# Australian Cotton Presentation

West Texas Ag Chem Meeting

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Cotton Seed Distributors

14 September 2023

# Introduction

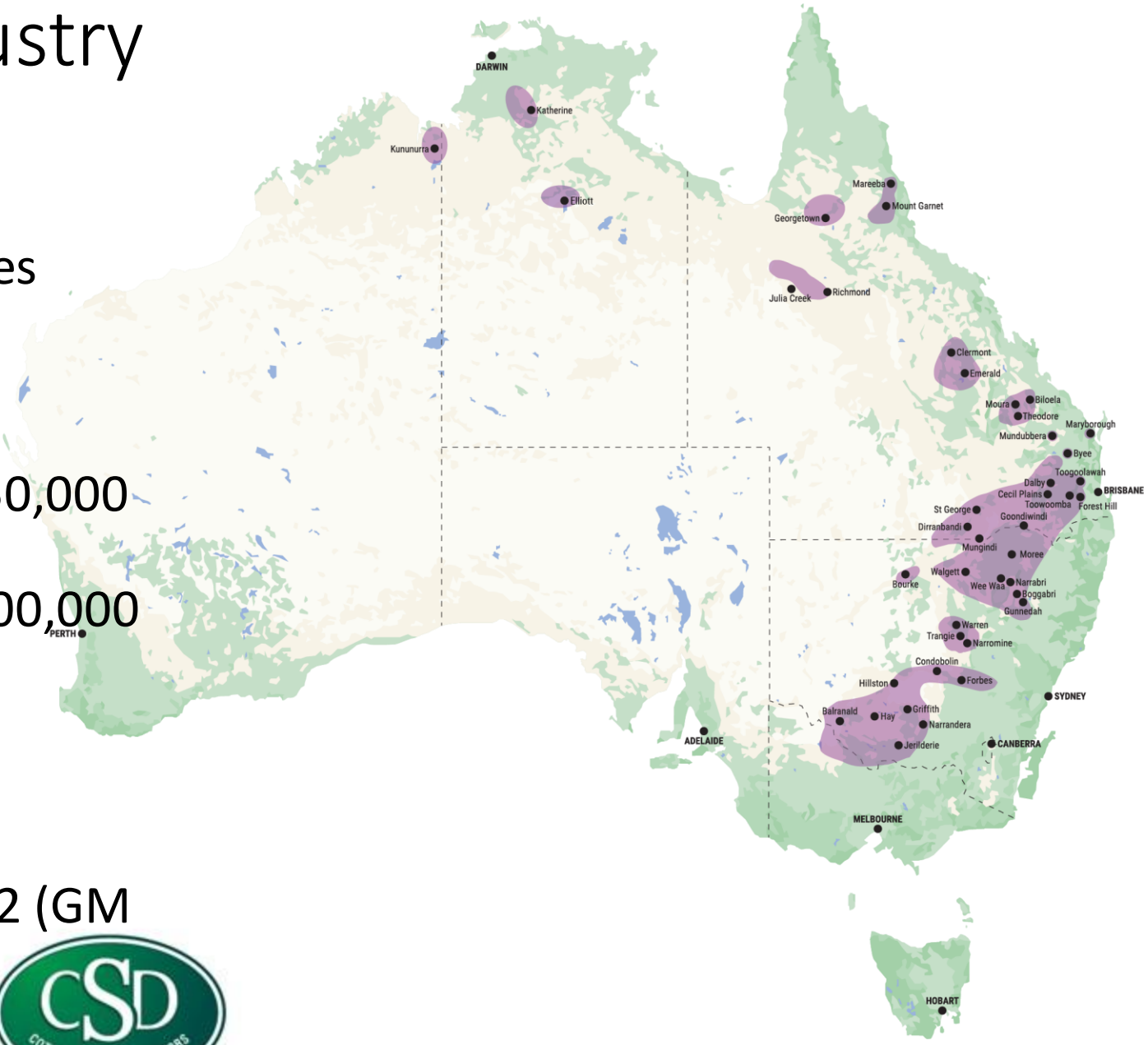
- Members of Cotton Seed Distributors (CSD) Extension Team
- Industry representatives who work closely with growers, to extend information and get the best out of their cotton crops
- Visiting to learn more about US cotton systems and **collaborate** (e.g. WUE)
- Reciprocal trip following a visit by Cotton Incorporated and US researchers early 2023

# Who is CSD and what do we do?

- Member owned, not for profit company
- Board of Directors (10) – 7 growers
- Started by a group of like-minded growers in 1967 – US connections!
- Numerous teams – seed increase, lab and QA, production, extension, growth and development, research, digital and data
- Cotton Breeding Australia (CBA) – CSIRO
- Global industry partnerships – Bayer, Syngenta
- Working with growers to get the best out of the crop

