



Australian Government

Cotton Research and  
Development Corporation

# Qualitative report on the **2012–13** cotton season: a survey of consultants



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## 1 BACKGROUND

### COVERAGE

Data was collected by Crop Consultants Australia Inc. from 46 cotton consultants, who answered some or all of the questions about their own practices and attitudes, as well as those of their grower clients. 43 of the consultants had a completion rate greater than 70%.

The consultants represented 452 growers (55% of the industry's growers) and covered 231,094 hectares: 54% of the Australian cotton production area for the 2012/13 season (not adjusted for row spacings). This is based on Cotton Australia's 2012/13 Australian Cotton Production figure of 425,786 hectares.

### METHODOLOGY

The survey consisted of 69 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 in May and June 2013, with questions referring to the 2012–13 cotton season.

### 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.

### ACKNOWLEDGEMENT

Thank you to the consultants who took the time and trouble to complete this survey. In previous years the data in this survey have provided valuable information for

researchers and industry organisations in planning and carrying out projects.

### DISCLAIMER

The Cotton Research and Development Corporation (CRDC) provide 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 2013 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 these data; however, the data were provided by individual consultants and agronomists and therefore are subject to the associated constraints.

### DATA ANALYSIS

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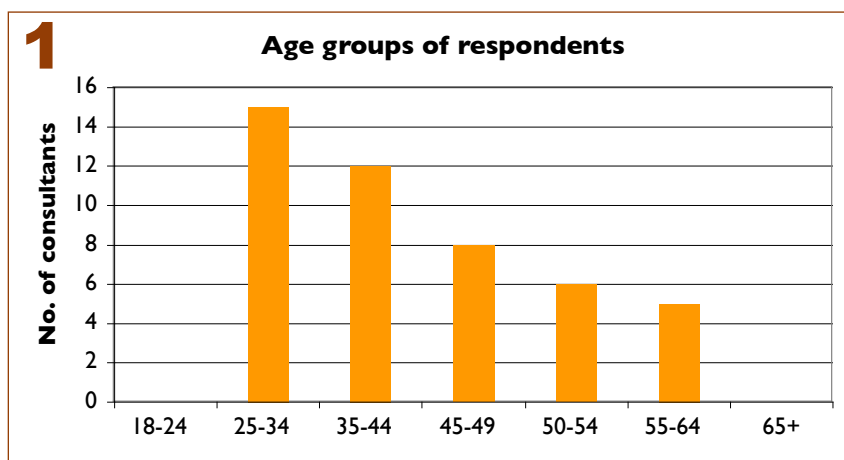
# 2 THE CONSULTANTS & THEIR CLIENTS

## ABOUT THE CONSULTANTS

### QUESTION 1

What is your age group

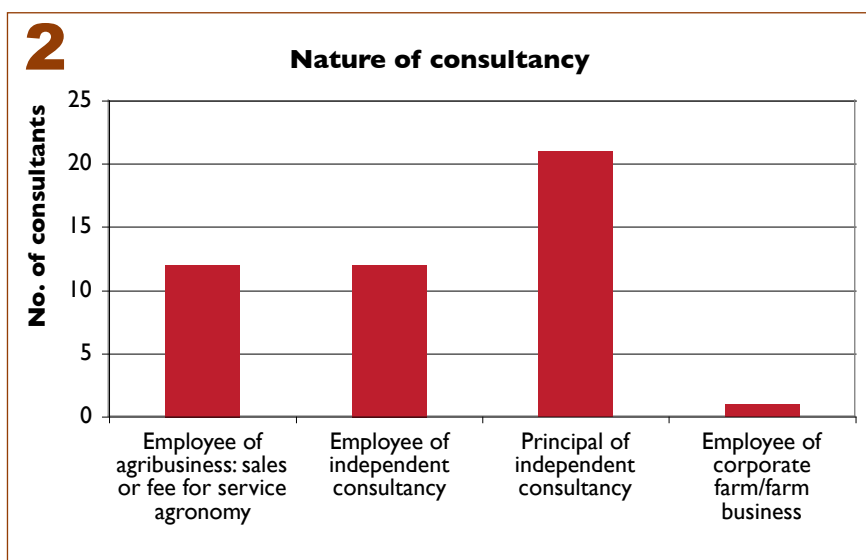
(46 respondents)



