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# QUALITATIVE REPORT

on the 2024-25 cotton season:  
A survey of consultants



KATE LUMBER



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## PURPOSE


The Cotton Research and Development Corporation (CRDC) commissions this survey each year to provide current and longitudinal knowledge of on-farm practices and attitudes, to aid the research, development and extension effort within the Australian cotton industry.

## COVERAGE

Data was collected by Crop Consultants Australia Inc. (CCA) from 58 cotton consultants, who answered most or all of the questions about their own practices and attitudes, as well as those of their grower clients.

The consultants represented 453 cotton growers and covered 301,618 hectares: 58.15% of the Australian cotton production area for the 2024-25 season (not adjusted for row spacing). This is based on the 2024-25 production figure of 518,718 green hectares (Cotton Australia).

## METHODOLOGY

The survey consisted of 59 quantitative and qualitative questions, which sought to draw out both the details of actual agronomic practices and consultants' views of those practices. It was conducted from June to September 2025, with questions referring to the 2024-25 cotton season. Questions that collected data on clients or areas were only made available to one participant from a consultancy to avoid duplication. The number of consultants who responded to each question is denoted beside the  symbol.

## DATA COLLATION

The online Cvent survey program ([www.cvent.com](http://www.cvent.com)) was used to compile the data. Interpretations are up to the user.

## ACKNOWLEDGMENT

Thank you to the consultants who took the time and effort to complete this survey. The data in this survey provides valuable information for researchers and industry organisations in planning and carrying out projects. Thank you to Crop Consultants Australia and Black Canvas graphic design for the compilation of this report.

## DISCLAIMER

The Cotton Research and Development Corporation (CRDC) provides the information in this publication to assist understanding of the agronomic performance of the Australian cotton industry. CRDC accepts no responsibility or liability for the accuracy or currency of the information contained in this publication, nor for any loss or damage caused by reliance on the information and management approaches surveyed. While the 2024-25 survey contains information that should be of value to extension officers and researchers in defining future industry needs and as an information source in seeking to improve industry management practices, users of this publication must form their own judgement about the information it contains.

Crop Consultants Australia took all care in the gathering and collating of the data; however, the data was provided by individual consultants and agronomists and therefore is subject to associated constraints.



# THE CONSULTANTS AND THEIR CLIENTS

## ABOUT THE CONSULTANTS

1

Are you completing the survey on behalf of the business or business unit?\*

58 respondents

**\*Note:** 44 consultants completed the survey on behalf of their business or business unit, which involved completing the specific questions relating to staff, hectares and number of clients. 14 consultants completed the survey questions only relating to individual practices and attitudes.

2

Which of the following best describes your employment as a consultant?

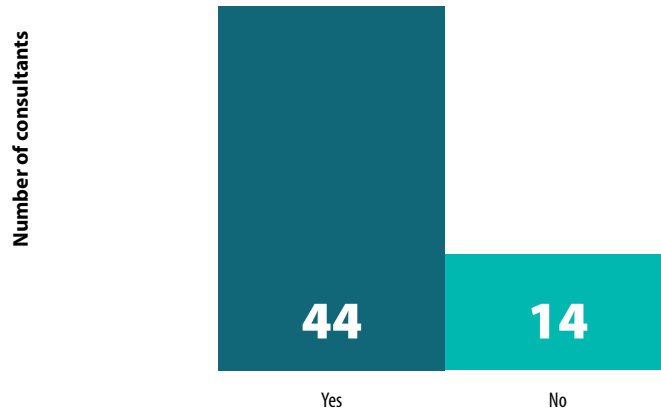
58 respondents

3

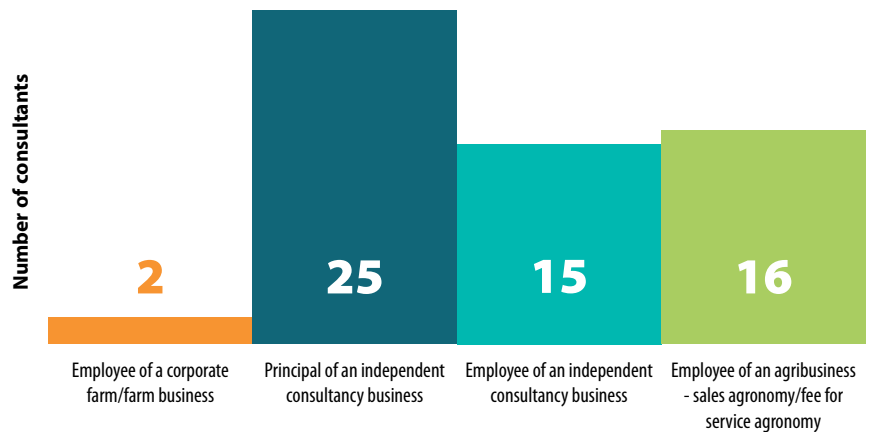
For how many seasons have you worked consulting in cotton?

57 respondents

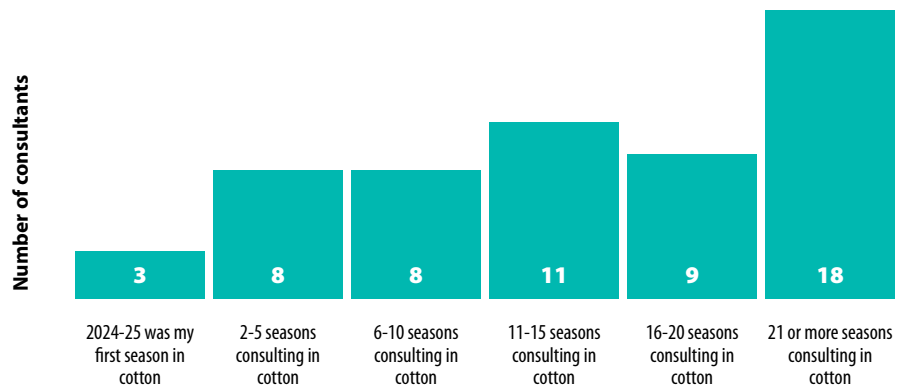
PRIMARY BUSINESS PERSON COMPLETING SURVEY



NATURE OF CONSULTANCY



NUMBER OF SEASONS CONSULTING IN COTTON



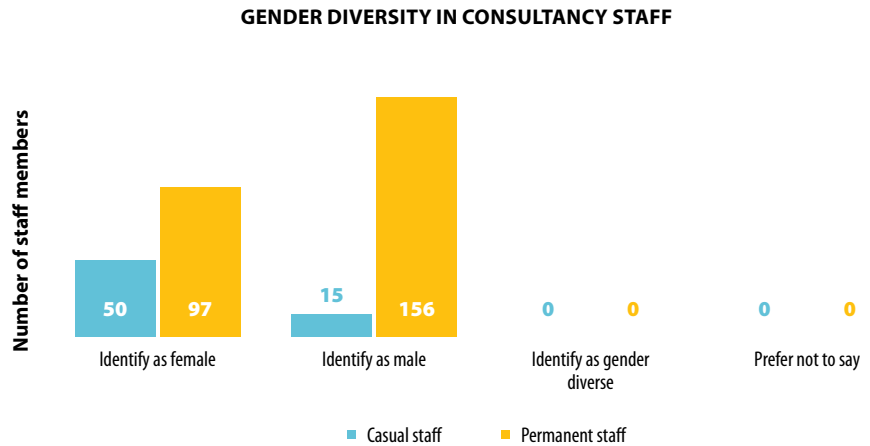


# THE CONSULTANTS AND THEIR CLIENTS

4

What was the gender diversity of the permanent and casual staff employed in your business (including yourself) in January 2025?

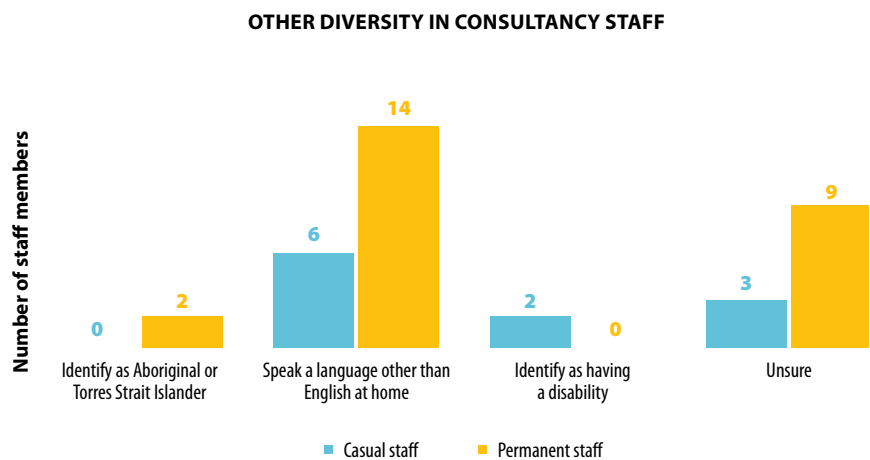
41 respondents



5

How many of the permanent and casual staff employed in your business (including yourself) in January 2025 identify as being in the following demographic groups?

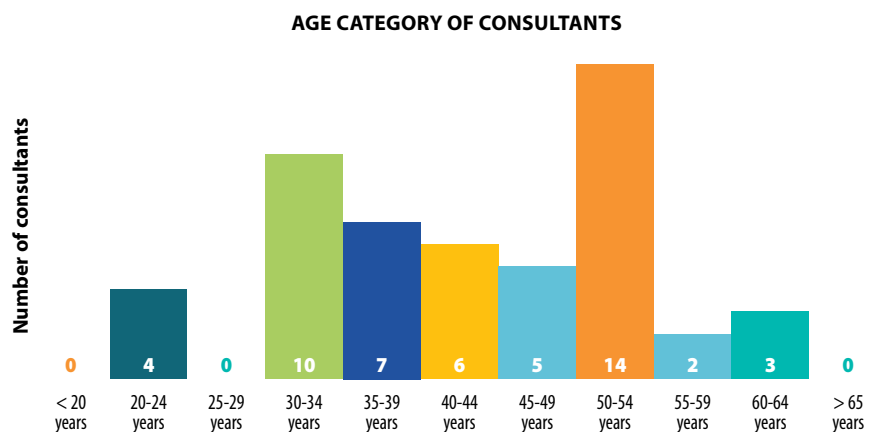
41 respondents



6

What age category do you belong to?

51 respondents





# THE CONSULTANTS AND THEIR CLIENTS

7

Please list out any learnings or lessons that you have gained in the 2024-25 season.

57 respondents

**\*Note:** These responses are verbatim as they are provided via the survey.

## Conditions and weather

Open cotton doesn't like rain.

If prolonging rain events happen when the crop is due for its first defoliation it will cause substantial regrowth as the plant turns from mature back into vegetative growth, this makes the defoliation process trickier, potentially requiring more passes.

Rain at defoliation time can cause significant yield loss.

No two seasons are the same.

Cotton varieties respond different to cloudy weather.

Kind season dampened by a wet defoliation/ pick.

A lot of rain at before picking downgrades the colour badly!

Dryland cotton planting timing, boll loss and quality from heat, severe tight lock.

Different fruiting habits on some BGXF varieties. Fruit loss during humid weather, compensation ability of cotton.

## People management

People are the most important part of your business, and they need to feel respected and valued.

I was fortunate to consult on crops/farms in a different valley to where I had spent most of my time prior, this came with different challenges and constraints that I had to approach with slightly different tactics.

Along with this came dealing with different people, of which is always a challenge in itself!

Experience counts.

Always ask questions.

Always something to learn.

More is not always better. There is a balance.

Every year is different.

Be more patient.

ELSIE HUNT





# THE CONSULTANTS AND THEIR CLIENTS

## In crop management

Planting dryland cotton, better to have on good moisture a little deeper than on dodgy moisture in the 'ideal' planting depth, if there are no subsequent rain events this will affect evenness of crop maturity.

To ensure good establishment it's critical to water the cotton up, rather than relying on moisture planting.