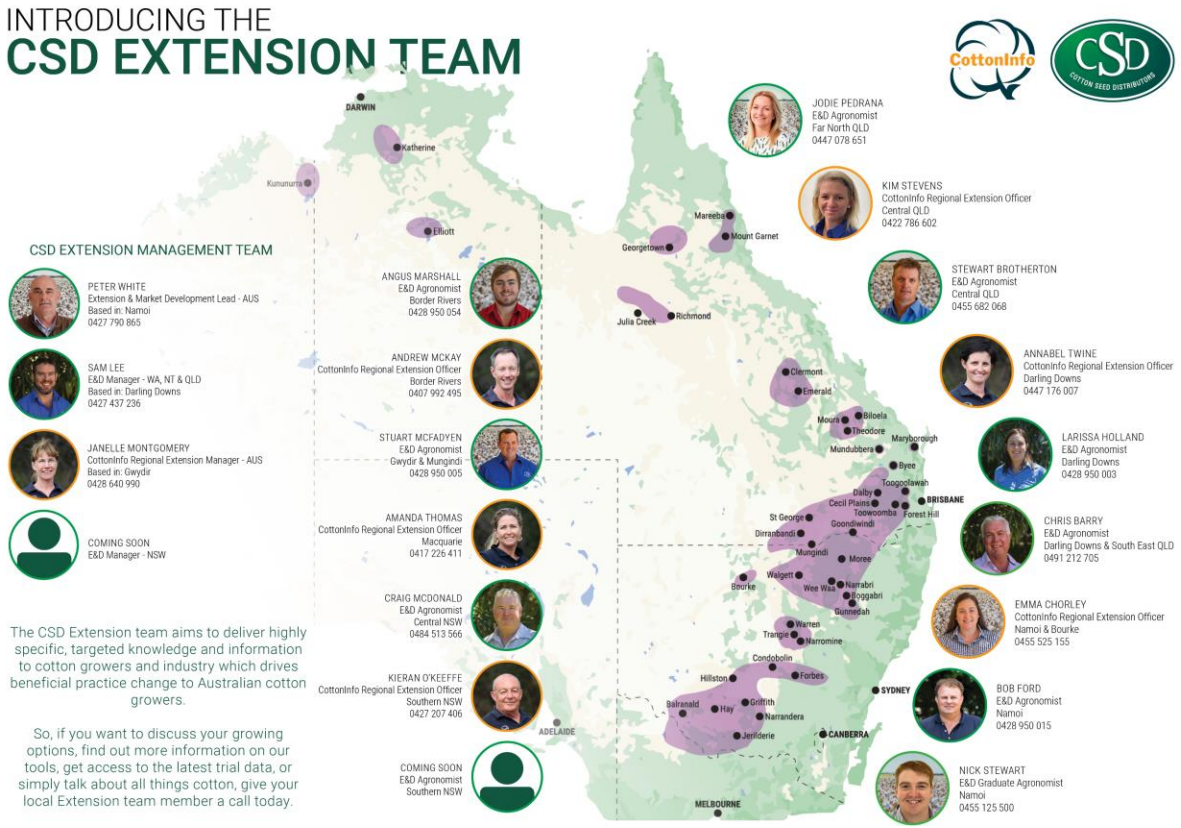
# The Australian Cotton Industry

- 1500 Australian farmers grow cotton
- Range of climatic regions
- Average production of 3 to 5 million bales annually
- Average annual production irrigated – 700,000 acres approx.
- Average annual production dryland – 250,000 acres approx.
- Total production range – 220,000 to 1,500,000 acres (seasonally dependant)
- Average irrigation requirement 27 to 32 inches/acre – majority surface water
- 50% increase in WUE since 1992
- 95% reduction insecticide use since 1992 (GM and IPM)




Source: Cotton Seed Distributors, Cotton Australia, CRDC

# Australian Cotton Industry Extension Team




- Team of 20 industry experts from a wide range of backgrounds
- Geographic spread to cover entire cotton industry
- Extensive variety trial program
- Ambassador Network - 70+ growers/season, 8 seasons
- Data collection at various crop stages
- Extensive data network helping to deliver industry tools – 300,000+ data points and 2000+ sites!!

# Irrigated cotton in Australia

- 10-year average irrigated yield – 4.7 bales/acre
- Yields ranging from 3 bales/acre to 8 bales/acre
- Strong focus on WUE and NUE
- High levels of interaction with consultants and agronomists
- Intensively monitored crop e.g. growth regulators, nutrition
- Strong adoption of IPM and IWM
- All crops are picked – no cotton strippers in irrigation
- Strong use of automation, canopy temp sensors, soil water monitoring
- Wide range of irrigation - bankless, furrow/siphon, overhead systems

# Dryland (rain grown) cotton in Australia

- 10-year average dryland yield – 1.5 bales/acre
- Yields ranging from 0.5 bales/acre to 4.5 bales/acre
- Large range of soils and PAWC – heavy clay soils
- Cotton only planted into good moisture profile
- Highly variable climate and vast range of conditions
- In-crop rainfall ranging from 4 inches to 40 inches!
- Strong focus on water use efficiency and risk mitigation – opportunity planting
- Wide range of row configurations depending on farm system and wheel tracks e.g. 80”, double skip, wider spacings
- Fallow monitoring for moisture conservation - rotation
- Planting into cover crops and stubble retention to conserve moisture
- Use of automation/robotics e.g. SWARM Farm sprayers

# Skip-row irrigated cotton in Australia

- Controlled traffic systems – focus on wheel tracks for compaction
- Planting into long fallow for moisture retention – 2 to 3 years or longer
- Planting into cover crops and stubble retention to conserve moisture
- Used where soil fertility and moisture availability is non-optimal
- Multiple configurations – 60”, single skip etc.

