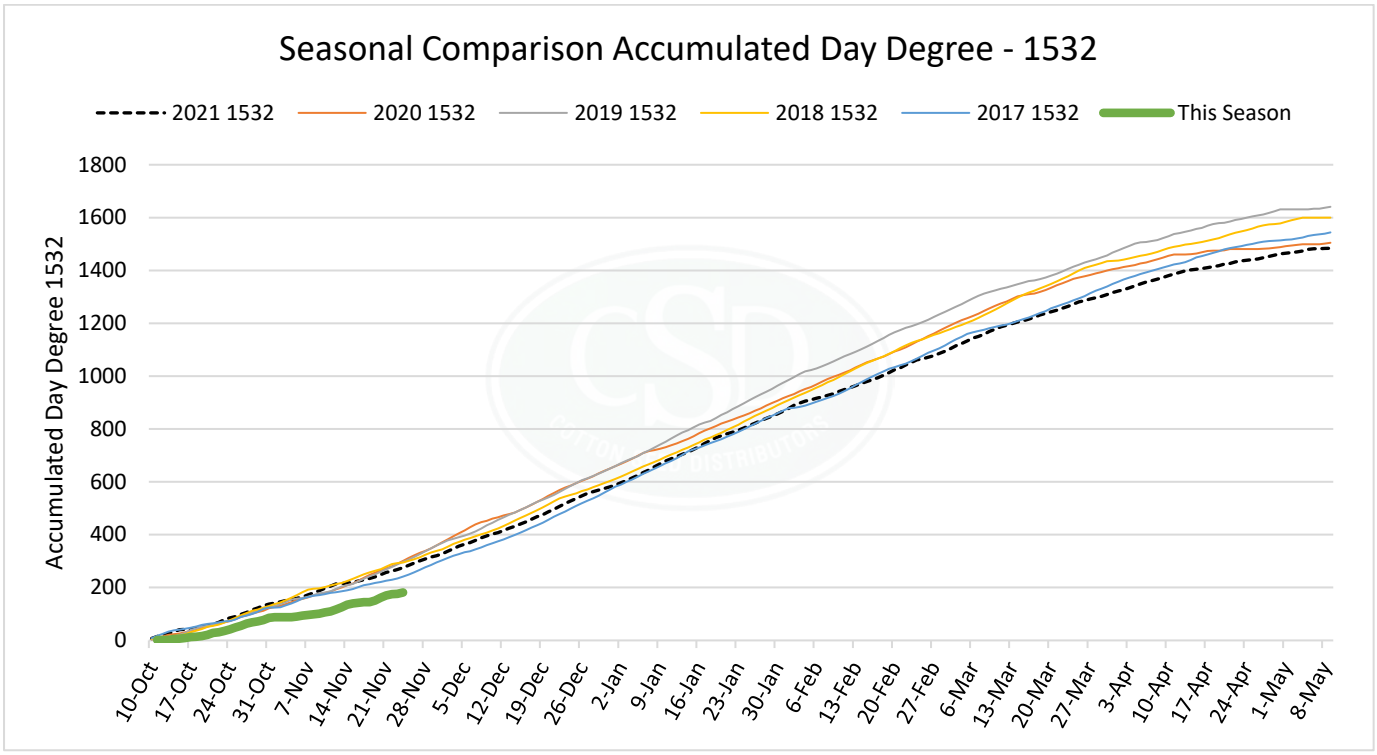
CottonInfo **Information** *when you need it*

Darling Downs crop check

Disease	• Seedling disease in back to back cotton • Very low • Low levels of rhizoctonia and pythium • The usual suspects • None to report yet
Comments	• Irrigated about 90% planted but dryland about 50% olanted • Couple of field of full replant • Some patch replant needed • Early stands are a little light on with 7-8 plants/mt • Much better seedling establishment this year verses last year • Tough slow start lining up for another late crop • Some heat and sun needed and perhaps 5-10 mm • More replant due to cold, poor strike and uneven establishment

CottonInfo **Information** *when you need it*

Darling Downs crop check



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CottonInfo **Information** *when you need it*

Macintyre crop check

DATE – 15 November 2022

GOONDIWINDI AIRPORT

Download

Date range: 24 October, 2022 to 14 November, 2022 (22 days).