The level of damage that pigs can cause if they get out of control. XtendFlex® tech was great at controlling Glyphosate resistant weeds like tall fleabane. Started to get more comfortable incorporating canopy temps into irrigation scheduling, they provided more confidence to either lengthen or shorten intervals.

The season quantified the difference between early prep and late prep. Trials included row spacing, irrigation systems and variety.

Water and nitrogen = yield.

We are gaining more success from later plantings, narrower rows and heavier use of Mepiquat than I imagined would be the case 5 years ago.

Disease can be managed well when the growers adopt recommended rotation strategies and treatments, even in the highest-pressure situations.

The new XtendFlex® varieties are quite vigorous and like to grow in the tropics. Growth management is not just about RX380. Every season you learn more.

In season Pix® management, early thrip control, row spacing decisions, plant timing decisions.

The yield isn't the final yield until its picked and ginned. Over spraying is still a huge issue. Some interesting happenings/growth habits in the 761 this season, with no real explanations as to what happened.

Pix® application will never be a date x rate industry standard

Trust the process, well-watered well managed crops can tolerate stress better than we think in the southern regions.

Delaying an irrigation by a day or two in 606 can negatively affect micronaire in warm climates

Below threshold Green Vegetable Bug populations, over long periods, can cause significant damage.

December planted dryland cotton can yield exceptionally well, pigs really need to be controlled before you start seeing large parts of the field damaged - need to get on top of the population in late spring prior to row closure, water timing continues to be critical.

XtendFlex® variety differences in growth pattern.

Importance of rotations on verticillium wilt management.

Be ahead of the crop and have a solid plan in place for every grower ahead of the season. Keep good records and ensure you know what to expect before checking the crop.

Very high-water year and it was needed for performance. 606 performed well again and the new varieties lagged significantly. 714 performed extremely well and out yielded 746 in fields with black root rot, despite it being a very low disease presence year. This is a big red flag for varieties / coming years.





# THE CONSULTANTS AND THEIR CLIENTS

## ABOUT THE CLIENTS

8

In which region/s are your cotton clients based? This question was only asked of those consultants responding on behalf of their consultancy business.

43 respondents

9

In which regions did you conduct the majority of your work in 2024/25? This question was only asked of those respondents that were **not** answering on behalf of their consultancy business.

14 respondents

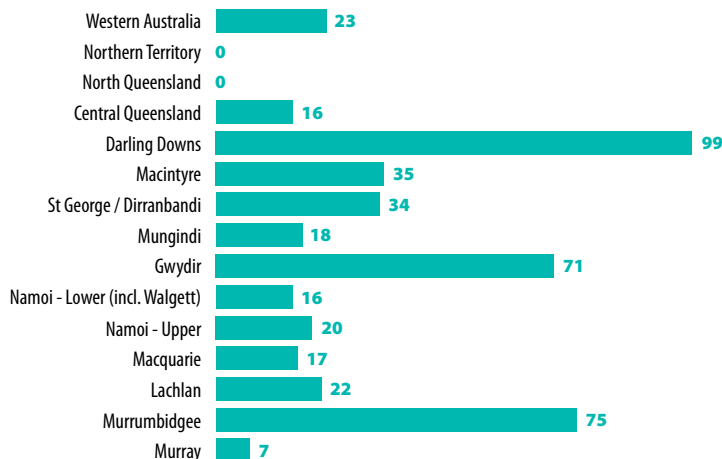
**\*Note:** Regions with no responses include Central Queensland, Namoi Lower, Macquarie, Lachlan and Murray.

10

How many cotton clients did the business (or business unit) service in 2024-25? This question was only asked of those consultants responding on behalf of their consultancy business.

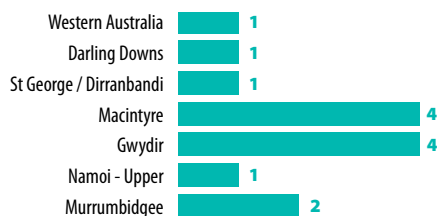
39 respondents

### LOCATION OF CLIENTS



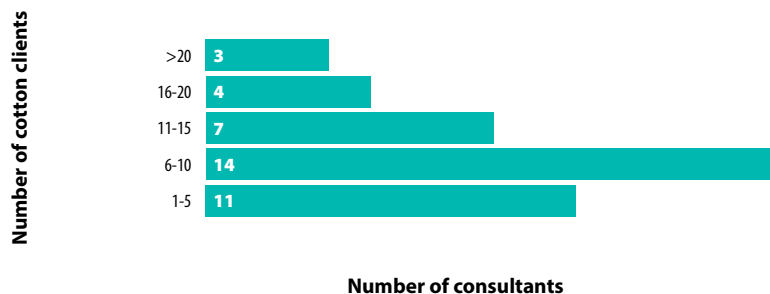
Number of clients

### REGIONS IN WHICH CONSULTANTS CONDUCT THE MAJORITY OF WORK



Number of consultants

### CLIENTS SERVICED PER BUSINESS



Number of consultants



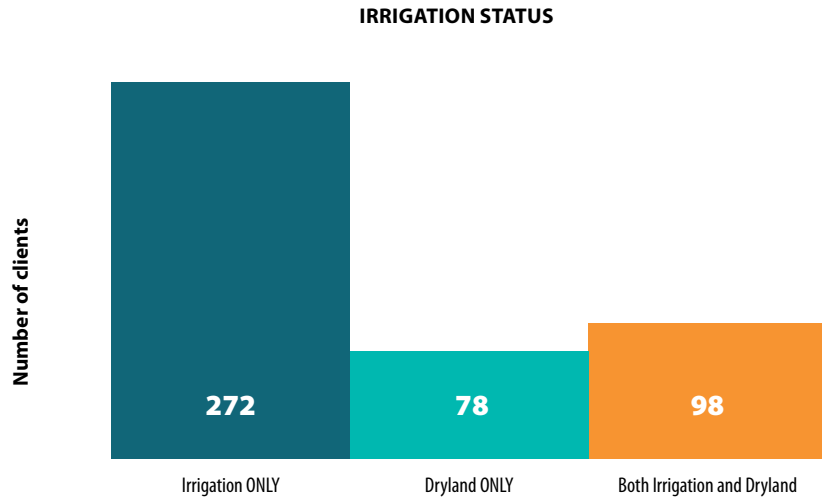
# ON-FARM PRACTICES AND ATTITUDES

## ON-FARM PRACTICES AND ATTITUDES

11

How many of your cotton clients have dryland, irrigation or both?

57 respondents



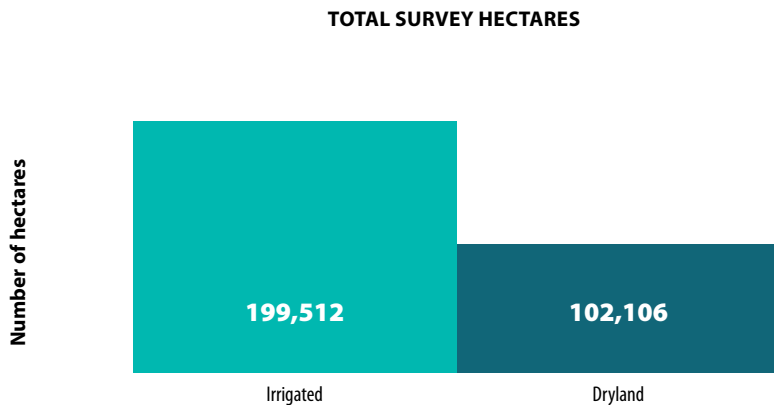
## COVERAGE

12

How many hectares of cotton (total area, not adjusted for row spacings) did your clients grow in the 2024-25 season?

43 respondents

**Note:** These figures represent a total of 51% of the total irrigated crop (based on green hectares\*) and 41% of the total dryland crop (based on brown hectares\*).  
\*data provided by Cotton Australia 2025 chart.



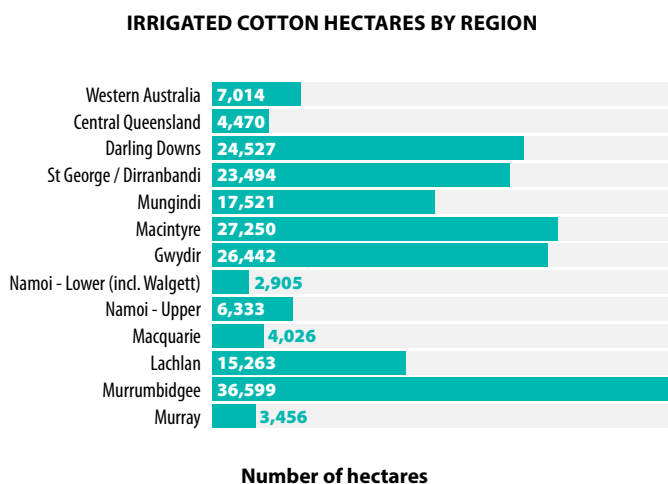
13

In which region/s are the irrigated cotton hectares of your clients situated?

41 respondents

199,300ha

**\*Note:** Regions with zero hectares have not been included in the chart.







# ON-FARM PRACTICES AND ATTITUDES

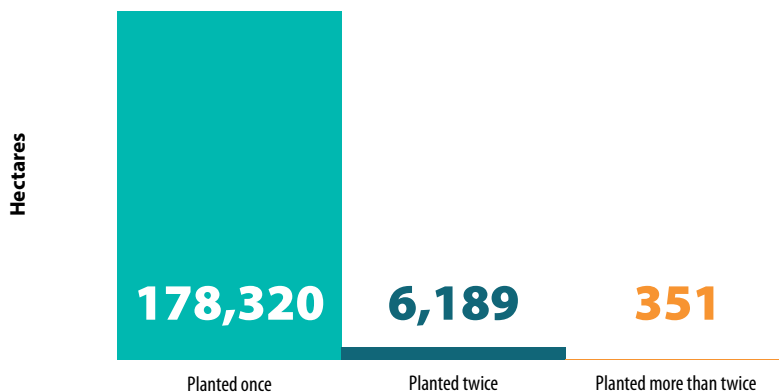
## PLANTING

16

Of the irrigated cotton hectares, how many planted once, planted twice or more than twice?

39 respondents

PLANTING OF IRRIGATED HECTARES

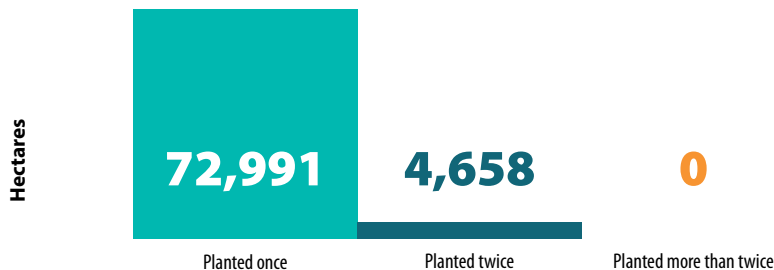


17

Of the dryland cotton hectares, how many were planted once, planted twice or more than twice?

14 respondents

PLANTING OF DRYLAND HECTARES



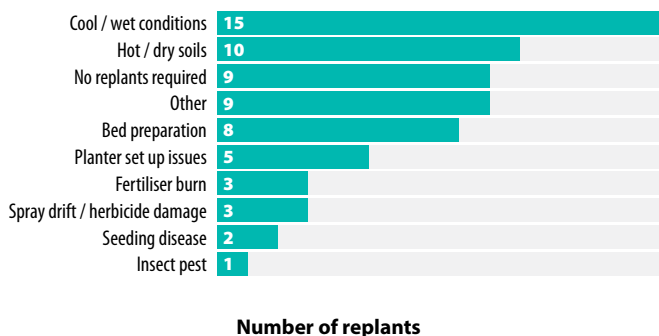
18

Select the reason/s why replants were required (select multiple as required):

38 respondents

Number of responses for the major reasons are presented in this graph. Responses listed as 'other' include: Poor seed quality (3), irrigation mistiming (3), soil crusting (3), and sandblasting.