# Dryland (rain grown) cotton in Australia

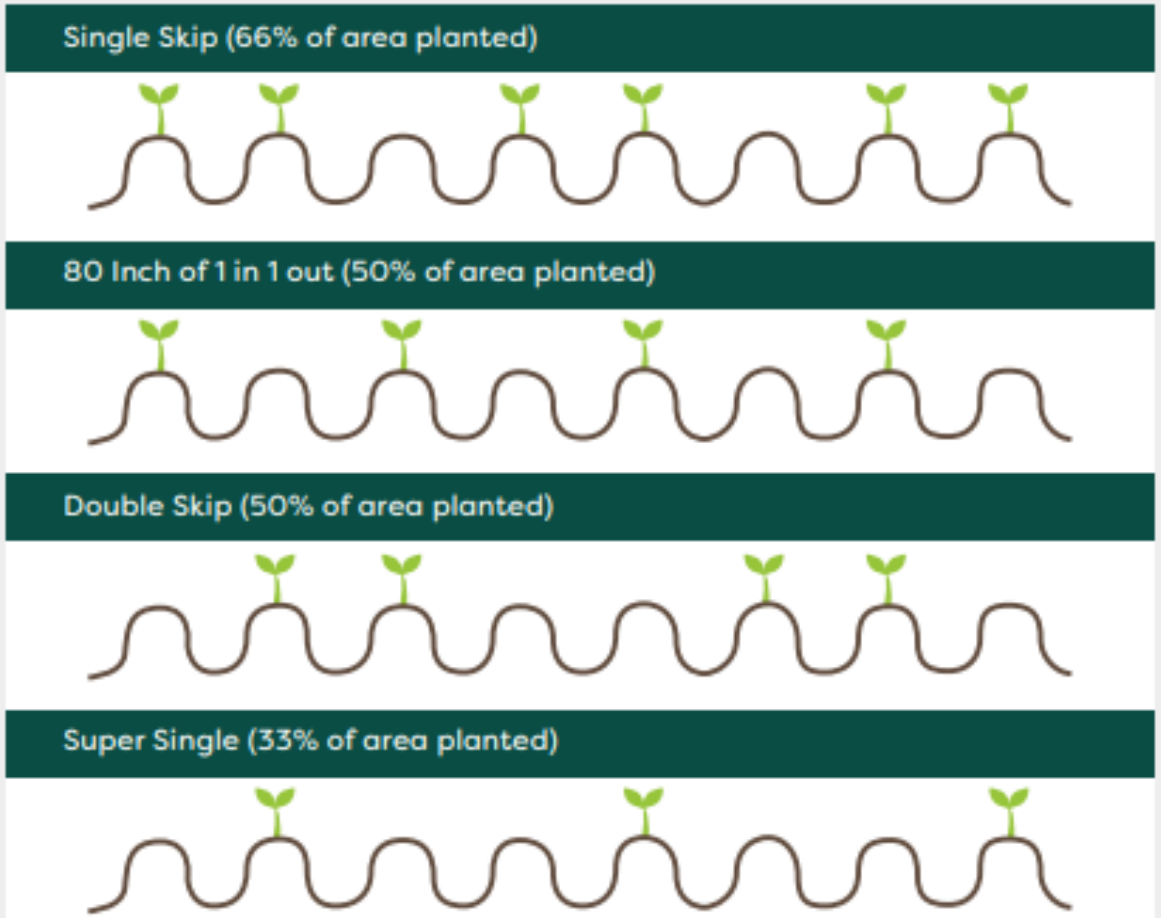


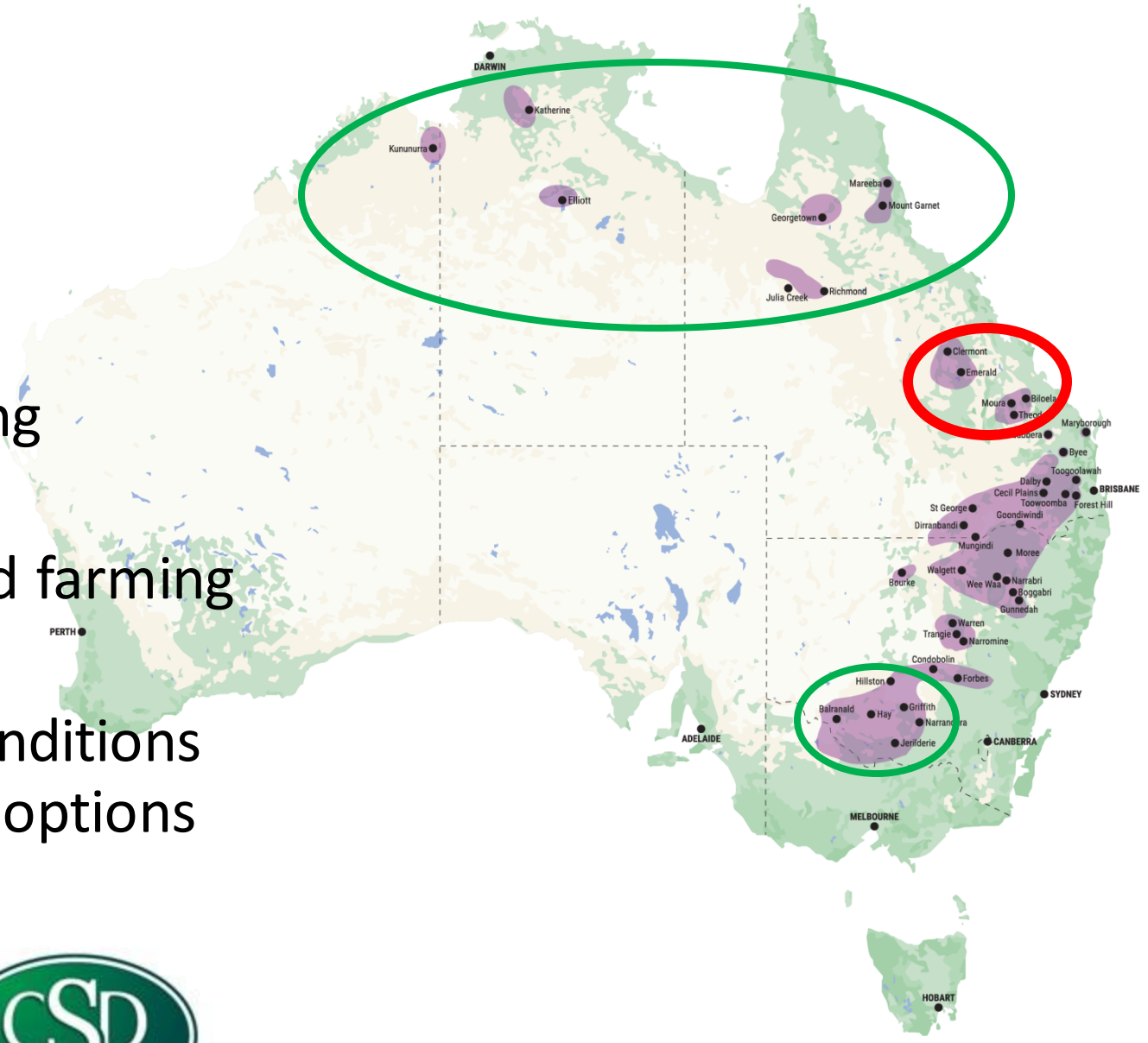

**Figure 3:** Row configuration guide

Wide row configuration – 10 foot spacing

CSD
COTTON SEED DISTRIBUTORS

# Expansion of the industry

- Bollgard technology has allowed for expansion of the industry
- Cotton moving south into rice growing regions
- Cotton moving north into grazing and farming country
- Technology and changing climatic conditions have led to growers looking at other options – LONG SEASON COTTON