### QUESTION 2

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

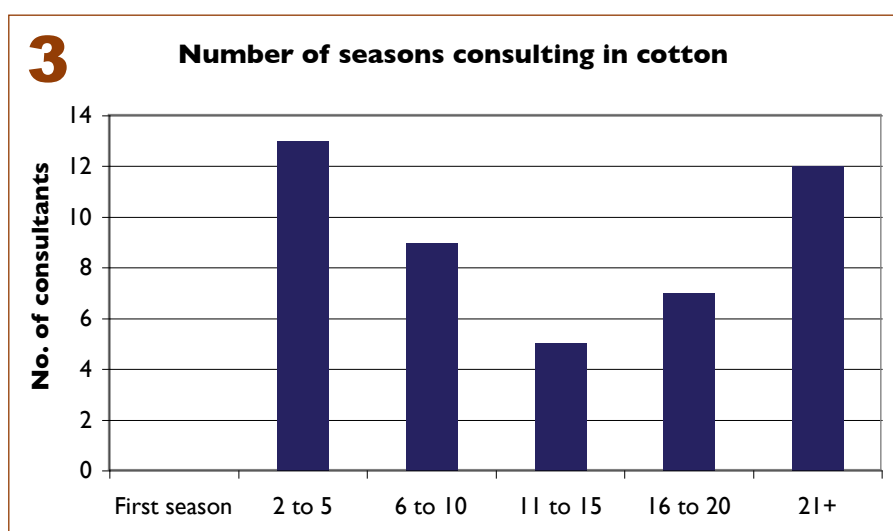
(46 respondents)



### QUESTION 3

For how many seasons have you worked consulting in cotton?

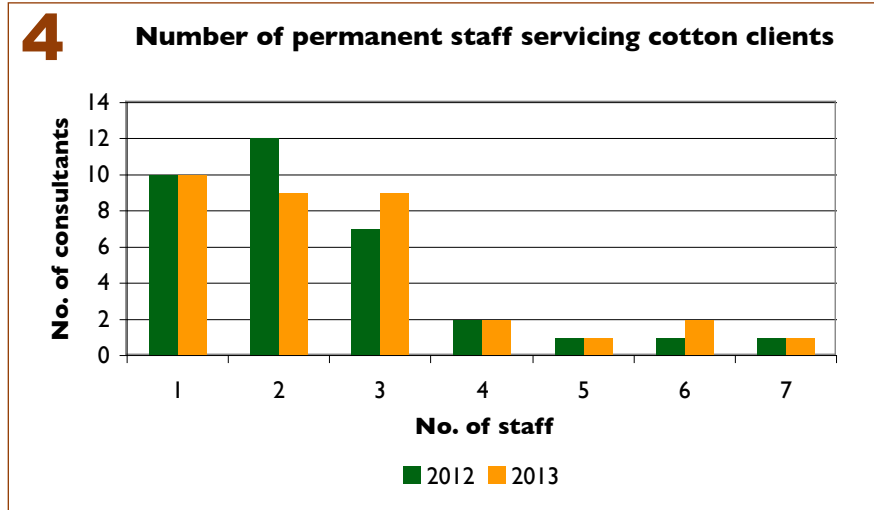
(46 respondents)



#### QUESTION 4

How many permanent staff were employed in your business to service cotton clients in each of the following years?

(34 respondents)



#### QUESTION 5

How many part time/casual staff were employed in your business to service cotton clients in each of the following years?

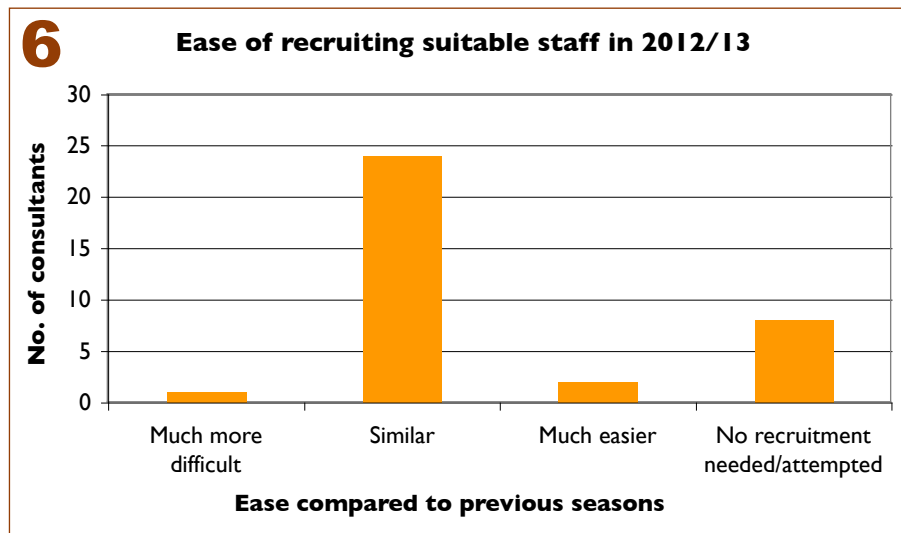
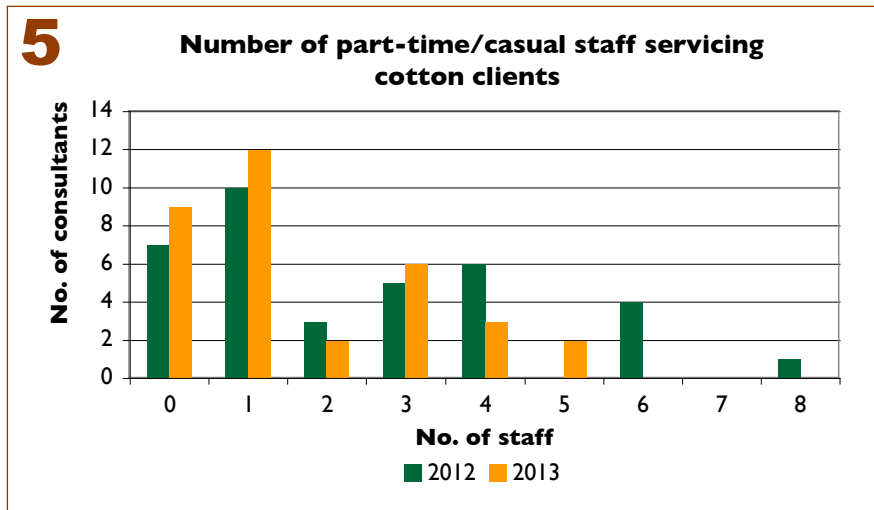
(35 respondents)