REASONS FOR REPLANTS





# ON-FARM PRACTICES AND ATTITUDES

## FARMING SYSTEM

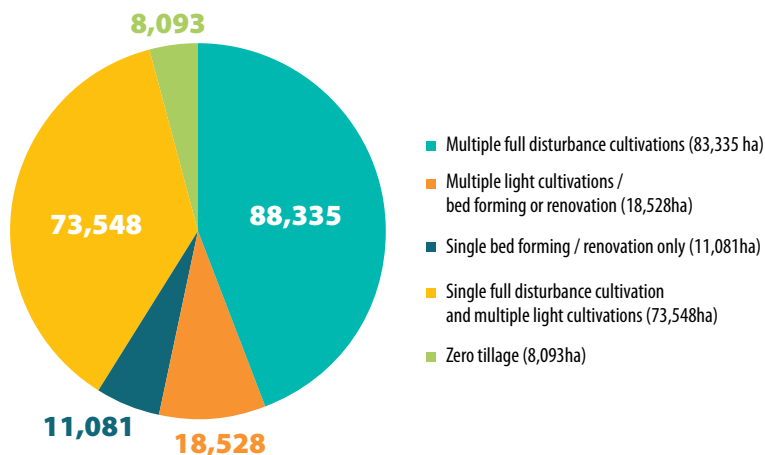
19

What tillage practices were used in your 2024-25 irrigated cotton crops? Please allocate number of hectares to each practice.

43 respondents

199,385ha

IRRIGATED AREA (HECTARES)



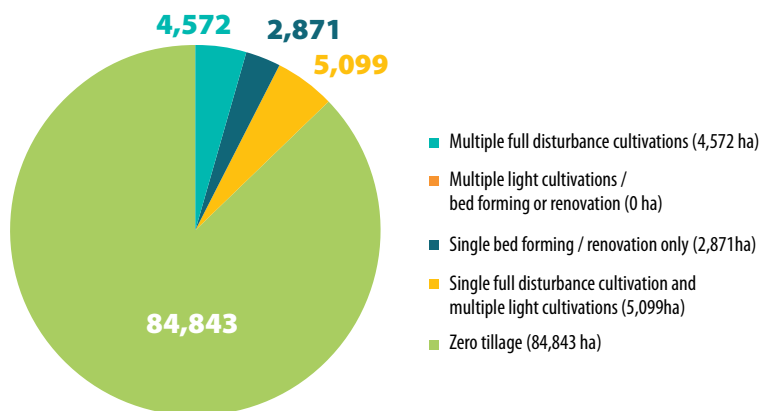
20

What tillage practices were used in your 2024-25 dryland cotton crops? Please allocate number of hectares to each practice.

13 respondents

97,385ha

DRYLAND AREA (HECTARES)



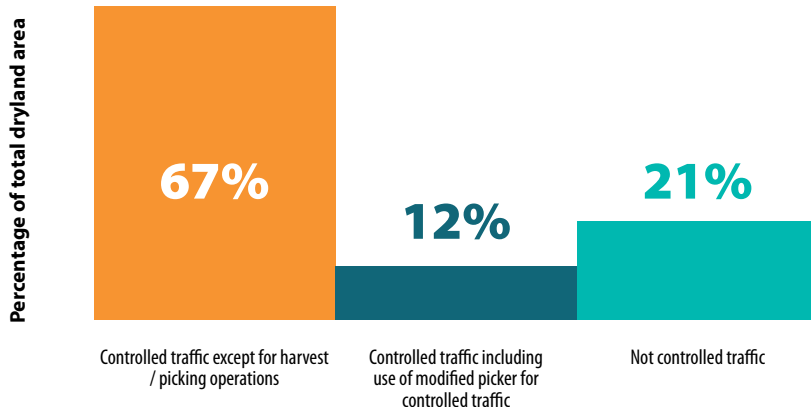
21

Of your irrigated cotton hectares, how widespread in 2024-25 was the use of controlled traffic by your cotton clients? Please allocate number of hectares (to best of your knowledge) to the options listed.

43 respondents

198,170ha

IRRIGATED AREA





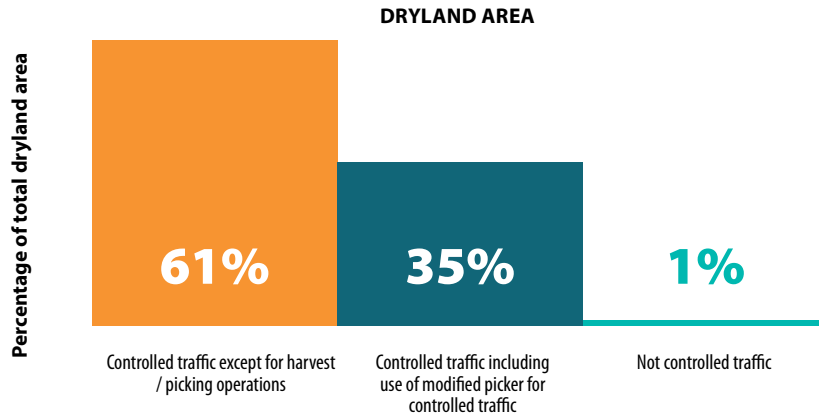
# ON-FARM PRACTICES AND ATTITUDES

22

Of your dryland cotton hectares, how widespread in 2024–25 was the use of controlled traffic by your cotton clients? Please allocate number of hectares (to best of your knowledge) to the options listed.

13 respondents

99,406ha

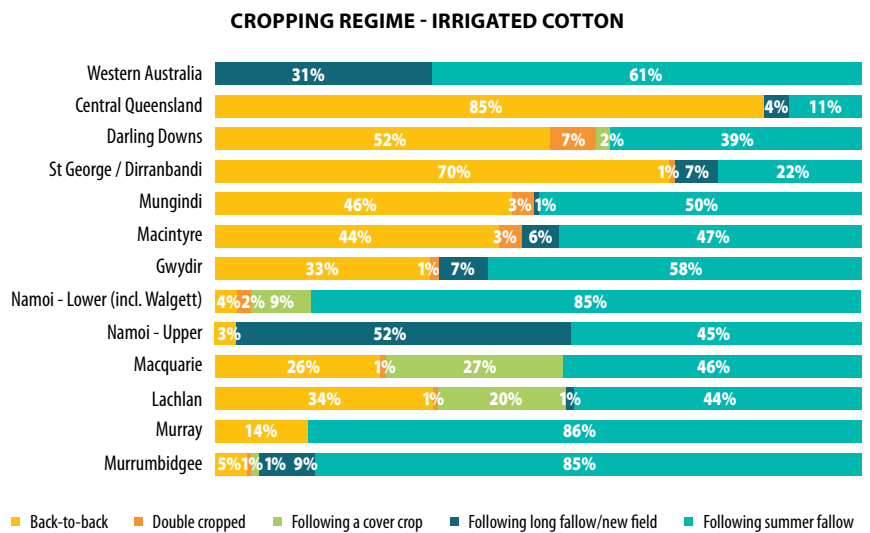


23

Of your irrigated cotton hectares in 2024-25, how many hectares apply to each fallow situation?

39 respondents

196,301ha



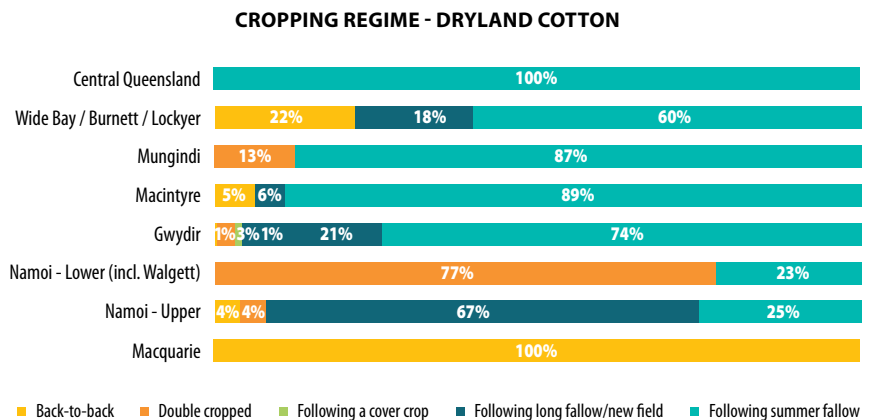
Percentage impact

24

Of your dryland cotton hectares in 2024-25, how many hectares apply to each fallow situation?

13 respondents

98,177ha



Percentage impact



# ON-FARM PRACTICES AND ATTITUDES

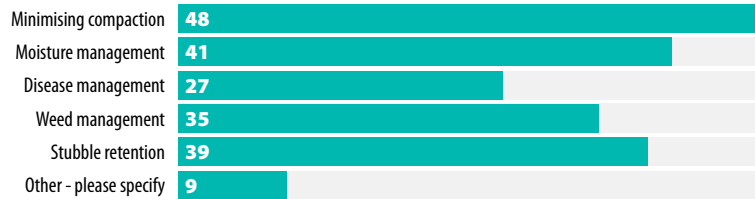
25

What are the main factors that impact on your decisions about tillage management, controlled traffic and crop rotation?\*

56 respondents

**\*Note:** Number of responses for the major factors are presented in this graph. Responses listed as 'Other' Nutrient residues, grown on crops require lots of tillage to turn around in just 2 months, early prep and consolidation (3) trafficability due to wet season, not all B2B cotton - some cotton does follow maize, available moisture, season outlook, commodity price, sprinkler irrigation- water infiltration under irrigation.

FACTORS THAT IMPACT ON DECISIONS ABOUT TILLAGE, CONTROLLED TRAFFIC AND CROP ROTATION



Number of consultants

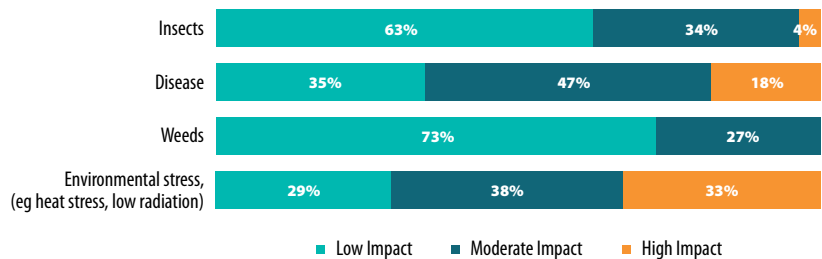
## CROP PROTECTION

26

Rate the average impacts you think insects, disease, weeds and environmental stress has had on you clients' 2024-25 crops.

56 respondents

IMPACTS OF INSECTS, DISEASE, WEEDS AND ENVIRONMENTAL STRESS ON CROPS



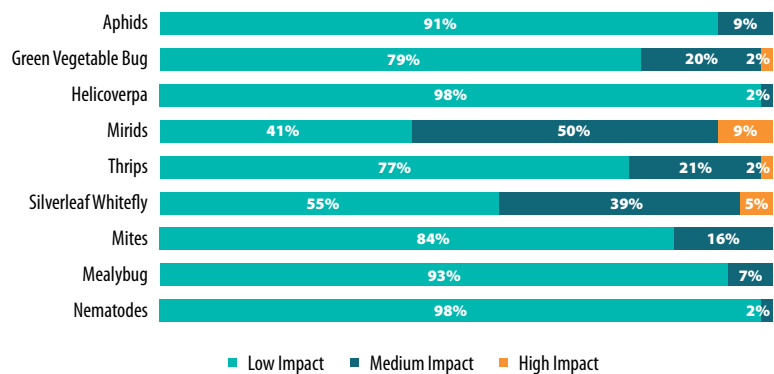
Percentage impact

27

Rate the average impacts you think the following pests had on your clients' cotton crops in 2024-25.