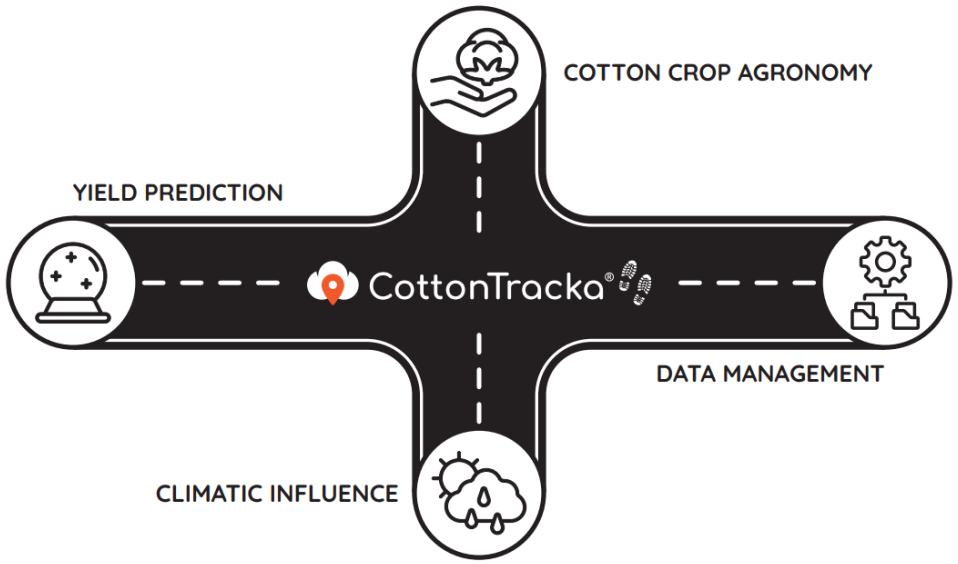


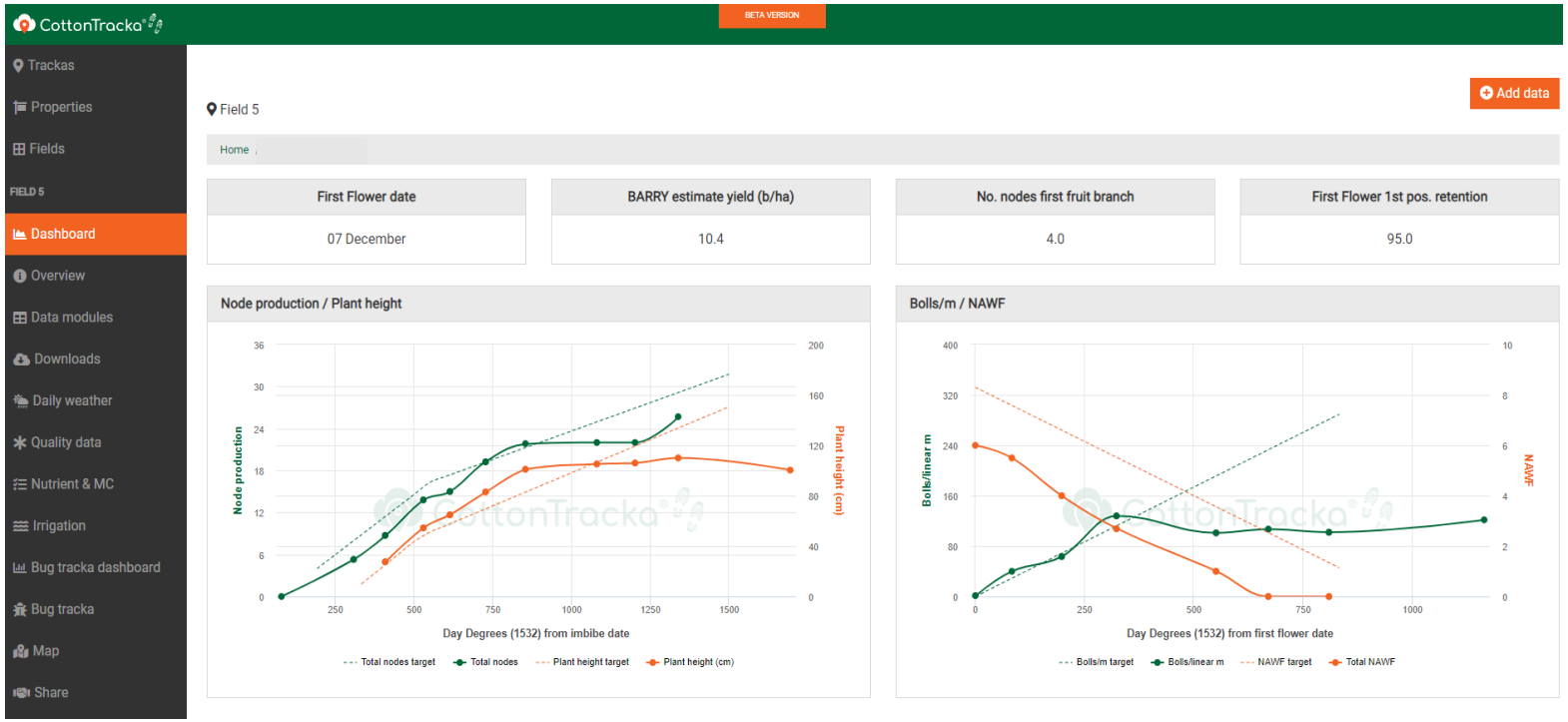
# Long season cotton

- Sustainable change for Central Queensland cotton
- ‘Walk away’ and ‘Long season’ cotton systems
- Water and nutritional efficiencies – WUE, NUE
- Use of tools and monitoring – canopy temp, soil water monitoring