**Comment** From 2012 to 2013 there were 6 more permanent staff but 15 fewer part-time staff amongst the consultants.

#### QUESTION 6

With reference to recruitment for the 2012/13 season, how hard was it to find suitable applicants and fill positions?

(35 respondents)



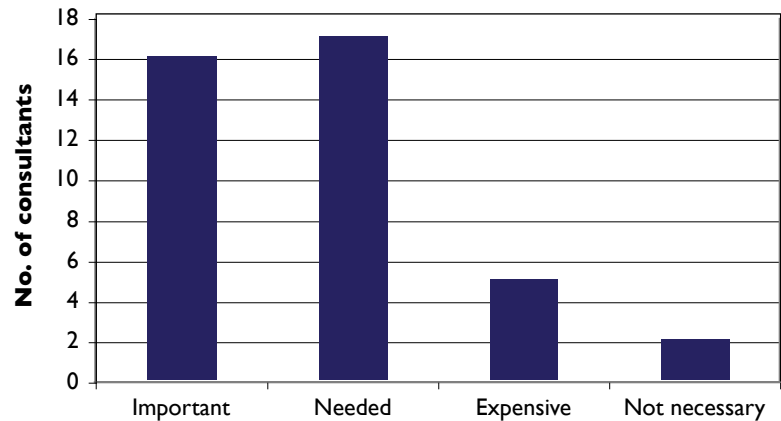
### QUESTION 7

Describe your overall attitude towards professional indemnity insurance.

(40 respondents)

**Note** This graph aggregates the most common responses. Please see the appendix for individual responses.

### 7 Attitude to professional indemnity insurance



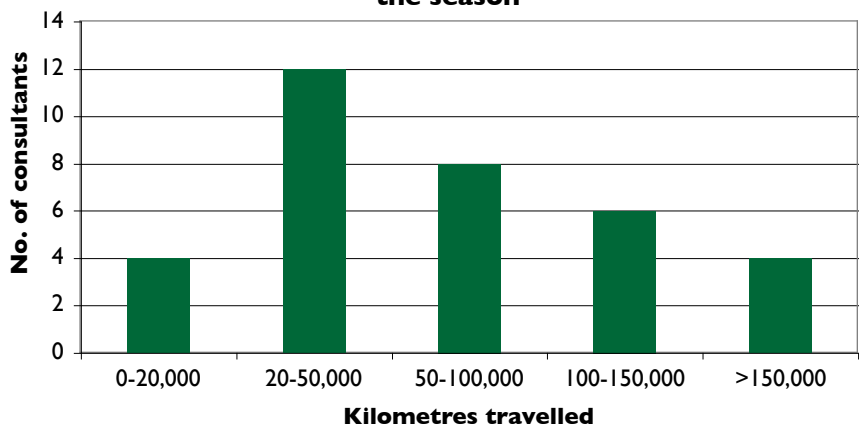
### QUESTION 8

Have you or the business had a claim for damages brought against you by a cotton client in association with services provided in cotton?

(35 respondents)

32 consultants indicated that they had not had damages claims brought against them; 3 had damages claims, but more than 5 years before.

### 9 Distance travelled for cotton consulting during the season



### QUESTION 9

In the course of the 2012/13 cotton season, how many kilometres in total were driven in your vehicles to service cotton clients?

(34 respondents)

### QUESTION 10

If you flew to service cotton clients, over the course of the 2012/13 cotton season, how much engine time was used to service cotton clients? (total engine hours)

(3 respondents)

The 3 respondents reported engine flying time of 10, 40 and 76 hours, respectively.

### QUESTION 11

How many COTTON clients did you have in 2012/13?