56 respondents

IMPACTS OF PESTS ON 2024-25 COTTON CROP



Percentage impact



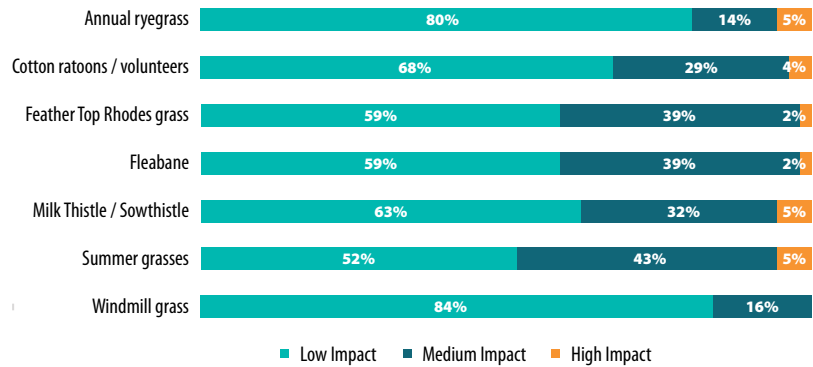
# ON-FARM PRACTICES AND ATTITUDES

28

Rate the average impacts you think the following weeds had on your clients' cotton crops in 2024-25.

56 respondents

## IMPACTS OF WEEDS ON 2024-2025 COTTON CROP



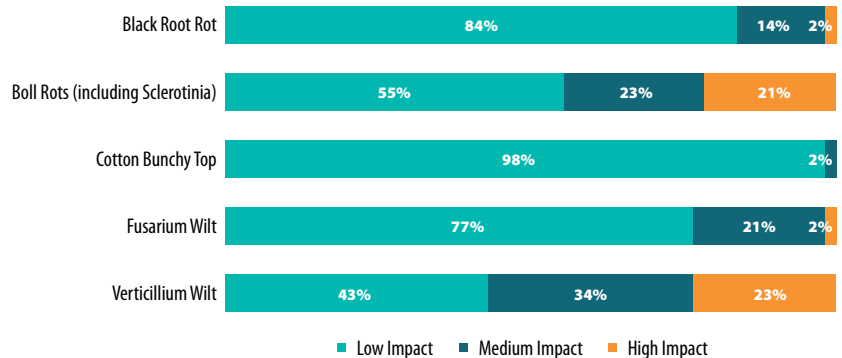
Percentage impact

29

Rate the average impacts you think the following diseases had on your clients' cotton crops in 2024-25.

56 respondents

## IMPACTS OF DISEASE ON 2024-25 COTTON CROP



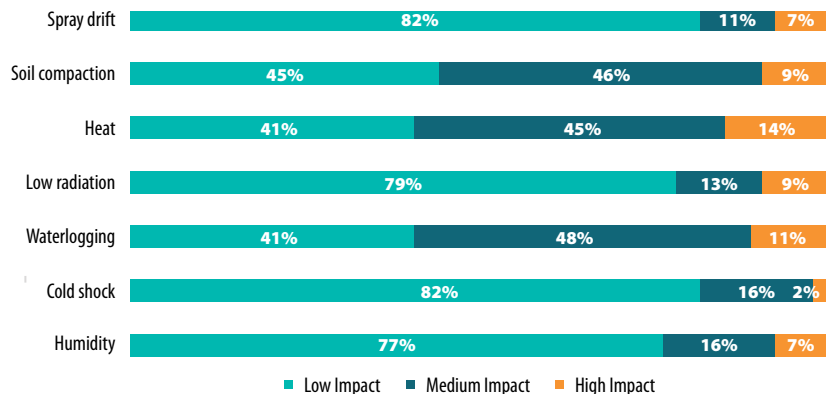
Percentage impact

30

Rate the average impacts you think the following prevailing environmental conditions had on your clients' cotton crops in 2024-25.

56 respondents

## IMPACTS OF ENVIRONMENT ON 2024-25 COTTON CROP



Percentage impact



# ON-FARM PRACTICES AND ATTITUDES

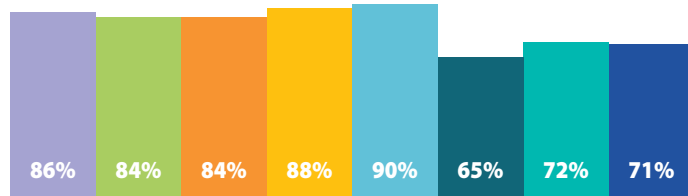
31

With regards to insect pest management in 2024-25 cotton fields, how widely used (in terms of total irrigated and dryland hectares) are the practices listed below?

38 respondents

301,618ha

## INSECT MANAGEMENT PRACTICES (COTTON AREA)



- The industry's recommended sampling strategies are used to monitor past pest abundance and plant damage
- The industry's recommended thresholds are used when making pest control decisions whenever possible
- The IRMS is followed when selecting insecticides/miticides
- Pesticide selection aims to conserve beneficial insects whenever possible
- Weed hosts are controlled to prevent pest build up
- Rotations cropping and frequency of cotton decisions consider cotton pest risks
- Rotations cropping and frequency of cotton used as part of integrated weed management strategy
- Rotations cropping and frequency of cotton decisions consider cotton disease risks

Percentage of total cotton crop

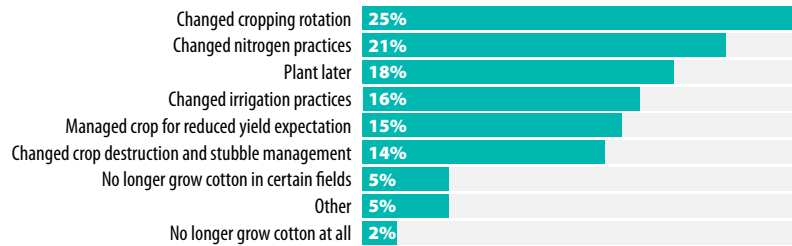
32

Thinking about your clients, please select the options applicable to changes in their practices in the past 5 years due to the impacts of disease.

35 respondents

Other practices mentioned are detailed in Appendix 2.

## CHANGES IN PRACTICES IN THE PAST 5 YEARS DUE TO THE IMPACTS OF DISEASE.



Percentage of clients represented in the survey



# ON-FARM PRACTICES AND ATTITUDES

33

What further information and tools do you need to succeed with pest management?

20 respondents

We have all the tools we need. Rye grass is a bigger issue than fleabane now. However, Mateno in winter cereals is doing a great job to help this out.

Resistance status seasonal updated.

Drones which are capable of checking cotton for insects. Could get much larger picture quickly and manage pests better

Resistance monitoring.

More biological options as to rely less on insecticides.

Permits where applicable.

Continued support and efforts from our local REOs and kept in the loop on latest developments around TMS/Bayer etc.

A good quick easy to use app for identifying whitefly numbers on leaves (nymph numbers) would be very useful.

The parasitised whitefly app once working well will be great.

New chemistry or product choice to control aphids, mites and mealy bug.

Fungicide options to control Verticillium wilt.

We need to do more black root rot research in the south as it is the largest economic loss for the cotton industry in the southern valley. If best management rotations and crop options for reducing inoculum are not explored, it will restrict the industry's ability to be sustained.

Green Vegetable Bug (GVB) thresholds need to be revisited for yield and quality. Improved management options for GVB- softer options.

Further research specific to growing in the Ord Valley.

More training on how to use apps like PestDetect App better.

More information on damage thresholds when have varying predator levels. More Verticillium wilt monitoring. Stop people spraying unnecessarily.

New chemistry that is soft and works. Need people to see the benefit of keeping beneficials more.

Up to date research on thresholds and insect management under an IPM system.

Tools to more accurately manage irrigations, specifically tailored to irrigation timing and last irrigation decisions, to reduce verticillium but maintain yields and cotton quality.

Further disease research and better varieties.

New insecticide options.

Label extension on soil pests symphylans, nematodes.



# ON-FARM PRACTICES AND ATTITUDES

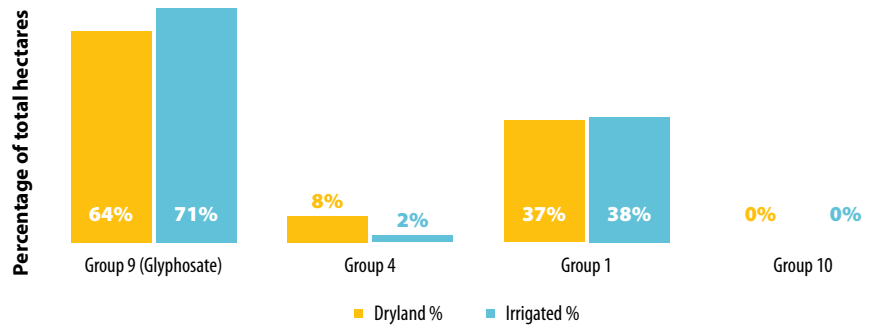
## WEEDS

34

Of the irrigated and dryland cotton hectares over which you consulted in 2024-25 what is the total area (suspected or confirmed) with herbicide resistant weeds?

52 respondents

TOTAL AREA (SUSPECTED OR CONFIRMED) WITH HERBICIDE RESISTANT WEEDS

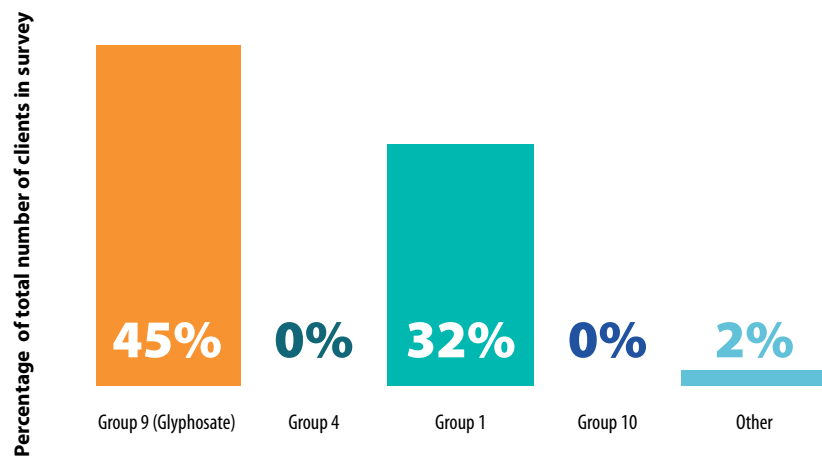


35

How many of your cotton clients have had herbicide resistance CONFIRMED?

35 respondents

CLIENTS THAT HAVE HAD HERBICIDE RESISTANCE CONFIRMED



ANDREW RICHARDS





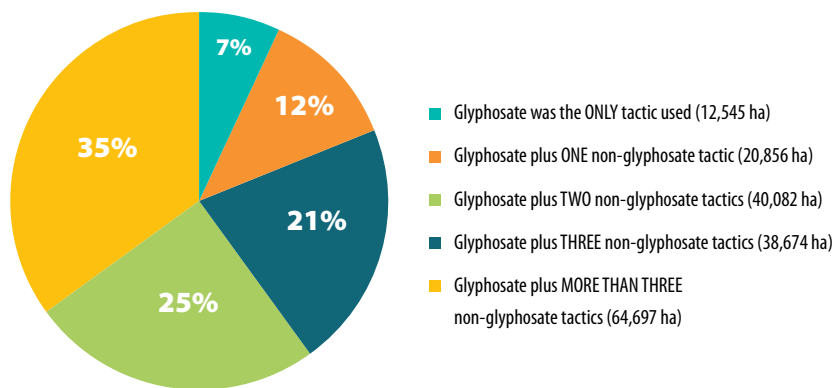
# ON-FARM PRACTICES AND ATTITUDES

36

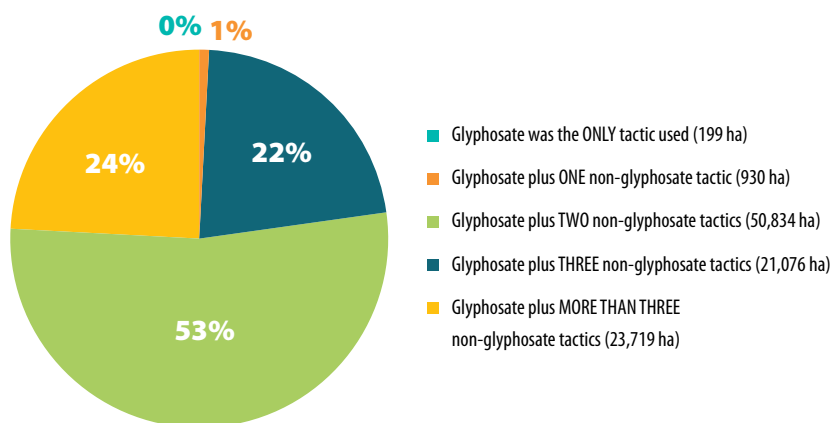
Of the irrigated and dryland cotton hectares over which you consulted in 2024-25, please estimate how many tactics were used for the cotton crop, including in preparation. For this question, a tactic is considered a weed control operation such as cultivation, herbicide or chipping.