# ‘Walk away’ cotton – “HOLD YOUR NERVE”

# CottonTracka®



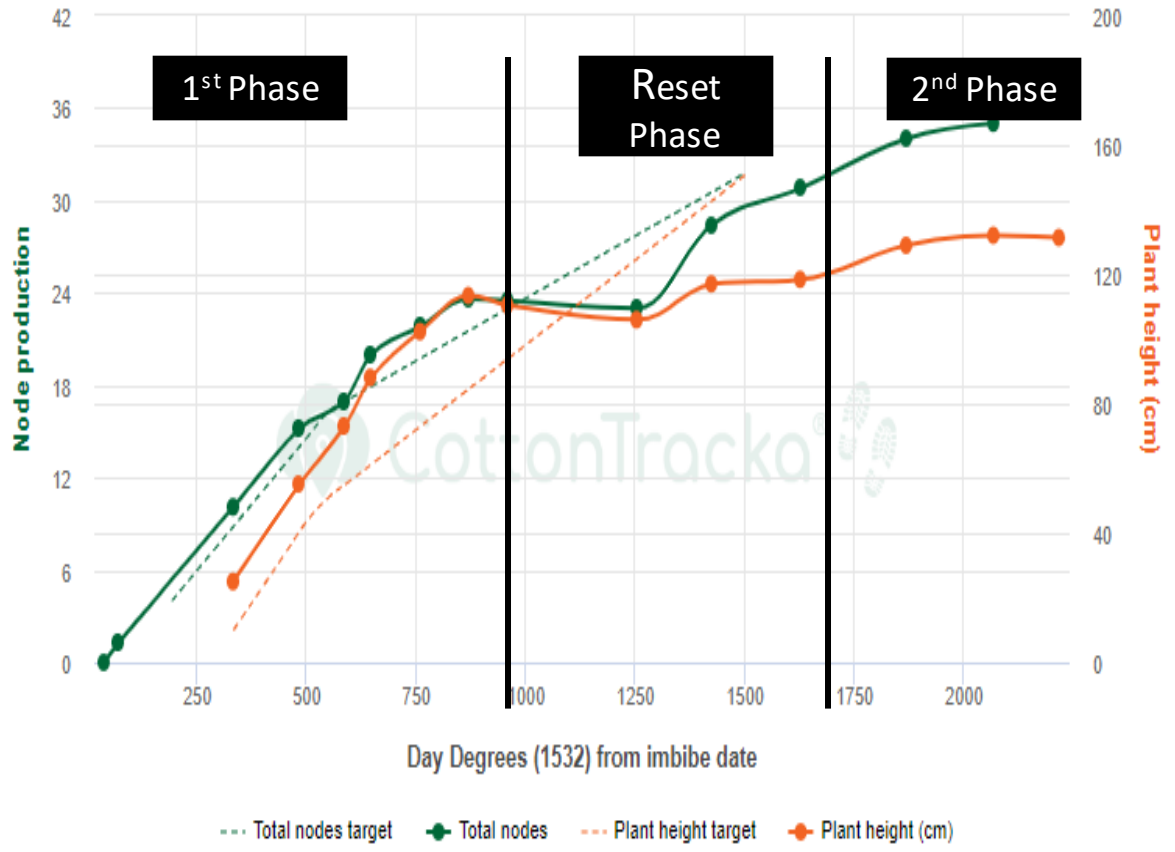

**CottonTracka** sits at the intersection of **cotton crop agronomy, data management** and **environmental influence**

It performs in real time, in your field, in your environment, transforming your field observations into easy to interpret visual displays to assist with field management