(33 respondents)

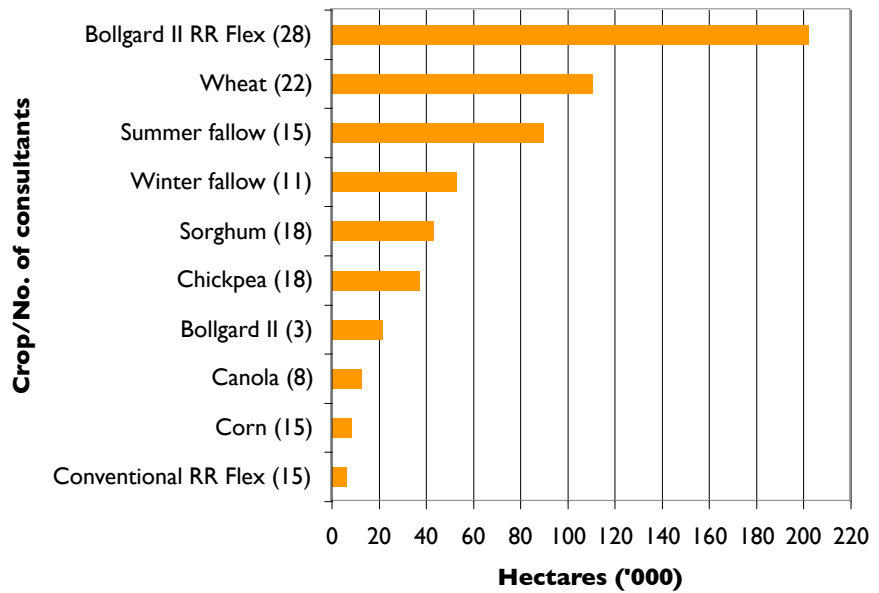
These consultants had a total of 453 cotton clients, ranging from one to 52 for each consultant. The average number of clients per consultant was 13.7.

### QUESTION 12

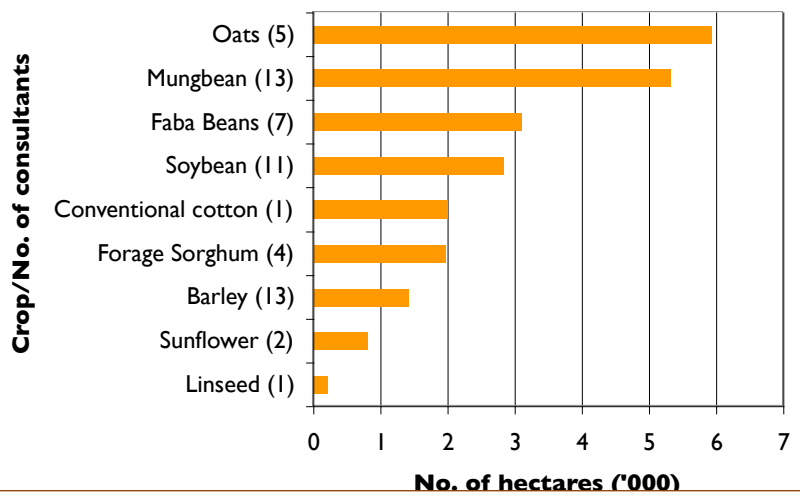
On the farms of your cotton clients, please list the approximate hectares dedicated to each type of crop the business provided advice in 2012/13. (Consider Winter 2012 and Summer 2012/13)

(32 respondents)

## 12a Top ten crops on which advice was given



## 12b Other crops on which advice was given



### QUESTION 13

If requested, would you offer services for non-Bt cotton?

(31 respondents)

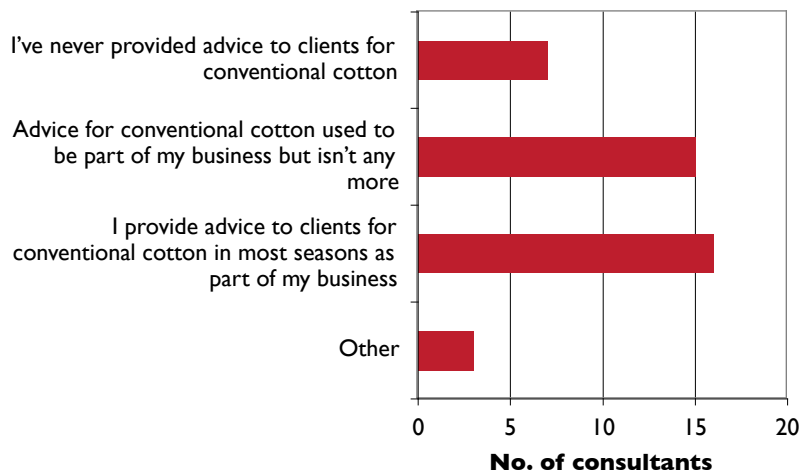
Of the respondents, 26 would offer these services, while 5 would not.

### QUESTION 14

How would you describe your experience in providing client services for non-Bt cotton?

(41 respondents)

## 14 Provision of advice on conventional cotton



### QUESTION 15

Describe your familiarity with how profitable cotton is for your clients. Allocate the number of your clients to these statements.