Summary | Seasonal comparison

	2022	2021	2020	2019	2018	10 year mean
Base 12	198.6	238.2 ▲	239.6 ▲	260.5 ▲	288.7 ▲	256.9 ▲
DD1532*	113.5	151.3 ▲	150.6 ▲	158.9 ▲	182.0 ▲	160.6 ▲
Cold shock days (≤ 11°C)	5	2 ▼	2 ▼	5	1 ▼	2.7 ▼
Days above 36°C	0	1 ▲	0	3 ▲	5 ▲	2.4 ▲
Nights above 25°C	0	0	0	0	0	0.0
Days above 40°C	0	0	0	0	2 ▲	0.4 ▲
Total rainfall (mm)	45.1	66.6 ▲	21.2 ▼	0.9 ▼	16.5 ▼	26.8 ▼
Total radiation (MJ/m^2)	498.4	449.7 ▼	509.6 ▲	541.5 ▲	525.4 ▲	468.9 ▼
Average temperature (°C)	20.7	22.7 ▲	22.8 ▲	23.5 ▲	25.1 ▲	23.5 ▲

* Experimental calculation.

Climate observations and data are obtained via the State of Queensland SILO patched point dataset.

Accumulated day degree 'targets' after seed imbibed

Cotton development	DD Base 12** (Industry standard)	Experimental DD 1532
Emergence	80	50
First square	505^	339
First flower	777^	584
First open boll	1527^	1077

* Please note that DD Base 12 targets to first square, first flower and first open boll will increase by 5.2 DD for EACH cold shock event - please adjust your target accordingly.

Targets relate to specfic developmental events.

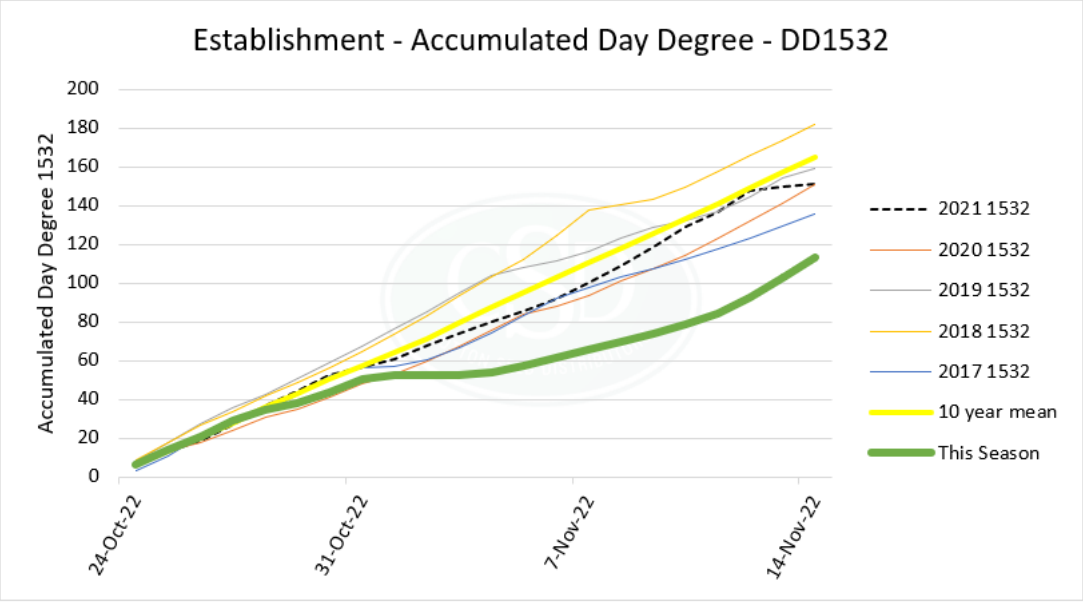
** **Source:** Australian Cotton Production Manual 2019 (page 8).

CottonInfo **Information** *when you need it*

Macintyre crop check

MacIntyre

Season Total 1532 Day Degree Accumulation **113.50**



Day degrees (1532 system) for the season have been slow to accumulate, which is not surprising with the average temperature being nearly 3°C below the 10-year average. This, when combined with the 5 cold shocks (below 12°C and nearly double the 10-year average of 2.7) has made for slow growing conditions. Interestingly, the solar radiation so far is above the 10-year average and the previous season. Researcher investigation into some of the phenomenal yields produced in central Qld last season, has identified an absence of extreme temperatures (hot and cold) and above average radiation for the season as being possible contributors to these results.