52 respondents

NUMBER OF WEED CONTROL TACTICS - IRRIGATED



NUMBER OF WEED CONTROL TACTICS - DRYLAND

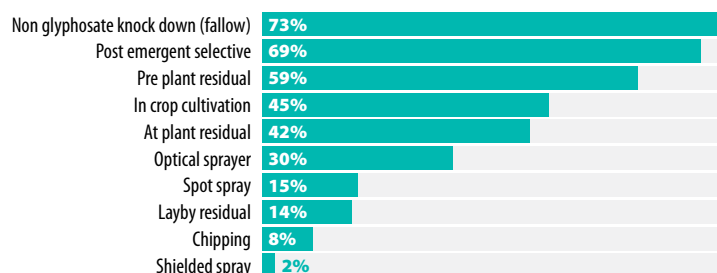


37

Thinking about your cotton clients and how they have managed weeds across their cotton farming system, what weed control tactics do they undertake?

37 respondents

TACTICS THAT CLIENTS HAVE ADOPTED TO MANAGE WEEDS



Percentage of total number of clients in survey



# ON-FARM PRACTICES AND ATTITUDES

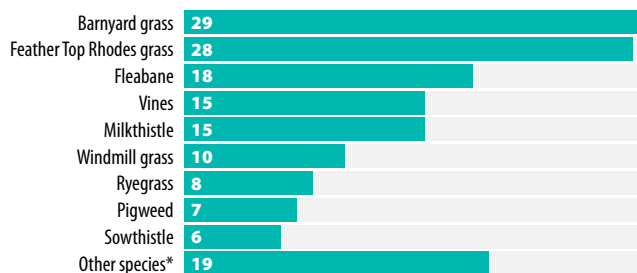
38

In your experience what weed species are currently or emerging as the biggest challenge to control in the irrigated system?

51 respondents

**\*Note:** Other species includes tridax daisy, brown beetle grass, Singapore daisy, summer grass, prickly lettuce, cudweed, button grass, Queensland bluegrass, volunteer cotton, Liverseed grass, gooseberry, blow away grass, nutgrass and noogoora burr. The number of responses for the major weeds are presented in this graph. Full verbatim answers are presented in Appendix 3.

WEED SPECIES CHALLENGES FOR IRRIGATED COTTON



Number of consultants

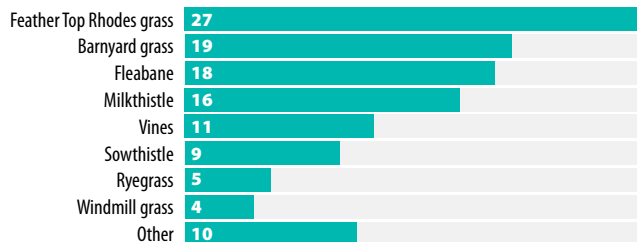
39

In your experience what weed species are currently or emerging as the biggest challenge to control in the dryland system?

43 respondents

**\*Note:** Other includes liverseed grass, button grass, prickly lettuce, pigweed, Queensland bluegrass, and caustic weed. The number of responses for the major weeds are presented in this graph. Full verbatim answers are presented in Appendix 4.

WEED SPECIES CHALLENGES FOR DRYLAND COTTON



Number of consultants

DEAN HAMBLIN





# ON-FARM PRACTICES AND ATTITUDES

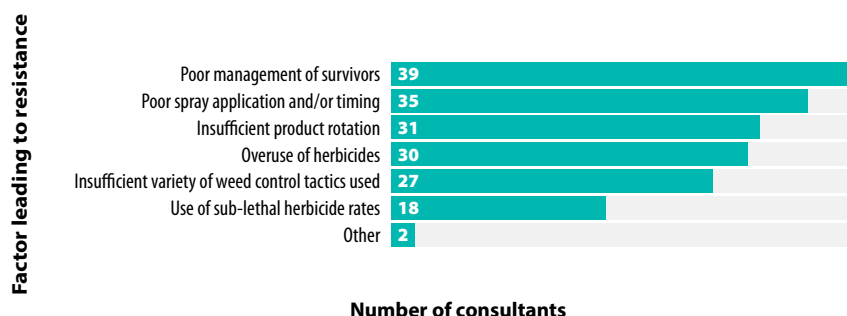
40

In your opinion, what do you believe are the major factors that lead to herbicide resistant population developing on your clients' farms?

39 respondents

**\*Note:** Other includes weed stress at times and logistics in wet years interfering with ability to control on time. Large seed banks. Not getting double knocks actioned/camera sprays again due to environmental conditions, flood water moving across fields.

MAJOR FACTORS LEADING TO HERBICIDE RESISTANT POPULATIONS DEVELOPING ON CLIENTS' FARMS

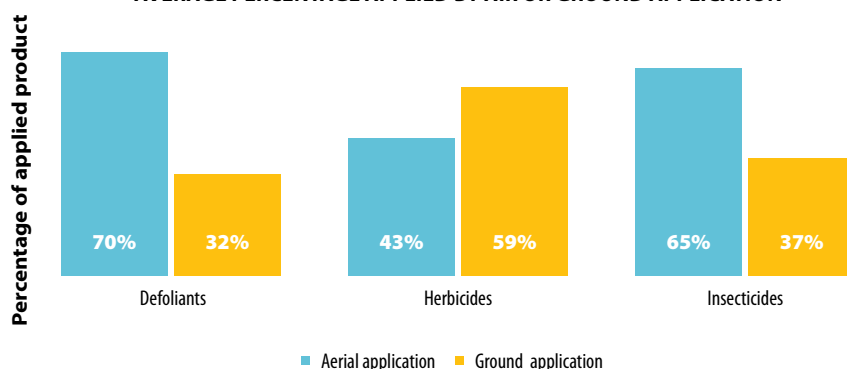


41

Thinking about application of crop protection products, on average what is the percentage applied by air or by ground application?

50 respondents

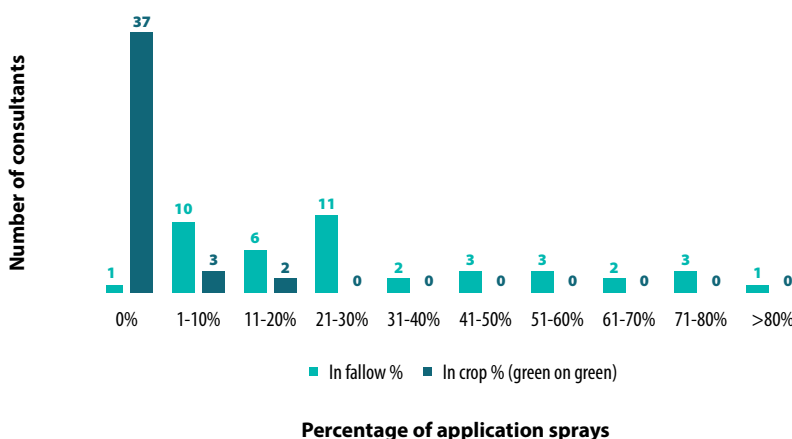
AVERAGE PERCENTAGE APPLIED BY AIR OR GROUND APPLICATION



42

Thinking about your ground applications, what percentage of your pre-crop (include all fallow) and in-crop (green-on-green) sprays were applied using an optical sprayer?

PERCENTAGE OF GROUND APPLICATION SPRAYS THAT WERE APPLIED USING AN OPTICAL SPRAYER





# ON-FARM PRACTICES AND ATTITUDES

## DEFOLIATION

43

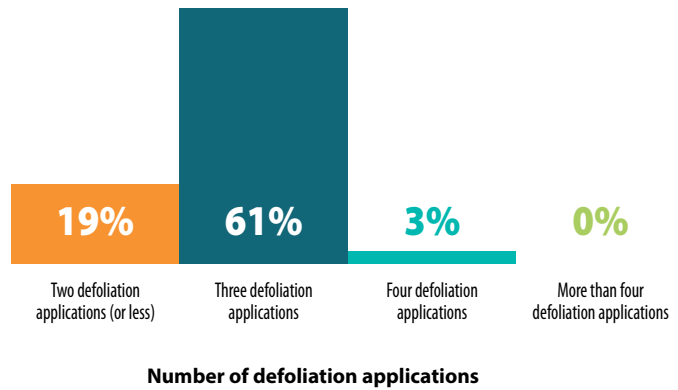
Thinking about your irrigated cotton hectares, how many applications of defoliant products were required?

36 respondents

199,512ha

Percentage of total irrigated area

NUMBER OF DEFOLIATION APPLICATIONS - PERCENTAGE OF TOTAL IRRIGATED HECTARES



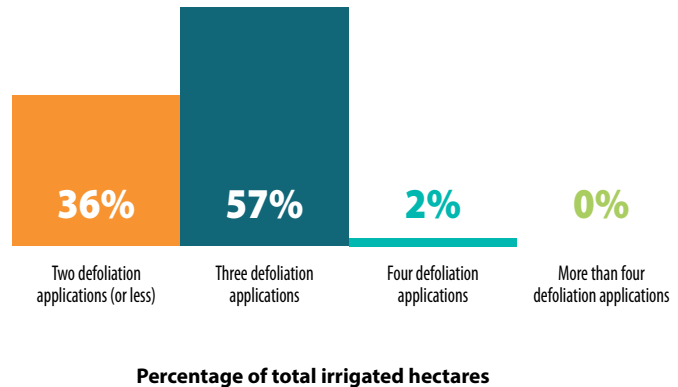
44

Thinking about your dryland cotton hectares, how many applications of defoliant products were required?

14 respondents

102,106ha

NUMBER OF DEFOLIATION APPLICATIONS - PERCENTAGE OF TOTAL IRRIGATED HECTARES



ALLAN JONES





# ON-FARM PRACTICES AND ATTITUDES

## NUTRITION MANAGEMENT

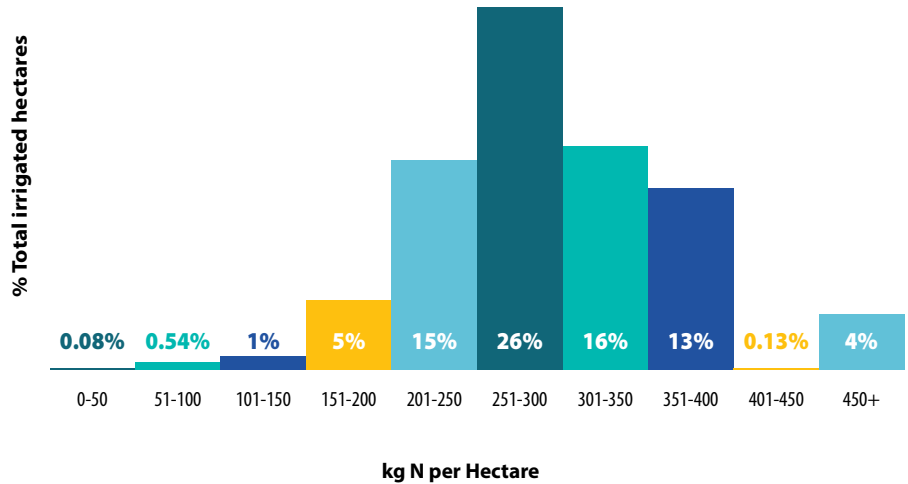
45

What is your best estimate of how much nitrogen was applied per hectare for your total irrigated cotton hectares in 2024-25? Include all applications made in the previous fallow period as well as in-crop applications.