(32 respondents)

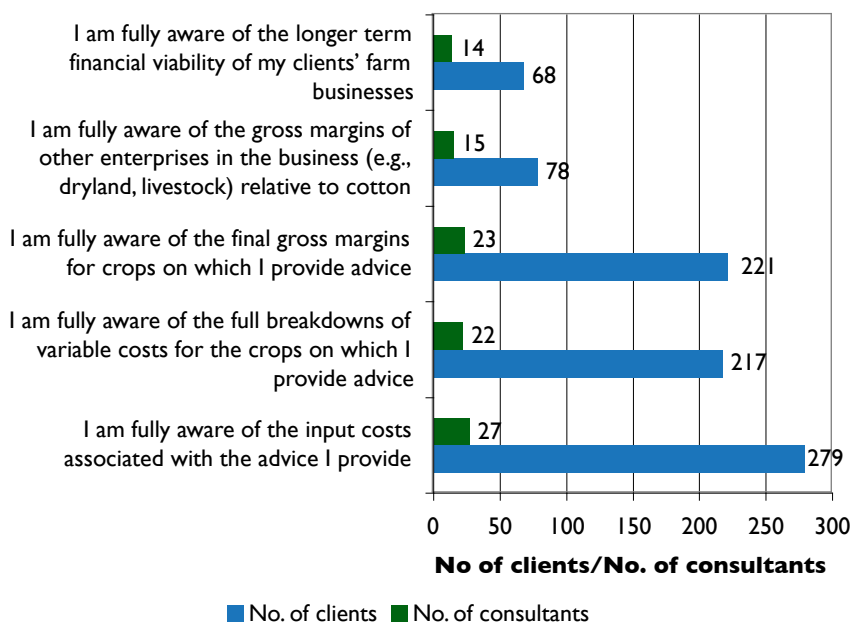
### QUESTION 16

In one word, describe the strongest driver of profitability from cotton for your clients.

(41 respondents)

27 of the 41 respondents nominated 'Yield' as the strongest driver of profitability. In second place was 'Water', nominated by 7 respondents, with other parameters nominated by 7 individuals.

## 15 Familiarity with clients' level of profitability for cotton



## PROFESSIONAL DEVELOPMENT AND INFORMATION SOURCES

### QUESTION 17

Please list up to 5 publications and/or websites that are in your opinion the most valuable sources of information for cotton consulting.

(37 respondents)

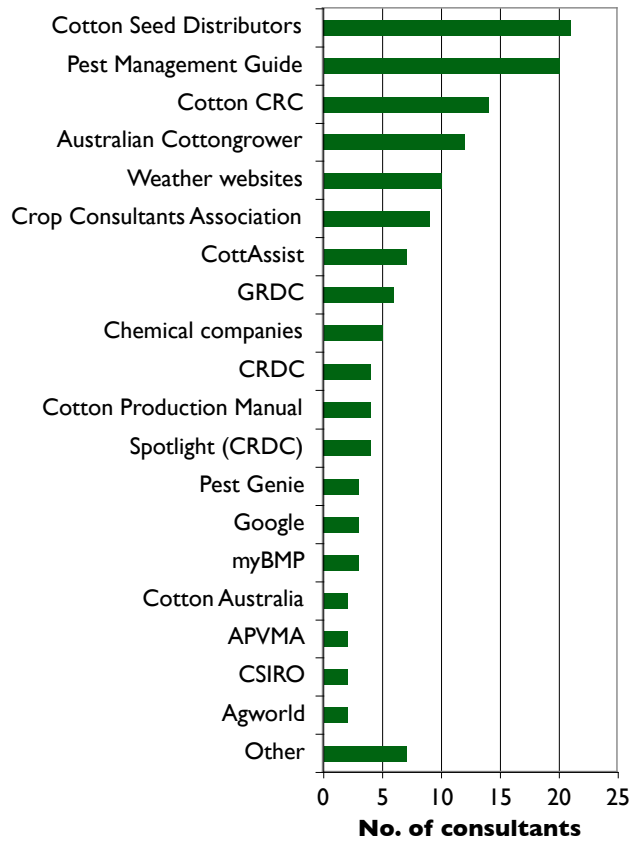
### QUESTION 18

Thinking about the following technologies and social media, which best describes your use of each?

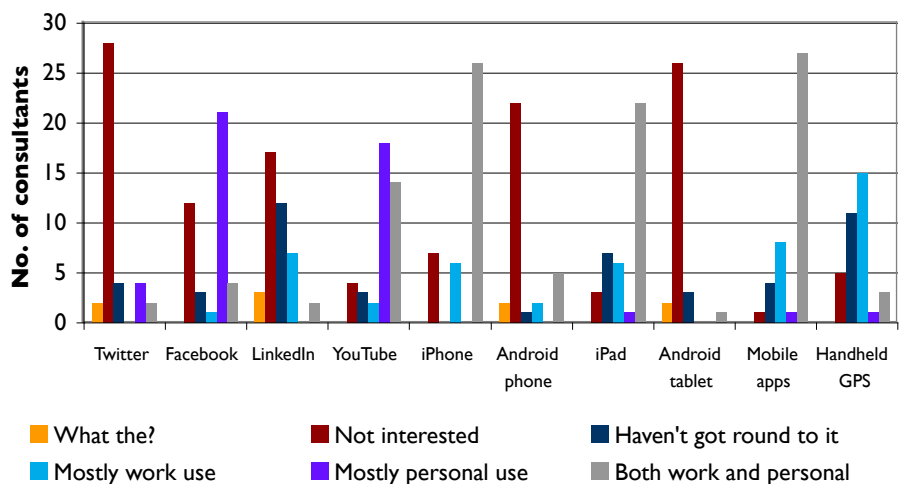
(41 respondents)

**Comment** The most widely used for work purposes was Handheld GPS, followed by Mobile Apps, then LinkedIn. The most widely used for both personal and work purposes were mobile apps, iPhone and iPad.