AREA	Macintyre Valley
Crop Stage	• Estimates are 85-95% of irrigated crop has been planted with <5% replant although this varies from whole fields to small sections (often tail drain areas). Dryland area mostly still being planted. Crops range from emerging to 4-5 leaf. • Some earlier sown crops resulted in poor establishment and “weak” plant stands.
Irrigation	• Some crops have been flushed up making for slow growth with the cold weather. • Water supplies have been described as “full”, “good”, “plentiful” etc.

CottonInfo **Information** *when you need it*

Macintyre crop check

Insects/Beneficial	• Low to moderate thrip pressure but of no real concern.
Weeds	• Planting sprays keeping things in check however some getting through (fleabane) and likely to require cultivation.
Disease	• BRR and other seedling diseases present especially on earlier crops • Back-to-back fields and those with history showing disease
Environment	• Wet conditions have hampered field preparation and sowing opportunities. Farm access difficult for some. • Mild and cool start
Comments	• "Crop extremely slow out of the ground with the cold snap"

Seasonal Day Degree and historical data is sourced from Cotton Seed Distributors Day Degree Calculator found at www.csd.net.au/ddc. For more specific day degree and crop management detail for your farm, field and variety check out CottonTracka® at www.cottontracka.com.au

CQ crop check

DATE:29/11/2022

AREA	Central Queensland
Crop Stage	• Crops range from planting, emerging, 10 – 22 nodes • Some earlier sown crops are well into flowering
Irrigation	• Had first in crop irrigation in the earlier planted cotton • Some later planted crops to be watered up. • Water supplies have been described as “full”, “good”, “plentiful” etc.
Insects/Beneficial	• Increasing mirid activity – insecticide being applied in some paddocks • Small pressure of mites and aphids • Lady beetles, spiders, lacewings, red and blue beetles
Weeds	• Moderate level • Volunteer sorghum and mung beans in some fallow paddocks • Parthenium and sesbania • Good conditions for dryland • Cultivation and side dressing in earlier planted cotton
Disease	• Back-to-back fields and those with history showing disease • Black root rot and verticillium wilt
Environment	• Wet conditions have hampered field preparation and sowing opportunities. • Mild and cool start • Temps below average • Earlier crops taking 10 days to emerge • Later planted crops taking 4 days to emerge

Increased pressure in the field for Fusarium Wilt this season: disease surveys

Linda Smith from QDAF recently visited CQ to carry out targeted Disease Surveys and has reported back her findings below:

Five fields (2 farms) were surveyed on the 28 Nov 2022 in Callide Dawson as part of our targeted surveys to support research to understand practices that support the development of disease suppressive soils. One field with a known history of Fusarium wilt disease was determined to have an average incidence of 16%. Anything that slows down germination and seedling growth, which includes cool and/or wet weather, favours infection by seedling disease and Fusarium wilt. An additional drain on cotton during the establishment phase is reniform nematode which is prevalent in cotton fields in Callide Dawson. This plant-parasitic nematode feeds on plant roots causing damage to the plant resulting in stunting and generally poor plant growth. Root samples collected from cotton during surveys confirmed infection of the parasite in seedlings (Fig 2). Unfortunately, if the cool and wet conditions continue, there is likely to be significant Fusarium wilt disease observed this season across several cotton growing regions.

CQ crop check

Fig 1. Cotton seedlings displaying symptoms of Fusarium wilt including stunting, wilting, leaf chlorosis and necrosis

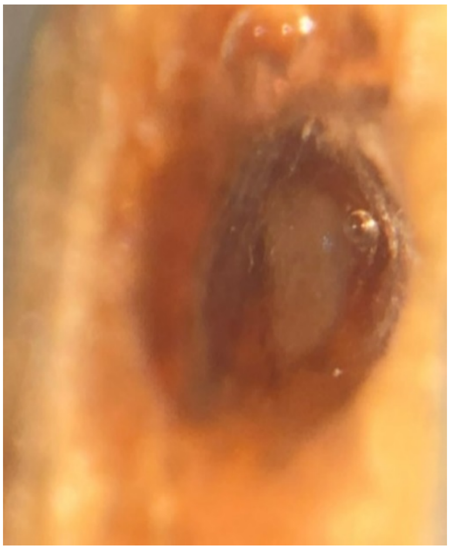


Fig 2. Reniform nematode observed (using a dissecting microscope) in a seedling cotton root. Reniform nematode is prevalent in cotton fields in Callide Dawson.