20 respondents

199,512ha

### AMOUNT OF NITROGEN APPLIED IN IRRIGATED COTTON



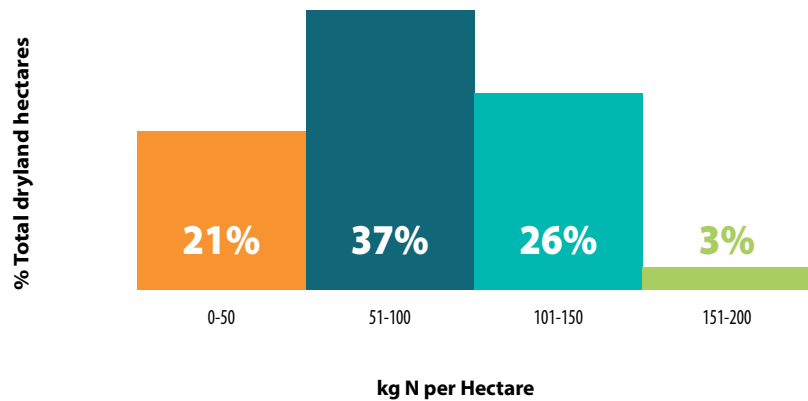
46

What is your best estimate of how much nitrogen was applied per hectare for your dryland cotton hectares in 2024-25? Include all applications made in the previous fallow period as well as in-crop applications.

17 respondents

102,106ha

### AMOUNT OF NITROGEN APPLIED IN DRYLAND COTTON

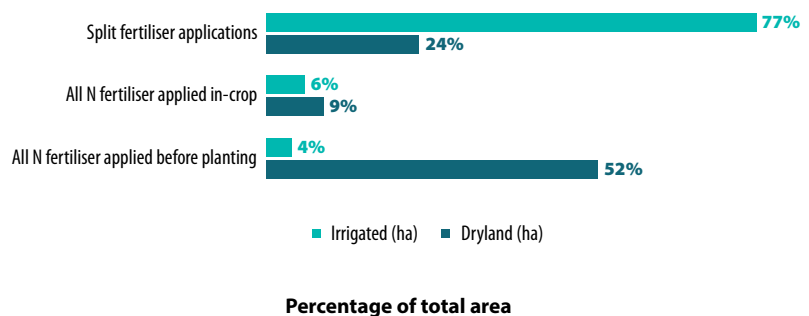


47

In 2024-25, when were the cotton crops' nitrogen fertiliser requirements applied?

44 respondents

### TIMING OF NITROGEN FERTILISER APPLICATION





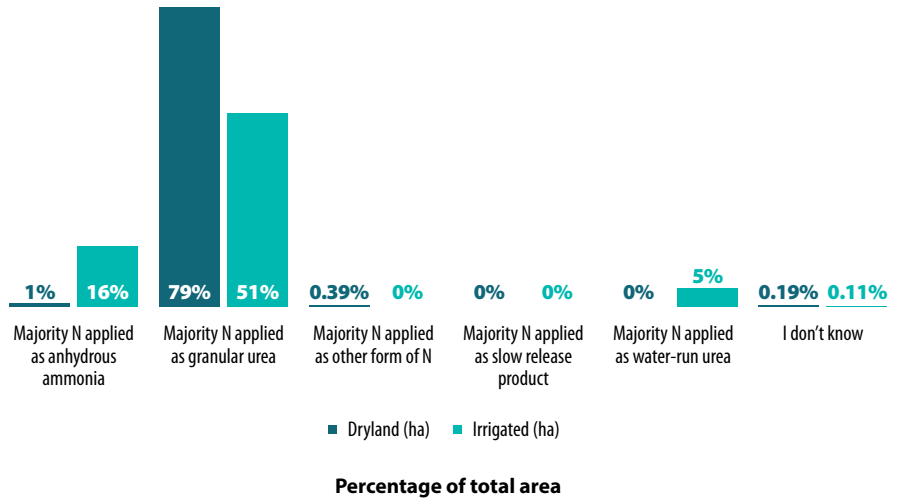
# ON-FARM PRACTICES AND ATTITUDES

48

In 2024-25, how were the cotton crops' nitrogen fertilizer requirements applied?

37 respondents

## NITROGEN FERTILISER FORM APPLIED



PHIL DAVIS





# ON-FARM PRACTICES AND ATTITUDES

## NUTRITION

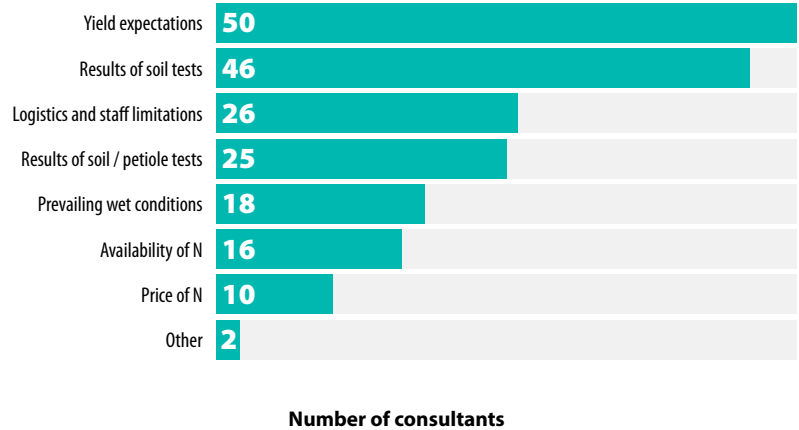
49

What factors influenced your decisions about nitrogen application (rates, timing, N budgets) in the 2024-25 season?

43 respondents

\*Other responses: 'back-to-back cotton' and '(It's) what we've always done'.

### FACTORS INFLUENCING DECISIONS ABOUT NITROGEN APPLICATION



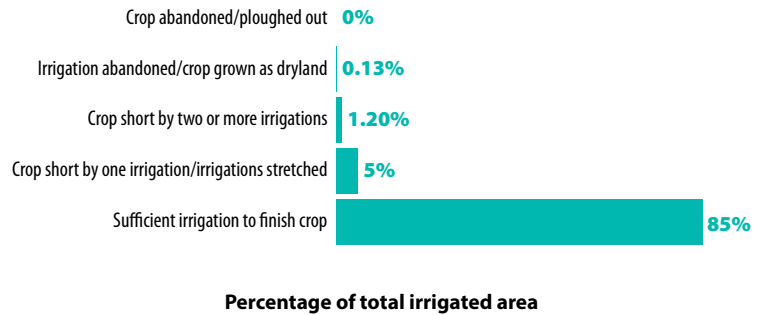
## WATER MANAGEMENT

50

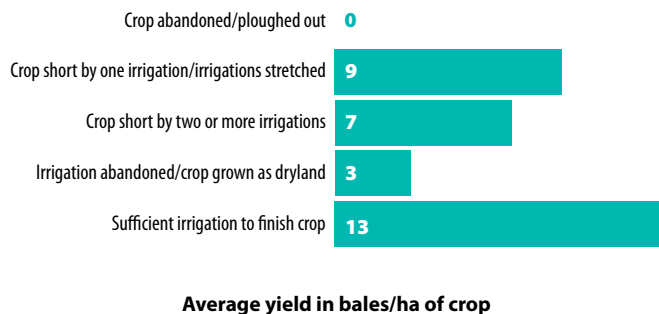
For the irrigated cotton hectares over which you consulted in 2024-25, how much area was affected by limited water and what was the average yield in each case?

38 respondents

### IRRIGATED AREA AFFECTED BY LIMITED WATER



### IRRIGATED YIELD AFFECTED BY LIMITED WATER





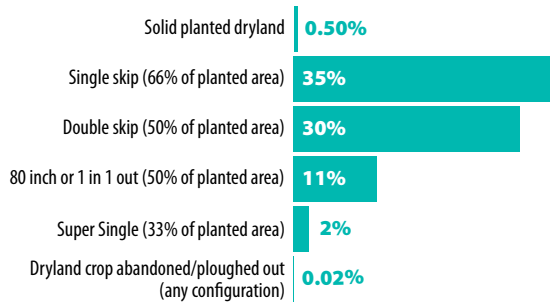
# ON-FARM PRACTICES AND ATTITUDES

51

For the dryland cotton hectares over which you consulted in 2024-25, how much area was affected by limited water and what was the average yield in each case?

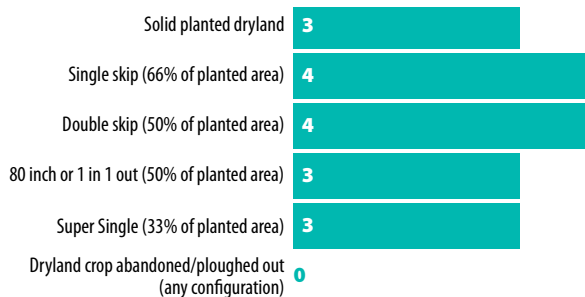
23 respondents

## DRYLAND AREA AFFECTED BY LIMITED WATER



Percentage of total dryland area

## DRYLAND YIELD AFFECTED BY LIMITED WATER



Average yield in bales/ha of crop



BILL BACK



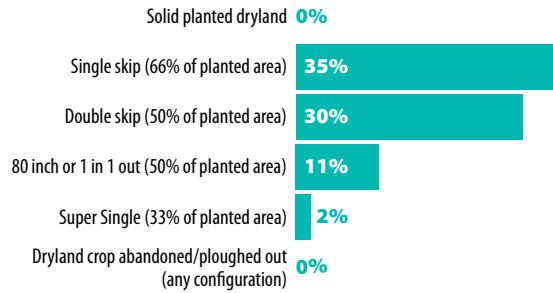
# ON-FARM PRACTICES AND ATTITUDES

52

For the dryland cotton hectares over which you consulted, please indicate your best estimate of yield for each situation.