### 17 Publications and websites of most use in cotton consulting



### 18 Use of communication technologies and social media



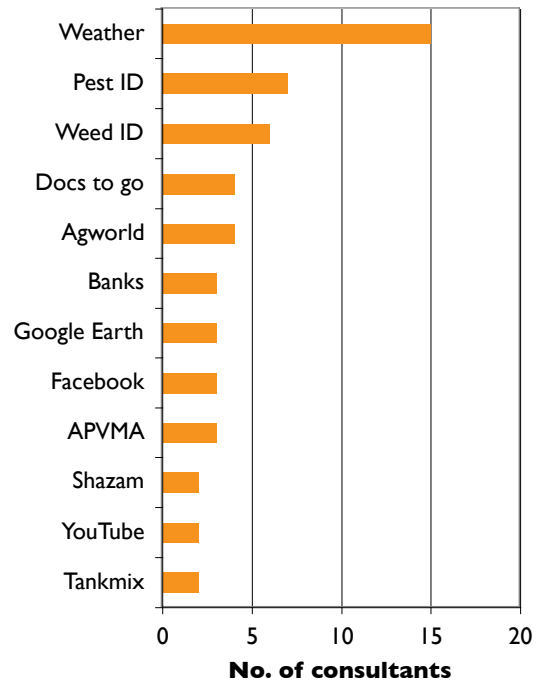
## QUESTION 19

If you use apps on your mobile device, please list your favourites (for either work or personal use).

(29 respondents)

**Comment** Consultants also nominated podcasts and a wide range of additional apps.

## 19 Apps used on mobile devices



## ABOUT THE CLIENTS

### QUESTION 20

In which region/s are the COTTON clients based (number of growers)?

(33 respondents)

**Comment** One consultant also nominated a client in Cunnamulla.

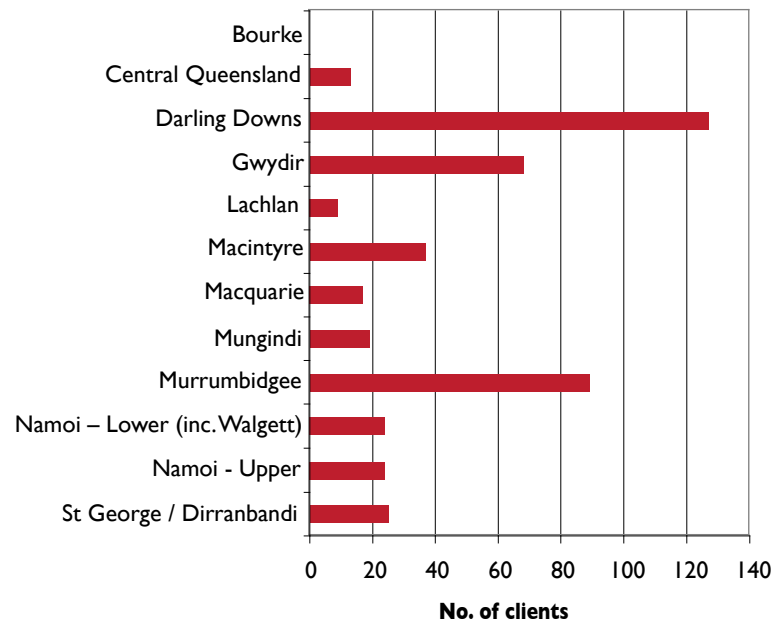
### QUESTION 21

How many hectares of COTTON (total area, not adjusted for row spacings) did your clients grow in the 2012/13 season?

(33 respondents)

Clients grew a total of 231,094 hectares.

## 20 Location of clients



**QUESTION 22**

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

(31 respondents)