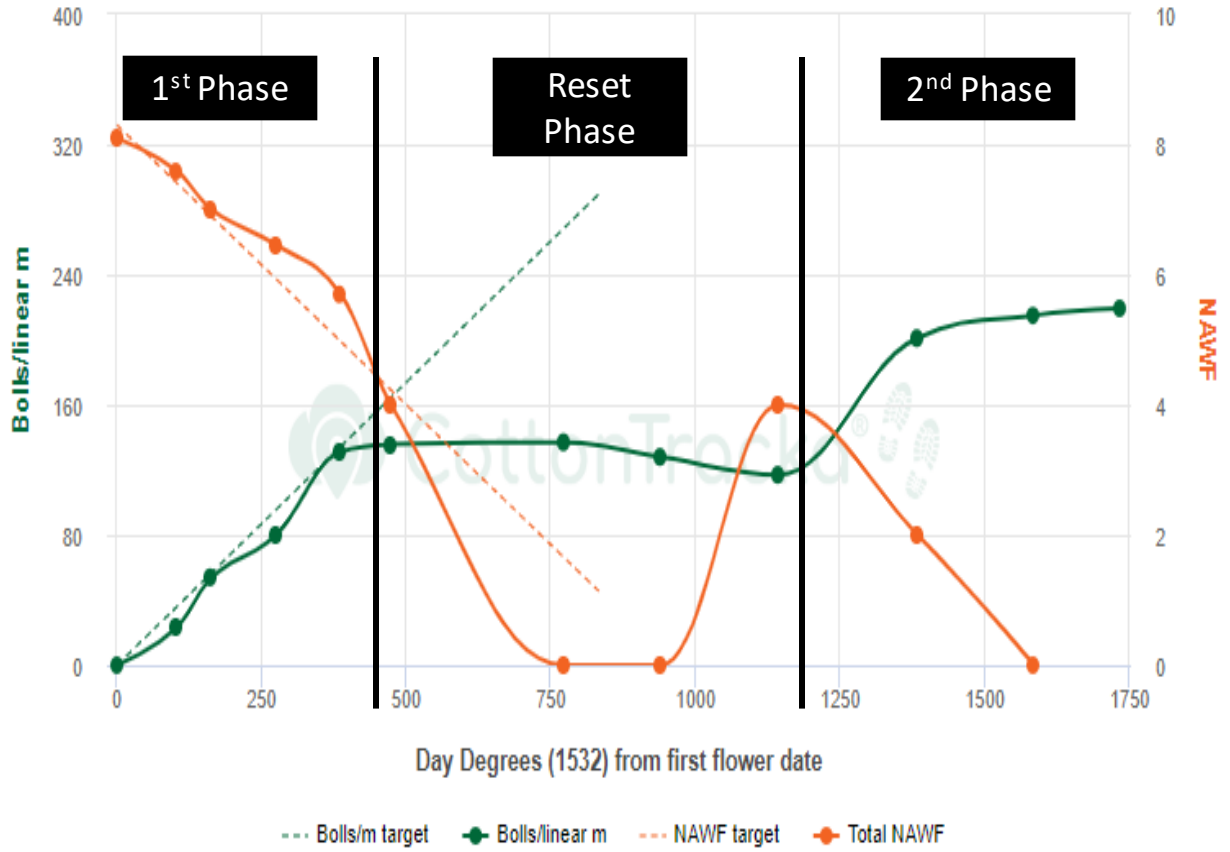
CSD COTTON SEED DISTRIBUTORS

# Long season cotton - CottonTracka®

## Node production / Plant height




## Bolls/m / NAWF



# Long season cotton

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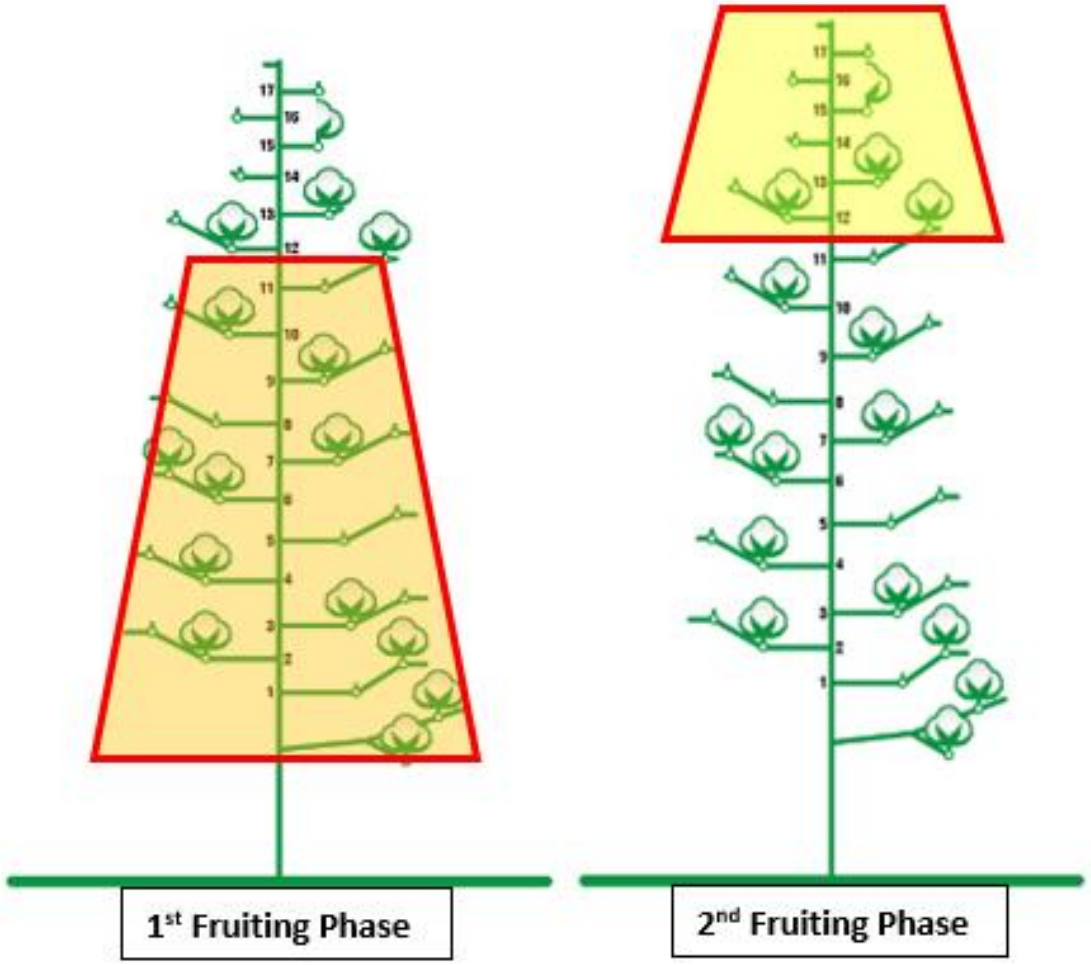