DISEASES
FUSARIUM WILT

Sponsored by INNOVATE AG

Fusarium wilt

Pathogen: *Fusarium oxysporum* f. sp. *vasinfectum* (Fov)

Symptoms

External symptoms include stunted growth and dull and wilted leaves followed by leaf yellowing or browning and eventual death from the top of the plant. Some affected plants may reshoot from the base of the stem. These symptoms most commonly become apparent in the seedling phase when plants are beginning to develop true leaves, or after flowering during boll fill. Symptoms can appear as individual plants or as a small patch, often near the tail drain or low-lying areas of the field.

Internal symptoms can be checked by cutting the stem. Infected plants will reveal continuous brown discolouration of the stem tissues from the main root up into the stem. The discolouration is similar to Verticillium wilt but usually appears as continuous browning rather than flecking.

Favoured by

- Use of susceptible varieties.
- Stresses in the crop – e.g. waterlogging, root damage through cultivation, cool and wet growing conditions.
- Poor farm hygiene on and between farms and districts.

Host range

The Fov pathogen is specific to cotton but can also live in the residues of most non-host crops. Bladder ketmia, sesbania pea, dwarf amaranth, bellvine and wild melon are alternative weed hosts that show no external symptoms. These weeds may act as an on-farm reservoir for the disease and need to be constantly managed.

IDM tactics

- If your farm is free from this disease, keep it that way! Ensure all staff and contractors practice good farm hygiene and Come Clean. Go Clean.
- Select varieties with a high F rank and use BION® Plant Activator.
- If possible, delay planting until soil temperatures are 16°C and rising.
- Manage the crop to avoid stresses such as waterlogging, over-fertilisation and root damage.
- Avoid mechanical inter-row cultivations if possible, as this can cause root damage that provides an entry point for the pathogen.

Fusarium wilt: Wilting and dying plants are often observed at the tail drain. (Linda Smith, Qld DAF)

- Regularly inspect fields for early detection and containment of isolated outbreaks. Send any suspect samples to Dr Linda Smith (Qld DAF).
- Isolate affected areas from irrigation flows and traffic.
- Minimise tail water from affected fields.
- After harvest, root pull and retain crop residues on the surface for at least a month (60-120 days if possible) prior to incorporation. Raking and burning the whole field is likely to spread any pathogen present.
- Fusarium can survive on non-host crop residues. Avoid green manure crops as this returns organic matter to the field which Fusarium can survive on as a saprophyte.
- Rotate with non-hosts for up to 3 years. Hosts such as legumes can potentially increase disease. A summer sorghum/maize-fallow-cotton rotation can increase cotton plant survival, reduce disease incidence and increase yield in the third year compared to continuous cotton.

CottonInfo videos:
Managing Fusarium wilt https://youtu.be/Cygy6XiRDcw
Post-harvest management of Fusarium wilt https://youtu.be/NGeQ4FTH7IM

Dark brown discolouration observed in cross sections of cotton stems infected with Fov. (Janelle Montgomery, CottonInfo)

106 COTTON PEST MANAGEMENT GUIDE 2022–23

For more information in Integrated Disease Management for Fusarium Wilt consult with the Cotton Production Manual Guide 2022.
Available to access and download on the CottonInfo website: ***CPMG 2022 FOR WWW.pdf (cottoninfo.com.au)***

CQ crop check

Day degrees (1532 system) for the season have been slow to accumulate, which is not surprising with the average temperature being nearly 2-3°C below the 10-year average.

This, when combined with the 3-5 extra cold shocks has made for slow growing conditions.