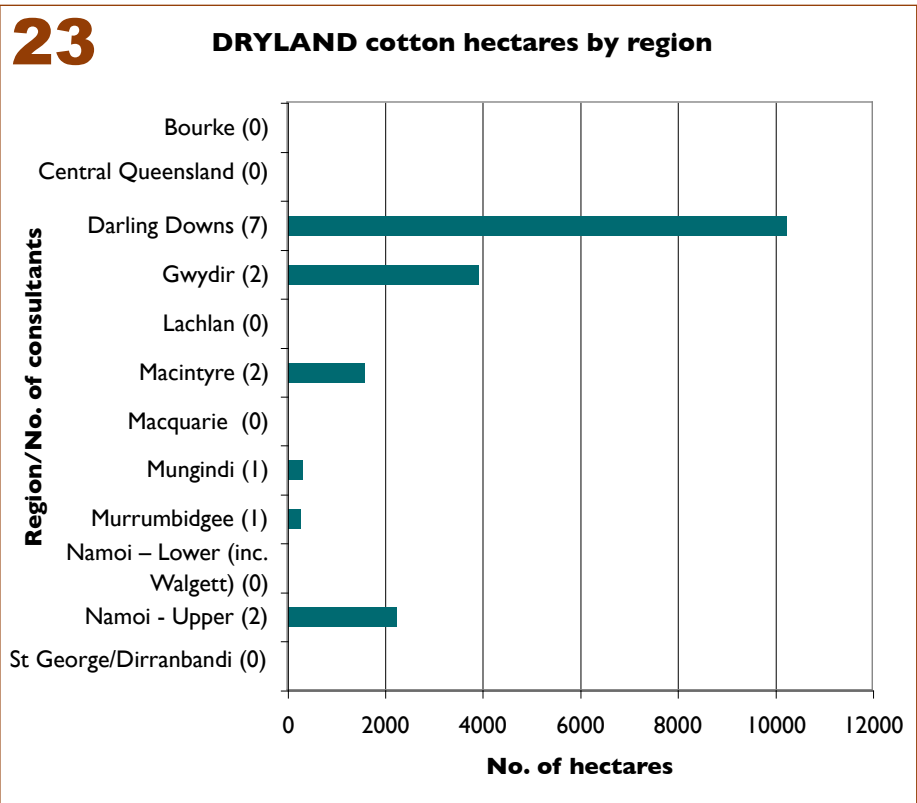
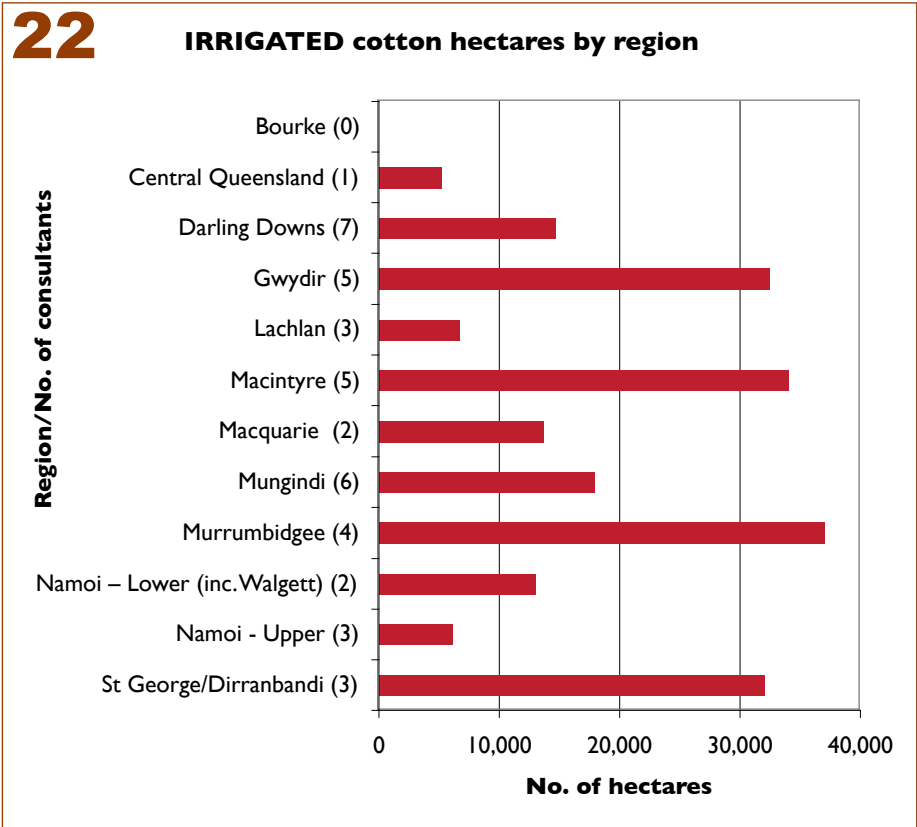
**Note** There was a total of 212,654 irrigated cotton hectares in the survey.