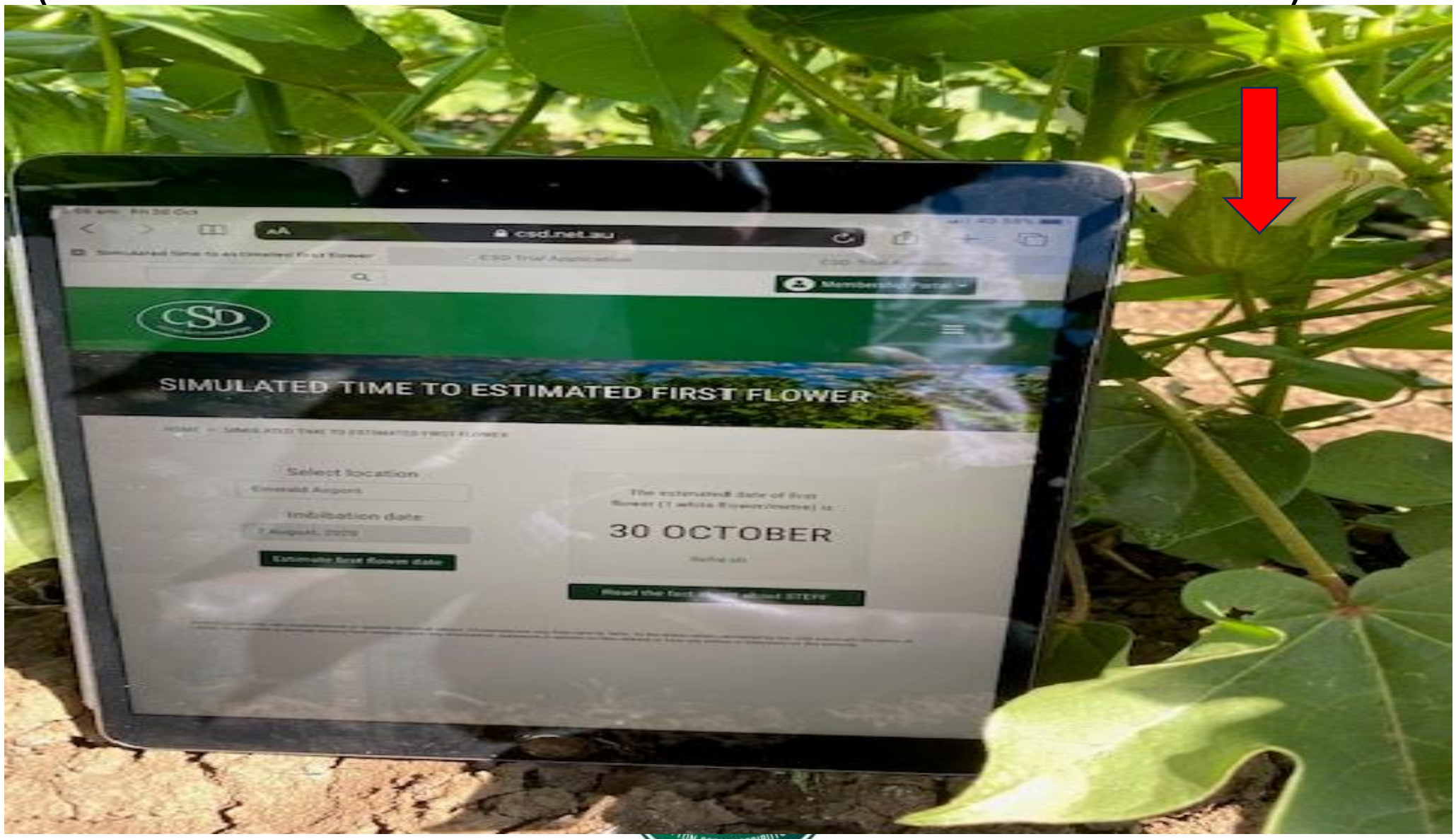

# Long season cotton

Result = 8.5 bales/acre!!!

# CSD Tools

- Developed with the extensive CSD database from industry trial work
- WUE, NUE & yield driven by use of tools
- CottonTracka®
- STEFF – Simulated Time to Estimated First Flower
- BARRY - Biometric Agronomy for Realising Representative Yield
- CSD Extension collection of data for C-CROP and Ambassador program to drive efficiencies and build tools

# **STEFF** (Simulated Time to Estimated First Flower)



# BARRY (Biometric Agronomy for Realising Representative Yield)

Biometric Agronomy for Realising Representative Yield

- Introduction
- Potential Yield
- Data & Map

## CSD Ambassador Potential Yield Model

### Inputs

**Cultivation Type**

Irrigated

**Region**

Northern

**Treatment**

Sicot 746B3F

**Snapshot**

End of Season

### Crop Snapshot

| Name | Value |
|---|---|
| Final Boll Count m² | 165 |
| Overall Boll Lint Weight (gm/boll) | 2.3 |
| Grower Est. Irrigation Water App (ML) | 9 |
| Length of Season (days) | 174 |
| Days of Flowering | 35 |
| Total Rainfall (mm) | 243 |
| Hot Days > 40 C | 6 |
| Yield (b/ha) | 14.8 ± 1 |