Callide Dawson

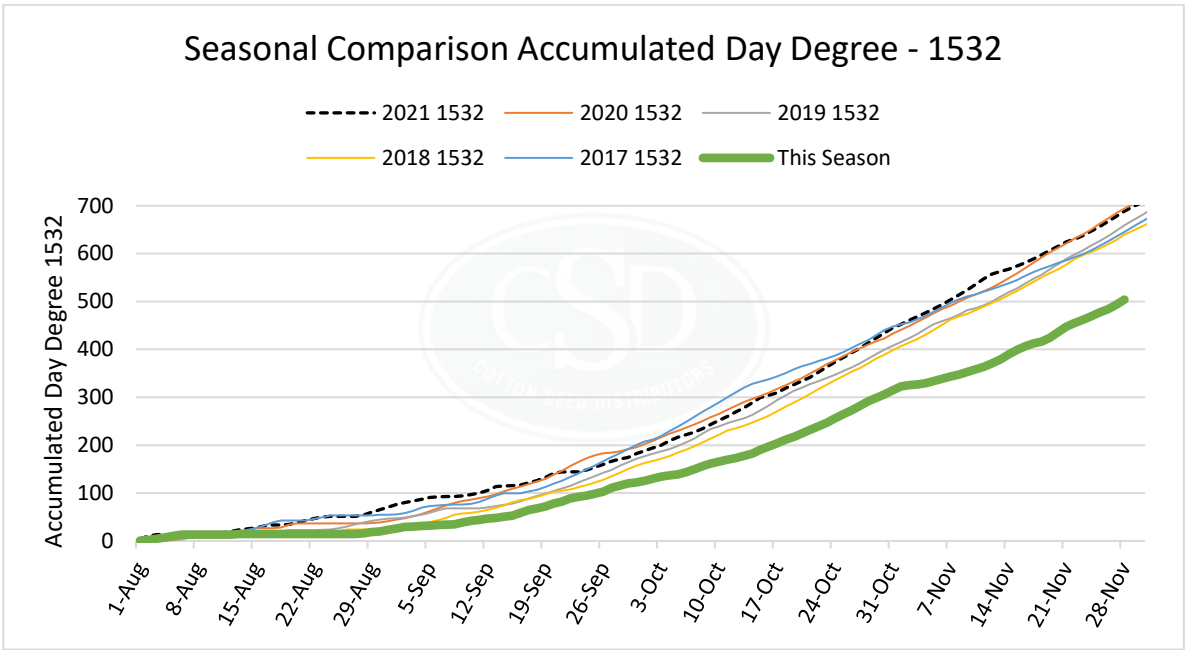
Date range: 1 August, 2022 to 28 November, 2022 (120 days).

Summary | Seasonal comparison

	2022	2021	2020	2019	2018	10 year mean
Base 12	1023.7	1237.5 ▲	1264.3 ▲	1282.2 ▲	1234.3 ▲	1215.9 ▲
DD1532*	504.0	688.2 ▲	694.1 ▲	659.3 ▲	639.4 ▲	634.7 ▲
Cold shock days (≤ 11°C)	47	43 ▼	36 ▼	47	50 ▲	46.0 ▼
Days above 36°C	1	3 ▲	9 ▲	16 ▲	10 ▲	9.2 ▲
Nights above 25°C	0	0	0	0	0	0.0
Days above 40°C	0	0	0	1 ▲	0	0.6 ▲
Total rainfall (mm)	200.4	264.8 ▲	168.8 ▼	123.2 ▼	264.3 ▲	167.9 ▼
Total radiation (MJ/m^2)	2107.9	2275.8 ▲	2431.0 ▲	2561.4 ▲	2529.4 ▲	2214.1 ▲
Average temperature (°C)	19.6	21.4 ▲	21.7 ▲	21.6 ▲	21.0 ▲	21.1 ▲

* Experimental calculation.

CQ crop check



Central Highlands

CottonInfo **Information** *when you need it*

CQ crop check

Date range: 1 August, 2022 to 28 November, 2022 (120 days).