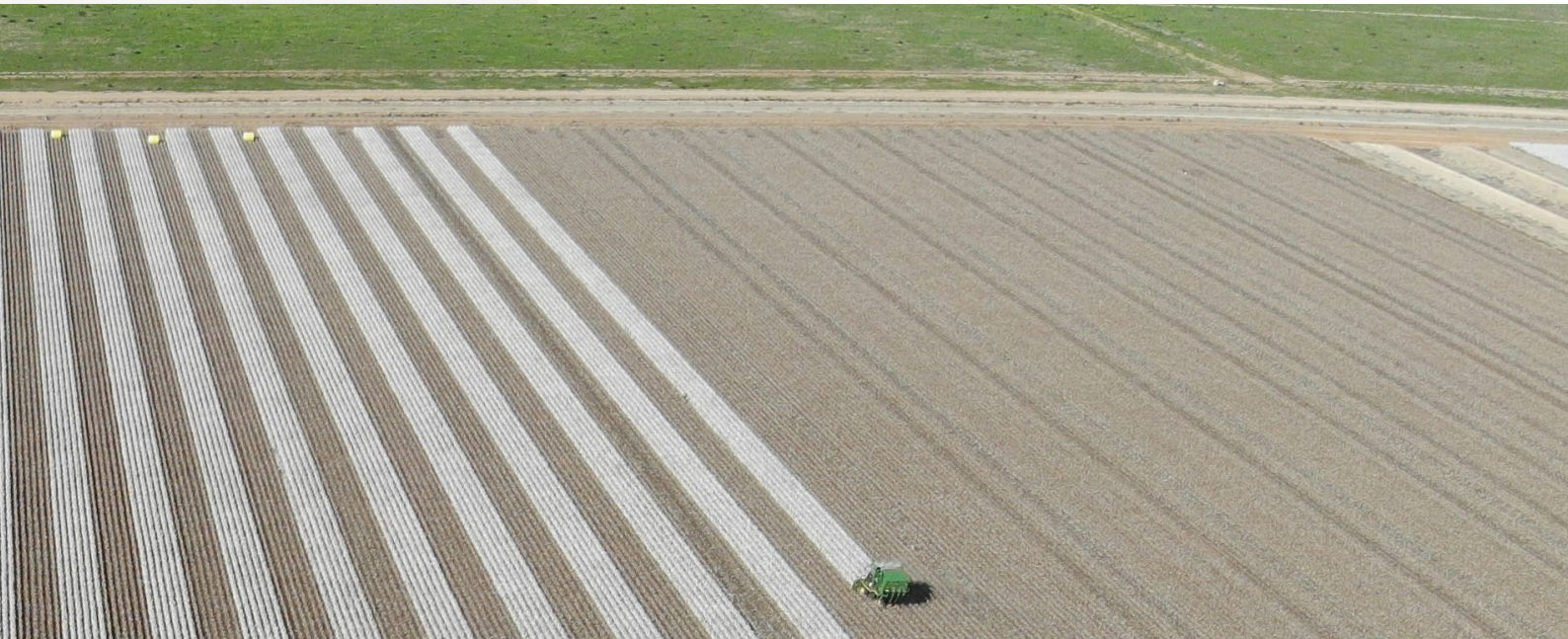
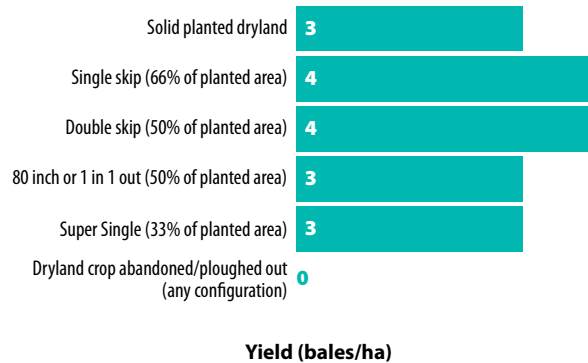
24 respondents

## DRYLAND COTTON AREA BY ROW CONFIGURATION



### Percentage of total dryland area

## DRYLAND COTTON YIELD BY ROW CONFIGURATION





# ON-FARM PRACTICES AND ATTITUDES

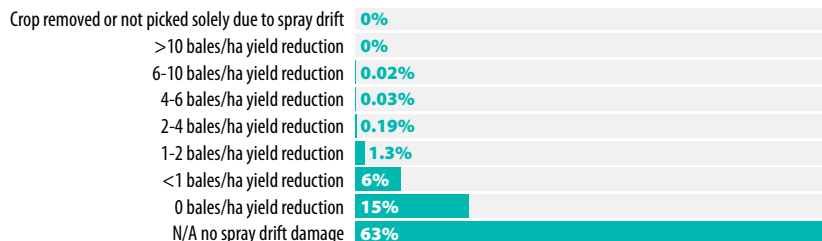
## YIELD IMPACT

53

What yield impacts do you estimate spray drift had on your clients' crops this season?

33 respondents

### IMPACT OF SPRAY DRIFT ON YIELD



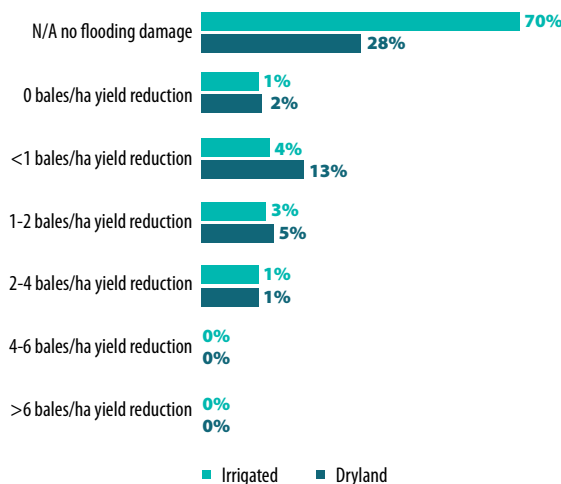
Percentage of area

54

What yield impacts do you estimate flooding had on your clients' cotton crops in 2024-25?

36 respondents

### IMPACT OF FLOODING



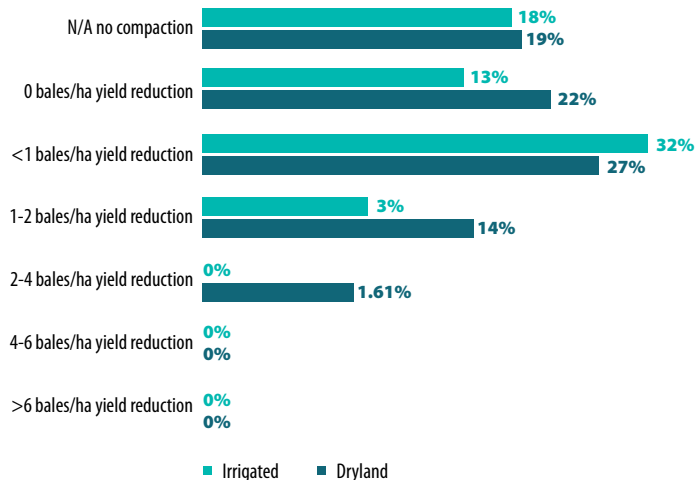
Percentage of total area

55

What impact do you estimate compaction had on your clients' cotton yields in 2024-25?

36 respondents

### IMPACT OF SOIL COMPACTION ON YIELD



Total survey Hectares



# SUSTAINABILITY

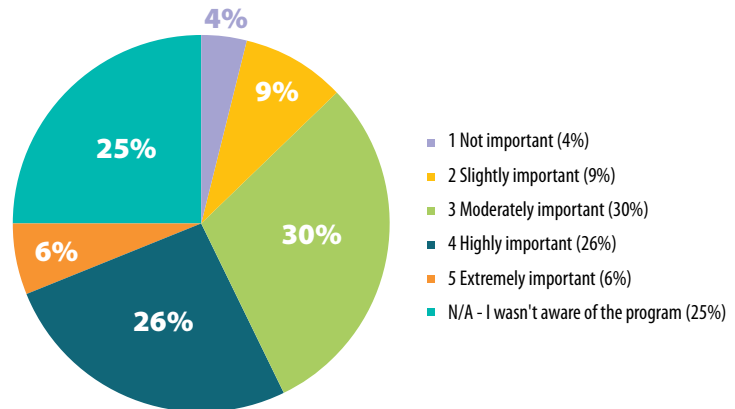
## SUSTAINABILITY

56

How important is cotton's "PLANET. PEOPLE. PADDOCK" sustainability program to the industry?

53 respondents

IMPORTANCE OF THE "PLANET.PEOPLE.PADDOCK" SUSTAINABILITY PROGRAM TO THE INDUSTRY

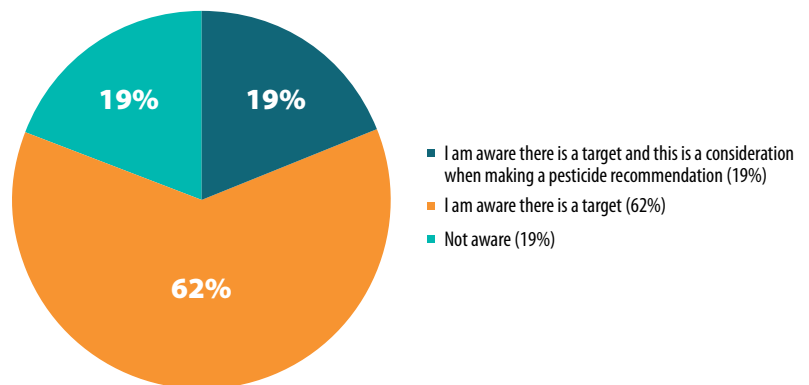


57

Are you aware of the cotton industry targets to reduce the environmental impact of pesticides (as measured by Environmental Toxic Load) by five per cent, every five years?

53 respondents

AWARENESS OF COTTON INDUSTRY TARGETS TO REDUCE ENVIRONMENTAL IMPACT OF PESTICIDES

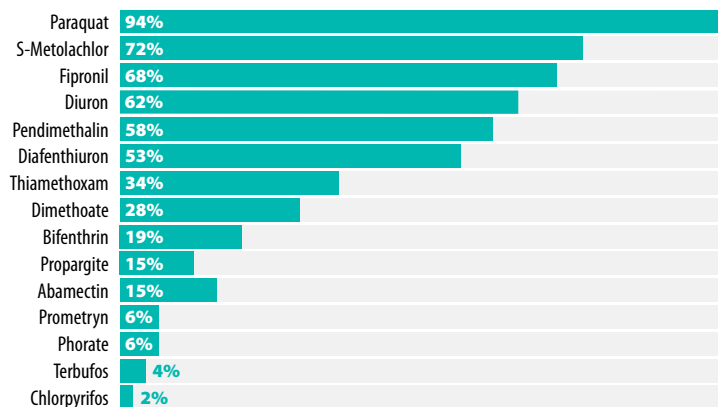


58

Of the following higher hazard pesticides, what do you estimate the impact would be if the use of these actives in cotton was no longer allowable?

54 respondents

PERCENTAGE OF CONSULTANTS WHO ESTIMATE THE IMPACT OF LOSS OF ACTIVES TO BE HIGH OR VERY HIGH





# APPENDICES

## APPENDIX 1

### QUESTION 15

Describe the 2024-25 cotton season in THREE words or less.

55 respondents

Different, challenging, rewarding.	Perfectly warm and profitable
Warm, sunny and unlike any other I have had in the south.	Smoother easier good
Long but great.	Up, up down
Good, wet, verticillium.	Initially challenging
Challenging, wet.	Outstanding, warm, whitefly
Wet, dry, quality.	Learning curve
Low pressure, easy,	Hot dry delayed
Variability, verticillium, wet.	Wet start and finish
Lost potential.	Long cloudy GVB
Milder, strong, rewarding.	Consistently good yields
Mild, wet, high yields.	Step change
Goldilocks season!	Very wet defoliation
Hail, hot, dry.	Kind
Average	Nice warm finish
Better than expected.	Dry long late
Really bad ending.	Challenging kinder rewarding
Challenging competitive rewarding	Challenging
Very challenging	Hail
Wet	Drift
Variable	Consistently hot rain
Challenging	Very good year
You're dreaming	Goldilocks exciting satisfying
Long	Strong till finished
Average temperature wet	Wet dry wet
Hot dry	Rewarding
Surprising rewarding challenging.	Different
Rewarding disease warm	Interesting
Highest yields ever	Hot
Well above average	Dry
Variable	Dry warm poor-establishment
Moderately decent yields	



## APPENDIX 2

### QUESTION 32

Thinking about your clients, please select the options applicable to changes in their practices in the past 5 years due to the impacts of disease. "Other" responses representing 5% of the identified changes.

Black root rot mapping of poor fields are being used to measure inoculum loads.

Some drastic strategies have included taking fields out of cotton for 9 years and rotating, cereals, maize, canola and now beans to see if we can reduce levels back to a 1 in 3-4 year rotation with cotton to keep the paddocks manageable, use of Magnet, crop rotation to include sorghum and rotate out of cotton for 2 years in each field, using commercial research company for disease maps as not every year is a white fly year, adoption of B3XRF varieties in cropping system, change in varieties to higher V rank, one client is now growing 714B3F again as it is outperforming any mainstream 'higher yielding' varieties and ALL new varieties.

Relasered/levelled country due to disease being exacerbated in low spots, 3 irrigated growers going to change cropping rotation next year as a result of this year going forward, Reduced yield expectation due to sprinkler (lateral move) irrigators and limitations with irrigation infiltration.

Changed crop destruction- farm never used to root cut, but now we do. It's not perfect as we farm 100% on the flat. No hills.