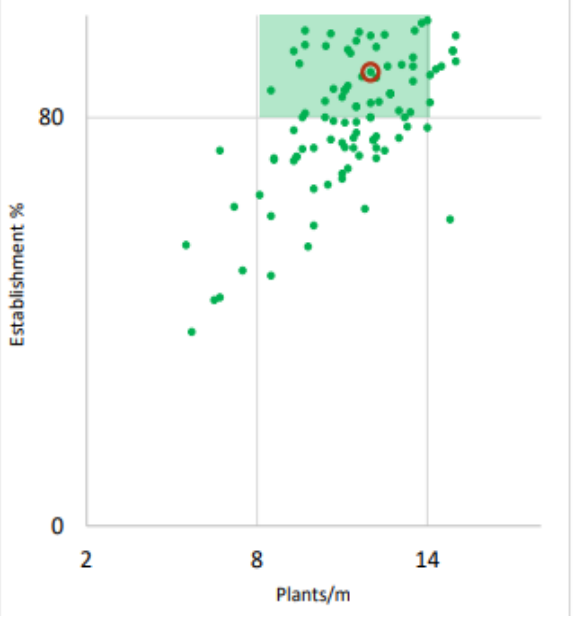
CSV TXT

# C-CROP (CSD Crop Optimisation Tool)

## CSD Cotton Crop Optimisation Program

| Name | Property | Field | Variety |
|---|---|---|---|
| Aussie Farmer | Out Back | Field 1 | Sicot 748B3F |

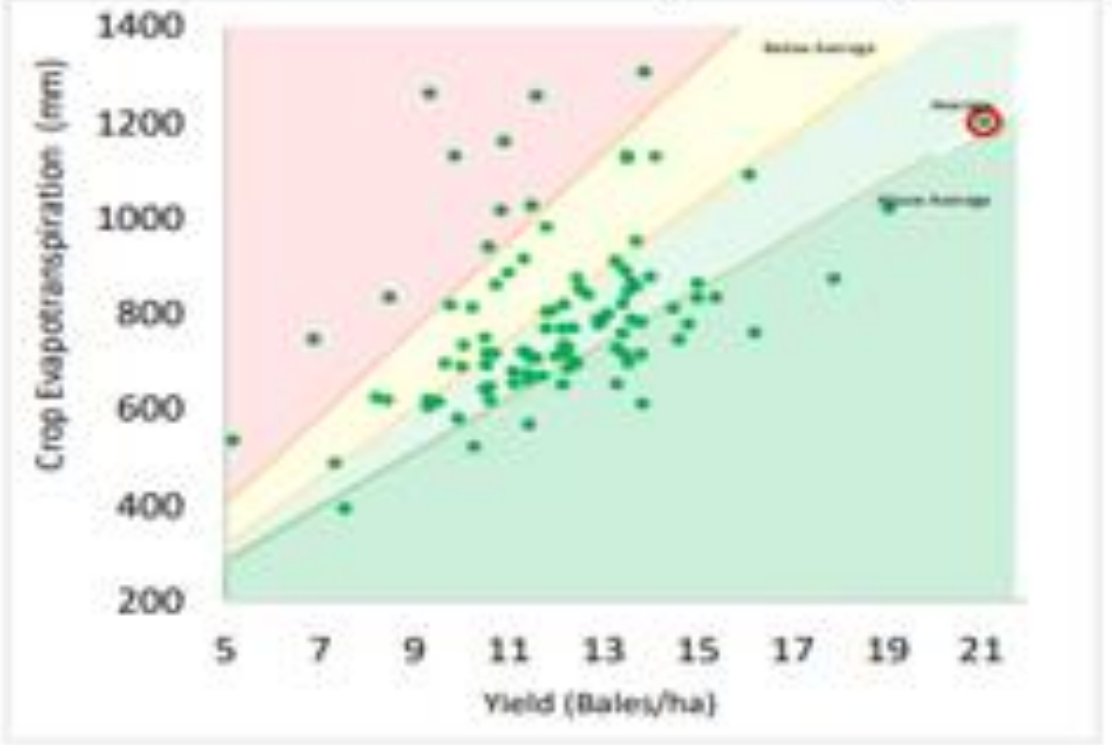
| Cotton Establishment | Your result | Score |
|---|---|---|
| Plants/m | 12 | 10 |
| Establishment % | 88.9 | |




| Score Breakdown |
|---|
| Cotton Establishment |
| First Flower Yield Estimate |
| Nitrogen Use Efficiency Score |
| Water Use Efficiency Score |
| The Yield Equation Score |
| Season Length Efficiency Score |
| Fibre Quality Score |
| Yield |

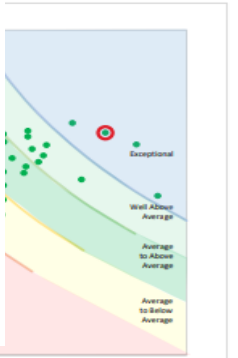
| First Flower Yield Estimate | |
|---|---|
| FF Day Degrees (DD1532) | |
| Plant Height (cm) | |
| 1st Pos Retention % | |
| NAWF | 9.1 |
| NTFFB (nodes to first fruiting branch) | 6.7 |
| Squaring Nodes | 9.7 |

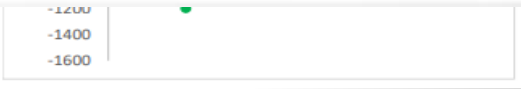
| Water Use Efficiency Score | Your result | Score |
|---|---|---|
| Kg lint/mm | 3.98 | 8 |
| Crop Etc (mm) | 1202.0 | |

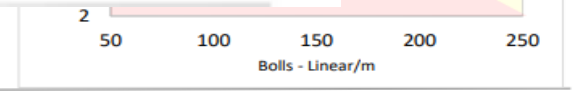



| Your result | Score |
|---|---|
| 3.98 | 8 |
| 1202.0 | |


| Your result | Score |
|---|---|
| 211 | 6.0 |
| 5.42 | |





# Thank You