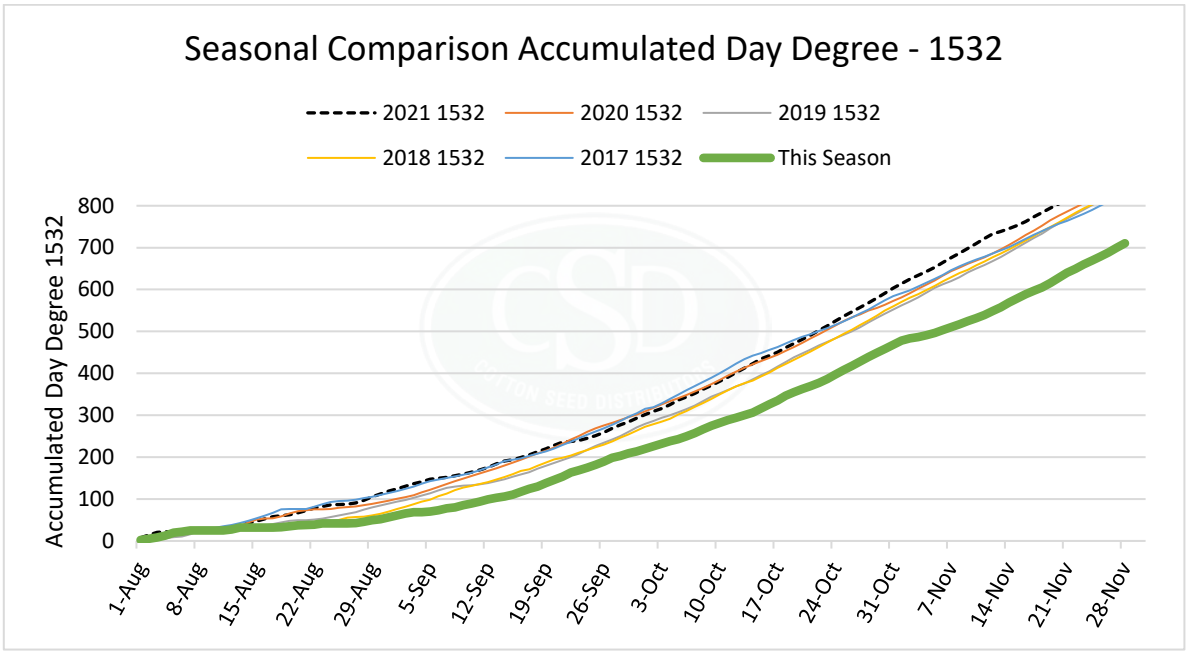
Summary | Seasonal comparison

	2022	2021	2020	2019	2018	10 year mean
Base 12	1204.2	1401.9 ▲	1396.2 ▲	1415.8 ▲	1406.2 ▲	1348.1 ▲
DD1532*	710.4	887.9 ▲	862.1 ▲	848.2 ▲	844.6 ▲	813.1 ▲
Cold shock days (≤ 11°C)	19	16 ▼	24 ▲	30 ▲	27 ▲	24.4 ▲
Days above 36°C	6	9 ▲	10 ▲	24 ▲	17 ▲	13.0 ▲
Nights above 25°C	0	0	0	0	0	0.3 ▲
Days above 40°C	0	0	0	2 ▲	3 ▲	0.9 ▲
Total rainfall (mm)	314.0	253.8 ▼	147.2 ▼	6.8 ▼	120.2 ▼	135.1 ▼
Total radiation (MJ/m^2)	2258.0	2361.8 ▲	2519.9 ▲	2641.7 ▲	2619.2 ▲	2286.1 ▲
Average temperature (°C)	21.7	23.5 ▲	23.3 ▲	23.5 ▲	23.2 ▲	22.9 ▲

* Experimental calculation.

CottonInfo **Information** *when you need it*

CQ crop check



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CottonInfo **Information** *when you need it*

Darling Downs crop check

DATE – Wednesday 30 November 2022 (CC2)

DALBY AIRPORT

Download

Date range: 10 October, 2022 to 29 November, 2022 (51 days).

Summary | Seasonal comparison

	2022	2021	2020	2019	2018	10 year mean
Base 12	434.1	514.0 ▲	578.1 ▲	603.1 ▲	540.8 ▲	548.3 ▲
DD1532*	218.5	315.3 ▲	348.1 ▲	348.1 ▲	332.2 ▲	324.9 ▲
Cold shock days (≤ 11°C)	19	7 ▼	8 ▼	12 ▼	4 ▼	9.0 ▼
Days above 36°C	0	0	9 ▲	9 ▲	3 ▲	4.3 ▲
Nights above 25°C	0	0	0	0	0	0.0
Days above 40°C	0	0	0	0	0	0.1 ▲
Total rainfall (mm)	77.7	294.4 ▲	51.8 ▼	11.4 ▼	158.8 ▲	85.9 ▲
Total radiation (MJ/m^2)	1020.2	962.4 ▼	1184.0 ▲	1253.6 ▲	1143.4 ▲	1035.4 ▲
Average temperature (°C)	19.9	21.9 ▲	23.1 ▲	23.3 ▲	22.5 ▲	22.4 ▲

* Experimental calculation.

Climate observations and data are obtained via the State of Queensland SILO patched point dataset.