ANDREW MCKAY





# APPENDICES

## APPENDIX 3

### QUESTION 38

In your experience what weed species are currently or emerging as the biggest challenge to control in the irrigated system?

Glyphosate resistant tridax daisy and barnyard grass	Milk thistle No. 1 issue - glyphosate and 24D tolerance becoming resistance
Pigweed	
Feathertop Rhodes grass and fleabane resistance	Fleabane and Feathertop Rhodes grass can be managed.
Emerging - milk thistle as it's getting harder to control with glyphosate	Gly resistant barnyard grass and Feathertop Rhodes grass
Currently - barnyard grass IS resistant to glyphosate	Glyphosate resistant barnyard grass
Emerging - windmill grass is present but in very low amounts and extremely hard to kill	Tridax/Singapore daisy - tolerance to chemical and physiology
Glyphosate resistant sow thistle is emerging as a challenge	Cowvine and bellvine
Current - glyphosate resistant barnyard, liverseed grass, feathertop	Glyphosate resistant milk thistle
Glyphosate tolerant barnyard grass, glyphosate tolerant milk thistle	Glyphosate resistant barnyard grass
Glyphosate resistant milk thistle	Feathertop Rhodes grass and sweet summer grass glyphosate resistance
Controlling roundup resistant milk thistle close to cotton planting. If the opportunity to apply residuals before season change is not met, coupled with lack of spraying, the larger roundup resistant milk thistles are becoming more of a challenge to control. If growing XtendFlex® this is ok, but most of the cotton grown by our clientele are still growing Bollgard 3 varieties.	Flaxleaf fleabane, glyphosate resistant barnyard grass, Feathertop Rhodes grass, sow thistle
Resistant sow thistle, resistant barnyard grass, Feathertop Rhodes grass, fleabane and tall fleabane.	Disease
Tolerant bellvine, peachvine, red pigweed	Glyphosate resistant barnyard grass, Feathertop Rhodes grass (will eventually have Group A (1) resistance to both, if not already), vines (hard to kill with Glyphosate), mature sow thistle from winter in summer fallows (likely glyphosate or 24D resistant), pigweed (hard to kill, could be glyphosate resistance)
Resistant fleabane	Feathertop Rhodes grass, windmill grasses are becoming an issue and they are either resistant or naturally resistant to Glyphosate
Resistant ryegrass	Glyphosate + Group A (1) + paraquat multi-resistant ryegrass
Resistant feathertop	Glyphosate resistant tiger barnyard grass
Resistant pigweed	Glyphosate resistant windmill grass
Glyphosate resistant Feathertop Rhodes grass	Glyphosate tolerant Feathertop Rhodes grass
Glyphosate resistant awnless barnyard grass	Still a persistent presence of Glyphosate resistant ryegrass/fleabane/Feathertop Rhodes grass however thanks to the introduction of the XtendFlex® traits, we now have more options.
Glyphosate resistant fleabane	Glyphosate resistant barnyard grass and milk thistle
Glyphosate resistant common sow thistle	Group 1 resistant barnyard grass
Annual ryegrass (resistant) and fleabane (tolerant).	
Windmill grass (tolerant) to a lesser extent.	
Glyphosate resistant grasses (feathertop, barnyard)	
Glyphosate resistant Feathertop Rhodes grass, barnyard grass, fleabane and milk thistle.	



# APPENDICES

## APPENDIX 3 CONTINUED

Due to the fact that all of my growers are using Stomp® at planting and Dual Gold® in crop as a residual layby herbicide we have seen a major decrease in resistant weeds though especially grasses. A new grower that I had did not use Stomp® or Dual Gold® and was using 3-4 Verdict® or Select® applications in crop for glyphosate resistant barnyard grass and Feathertop Rhodes grass. After trialling the Stomp® at planting and Dual Gold® on one field in the first year I was consulting to them they saw a huge reduction in grass weeds and after 2 more seasons of doing this on the rest of their 2 farms are no longer needing to use either Verdict® or Select® in crop and no longer are having issues with glyphosate resistant grass. We still have a few plants show up in fields but at a level we can live with and that is not affecting yield.

- ..... Feathertop Rhodes grass
- ..... Glyphosate resistant milk thistle
- ..... Glyphosate resistant Feathertop Rhodes grass
- ..... Bell vine
- ..... Brown beetle grass, (waiting test results for resistance testing), pigweed, milk thistle, peachvine (harder to get effective control once past certain size) and bladder ketmia
- ..... Feathertop Rhodes grass
- ..... Windmill grass
- ..... Peach vine
- ..... Fleabane
- ..... Ryegrass - Glyphosate resistance, increasing pressure on clethodim resistance with poor climate conditions which will restrict the ability for Glufosinate to be useful.
- ..... Barnyard grass- increasing tolerance of glyphosate, seeing an increase in verdict use to help manage barnyard to take the pressure off glyphosate
- ..... Blow away grass - wet springs have increased the pressure over summer of blow away grass generations blowing in and setting seed. Still very susceptible but concerns over its persistent exposure to herbicides through the whole season could cause issues without rotations
- ..... Feathertop Rhodes grass, barnyard grass, ryegrass, milk thistle, fleabane
- ..... Glyphosate resistant - Feathertop Rhodes grass, barnyard grass, milk thistle. Peach vine, bell vine, button grass, liverseed grass, tar vine, flaxleaf fleabane, tall fleabane, gooseberry, caustic weed, prickly lettuce,
- ..... Glyphosate resistant milk thistle
- ..... Glyphosate and Clethodim resistant windmill grass
- ..... Glyphosate tolerant fleabane

- ..... Glyphosate tolerant pigweed
- ..... Volunteer cotton, glyphosate tolerant barnyard grass
- ..... Glyphosate resistant tridax daisy and barnyard grass
- ..... Barnyard grass glyphosate resistant
- ..... Windmill grass glyphosate resistant
- ..... Sow thistle glyphosate resistant
- ..... Glyphosate resistant barnyard grass
- ..... Feather Top Rhodes grass
- ..... Red pigweed
- ..... Bell vine
- ..... Peach vine
- ..... Glyphosate resistant ryegrass & glyphosate resistant fleabane
- ..... Glyphosate resistant milk thistle, barnyard grass glyphosate resistant/tolerant, Feathertop Rhodes grass, fleabane
- ..... Glyphosate tolerant barnyard grass
- ..... Glyphosate Feathertop Rhodes grass
- ..... Glyphosate & Group 1 – windmill grass
- ..... Glyphosate - fleabane
- ..... Glyphosate & Group 1 - ryegrass
- ..... Glyphosate & Group 1 – Feather top Rhodes grass
- ..... Glyphosate resistant milk thistle
- ..... Glyphosate resistant barnyard grass, liverseed grass, Feathertop Rhodes grass
- ..... Barnyard grass
- ..... Ipomea vines
- ..... Off label and repeated applications
- ..... Milk thistle glyphosate resistance, milk thistle group 4 tolerance
- ..... XtendFlex® volunteers
- ..... Glyphosate resistant awnless barnyard grass
- ..... Glyphosate tolerant Qld bluegrass
- ..... Glyphosate resistant sow thistle
- ..... Windmill grass and Feathertop Rhodes grass
- ..... Windmill grass - difficult to kill with anything!
- ..... Milk thistle becoming increasingly difficult to control
- ..... The Noogoora burr population outside of the farmed areas - I believe this is a key part of the verticillium spreading particularly post flood
- ..... Volunteer / ratoon cotton in no/low till systems or overheads planted on the flat (where root cutting isn't very effective)
- ..... Bell Vine, Feathertop Rhodes grass, barnyard grass, nutgrass



# APPENDICES

## APPENDIX 4

### QUESTION 39

In your experience what weed species are currently or emerging as the biggest challenge to control in the dryland system?

Currently - Fleabane (requires residual herbicides, adds costs and risk)	Gly resistant fleabane, barnyard Grass and Feathertop Rhodes grass
Currently - barnyard grass and feathertop (resistant to Glyphosate, requires residual + group 1 + double knock	Cow vine and bell vine Fleabane
Emerging - milk thistle (becoming harder to kill with glyphosate	Glyphosate resistant milkthistle Flaxleaf fleabane, sow thistle, Feathertop Rhodes grass
Glyphosate resistant sow thistle is emerging as a challenge	Glyphosate and Group A (1) resistance Feathertop Rhodes grass and awn less barnyard grass, as well as glyphosate resistant milk thistle, and paraquat resistant fleabane.
Glyphosate resistant barnyard, liverseed grass, Feathertop Rhodes grass	Glyphosate resistant barnyard grass, Feathertop Rhodes grass (will eventually have Group A (1) resistance to both, if not already), vines (hard to kill with glyphosate), mature sow thistle from winter in summer fallows (likely glyphosate or 24D resistant), pigweed (hard to kill, could be glyphosate resistance)
Glyphosate tolerant milk thistle/sowthistle	Ryegrass, windmill grass, cud weed
Glyphosate resistant milk thistle, Feathertop Rhodes grass, glyphosate resistant ryegrass	In dryland, fleabane still remains an issue though camera sprayers and glufosinate have reduced this. Feathertop Rhodes grass is an issue but gaining better control with Dual Gold®
One of the biggest challenge weeds to control is feather top Rhodes grass in dryland paddocks. If the Dual Gold® is not applied in August then the incidence of Feathertop Rhodes grass within the dryland paddocks around the Gwydir and Mungindi is high. Avoiding the blow outs of this weed is critical in our dryland cotton system	Glyphosate resistant Feathertop Rhodes grass Glyphosate resistant Queensland bluegrass Glyphosate + paraquat resistant tall fleabane
Resistant sow thistle, resistant barnyard grass, Feathertop Rhodes grass, fleabane and tall fleabane.	Windmill grass, Feathertop Rhodes grass and milk thistle
Tolerant bell vine, peach vine, red pigweed	Feathertop Rhodes grass
Resistant fleabane	Barnyard grass
Resistant ryegrass	Fleabane
Resistant Feathertop Rhodes grass	Feathertop Rhodes grass, barnyard grass, ryegrass, milk thistle, fleabane
Resistant windmill grass	Glyphosate resistant - feathertop, barnyard grass, milk thistle. Peach vine, bell vine, button grass, liverseed grass, tar vine, flaxleaf fleabane, tall fleabane, gooseberry, caustic weed, prickly lettuce
Glyphosate resistant Feathertop Rhodes grass	Barnyard grass, feathertop glyphosate resistant
Glyphosate resistant awnless barnyard grass	Sow thistle glyphosate resistant
Glyphosate resistant fleabane	Glyphosate resistant barnyard grass
Glyphosate resistant common sow thistle	Feathertop Rhodes grass
Glyphosate resistant grasses (Feathertop Rhodes grass, barnyard grass)	Red pigweed
Glyphosate resistant milk thistles.	
Milk thistle - No. 1 issue (just numbers but also resistance)	
Annual ryegrass - has spread through western zones. Can find in Mungindi, Dirranbandi, Bullarah everywhere now. It will likely adapt to survive longer in summer like occurs in the Liverpool plains.	



# APPENDICES

## APPENDIX 4 CONTINUED

Bell vine	Sow thistle
Peach vine	Awnless barnyard grass
Glyphosate resistant milk thistle, Feathertop Rhodes grass, barnyard grass glyphosate resistant and fleabane.	Milk thistle glyphosate resistance, milk thistle group 4 tolerance, Feathertop Rhodes grass and barnyard control
Glyphosate tolerant barnyard grass	Glyphosate resistant awnless barnyard grass
Glyphosate tolerant Feathertop Rhodes grass	Glyphosate tolerant Qld bluegrass
Glyphosate resistant milk thistle	Glyphosate resistant tall fleabane
Glyphosate resistant barnyard grass, liverseed grass, Feathertop Rhodes grass	Glyphosate resistant sow thistle
Feather top Rhodes grass	Windmill and Feathertop Rhodes grass and fleabane
Barnyard grass	Feathertop Rhodes grass
Ipomea vines	



MADISON DORROUGH



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