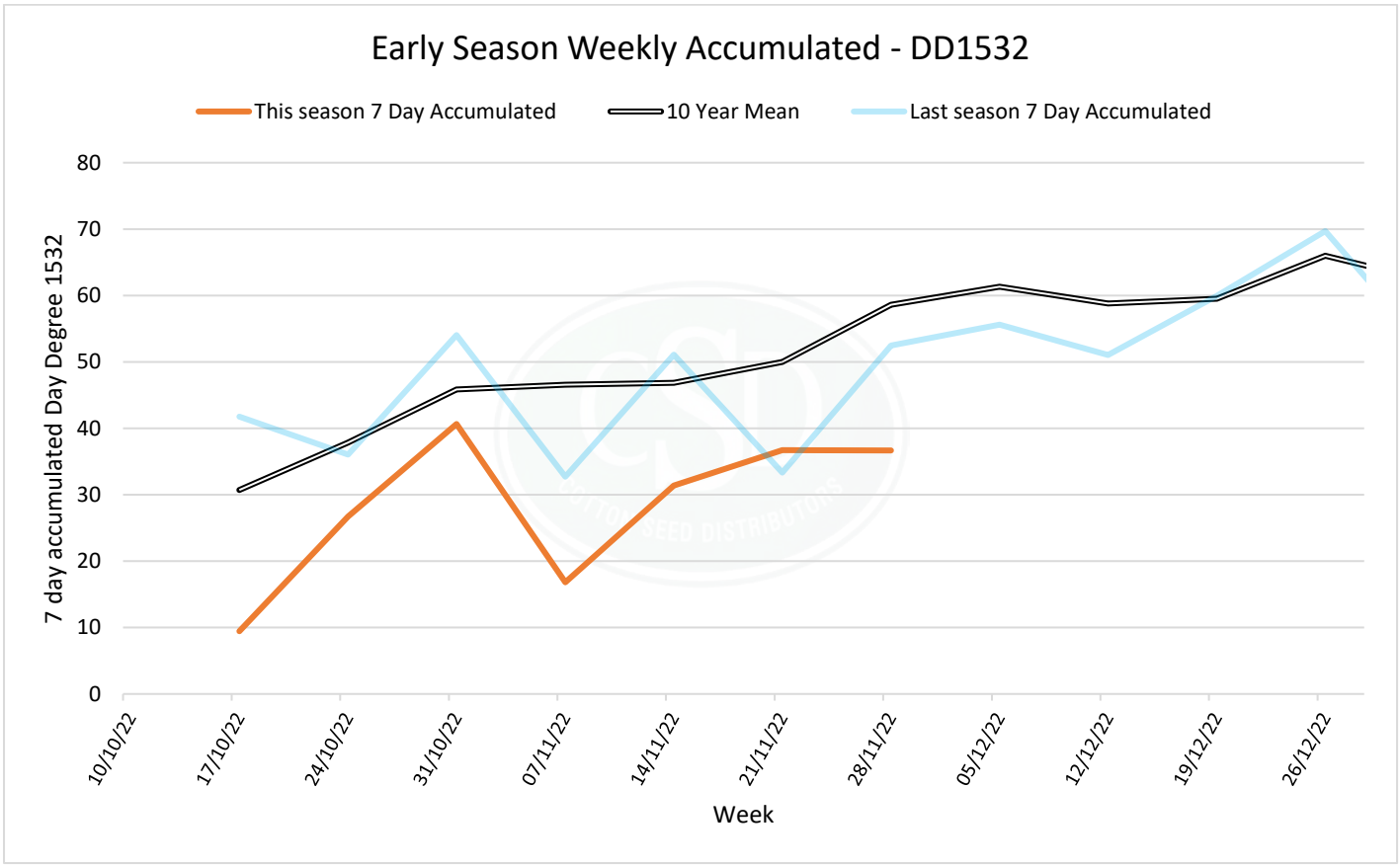
CottonInfo **Information** *when you need it*

Darling Downs crop check

Topic	Darling Downs
Crop Stage	• Emerging to 5 nodes
Irrigation	• Overhead irrigator shave been running • Flood irrigators looking to flush soon if no rain received shortly
Insects/Beneficial	• Just starting to see heliothis egg lays • Thrips about in varying numbers • Harvest may increase thrip numbers over the coming weeks
Weeds	• Fleabane and FTRG have emerged or established. Proving troublesome to control • Vines and broadleaves are emerging now as well
Disease	• Black root rot causing a few problems in blocks with cotton history • Low fusarium at this stage
Comments	• Looking for rain now. How things have changed • Tough conditions for little plants. Plant lines have cracked with the hot and windy days

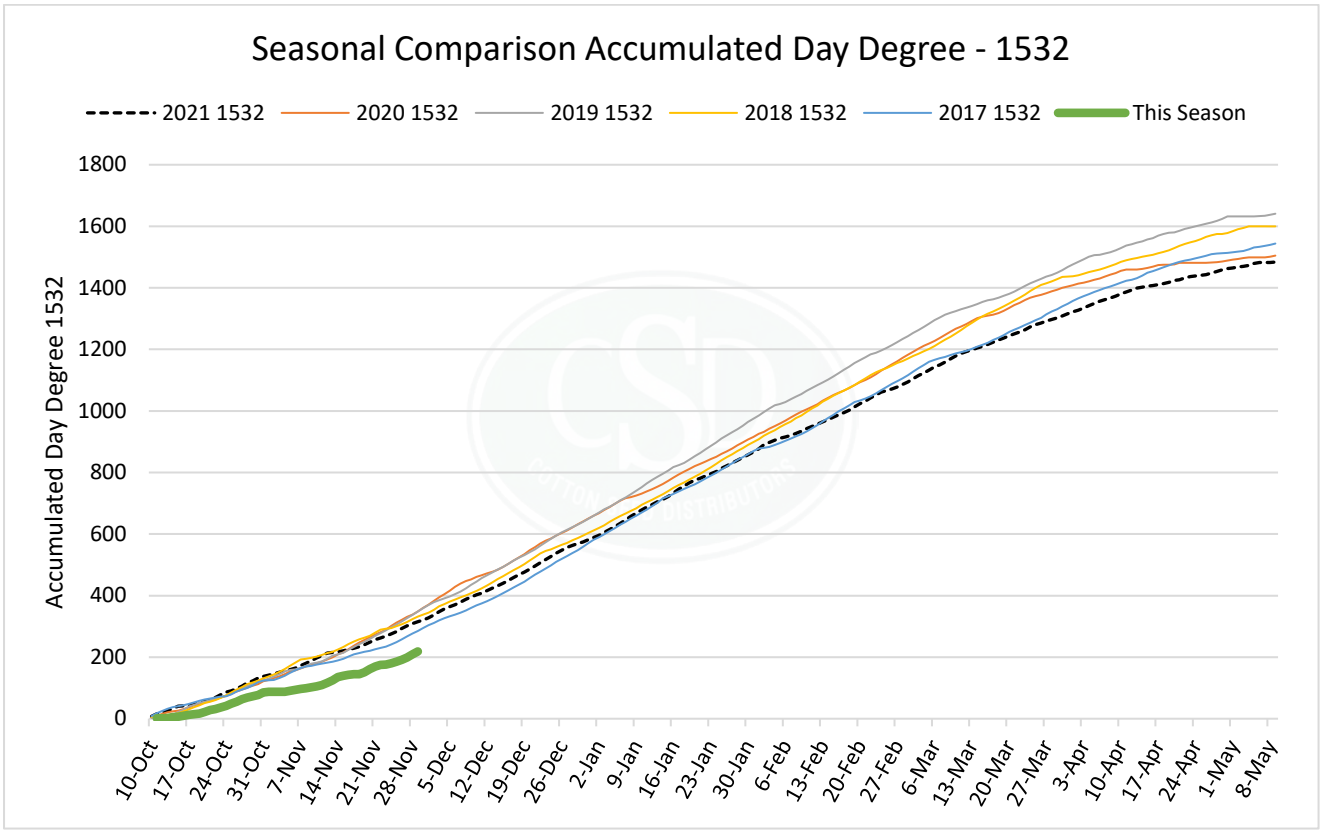
CottonInfo **Information** *when you need it*

Darling Downs crop check



CottonInfo **Information** *when you need it*

Darling Downs crop check



Seasonal Day Degree and historical data is sourced from Cotton Seed Distributors Day Degree Calculator found at www.csd.net.au/ddc. For more specific day degree and crop management detail for your farm, field and variety check out CottonTracka® at www.cottontracka.com.au