**QUESTION 23**

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

(15 respondents)

**Note** There was a total of 18,440 dryland cotton hectares in the survey.



### QUESTION 24

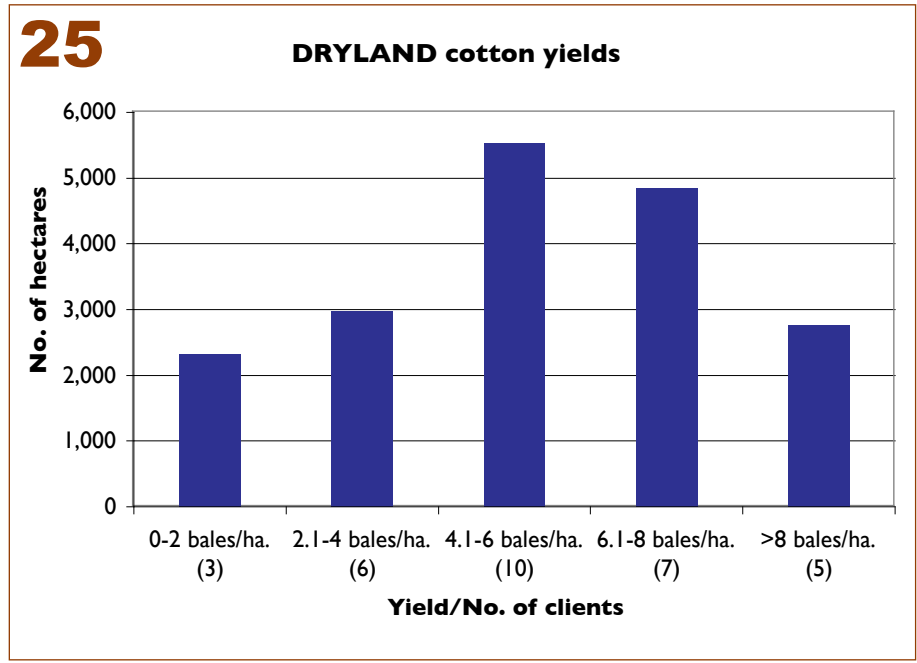
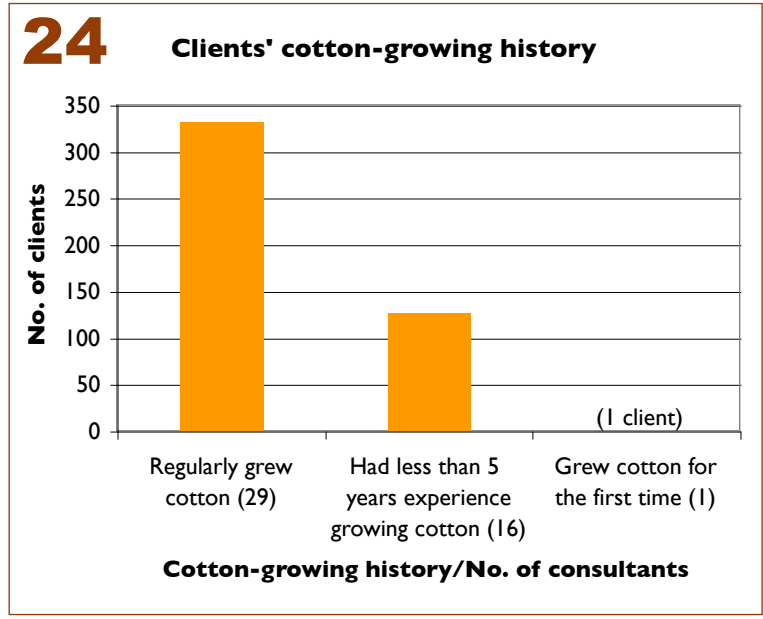
Of your cotton clients in 2012/13, how many fitted in these categories?

(34 respondents)

### QUESTION 25

Across the dryland cotton hectares on which your business consulted in 2012/13, how many hectares (not adjusted for row spacing) yielded in these categories?

(15 respondents)



# ON-FARM PRACTICES & ATTITUDES

## QUESTION 26

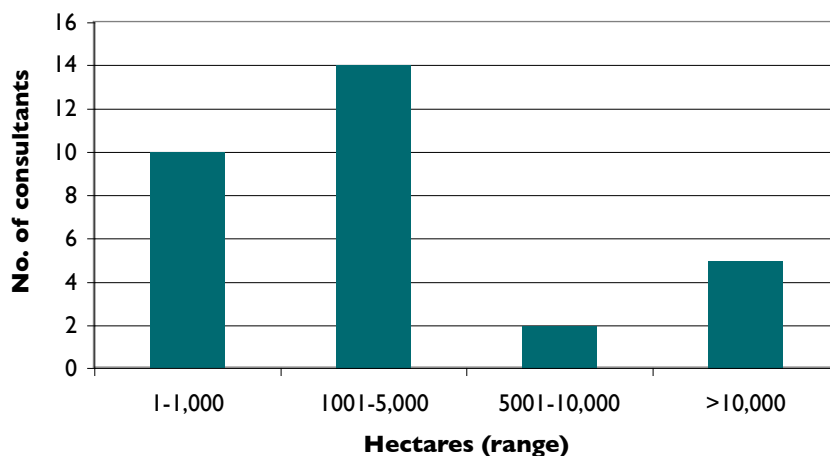
Of the IRRIGATED cotton hectares, how many were back-to-back cotton (cotton grown in the same field in the 2011/12 and 2012/13 season?)

(31 respondents)

**Comment** A total of 130,167 hectares were back-to-back cotton: 61% of the hectares in this survey.

### 26

#### Back-to-back irrigated cotton hectares



## QUESTION 27

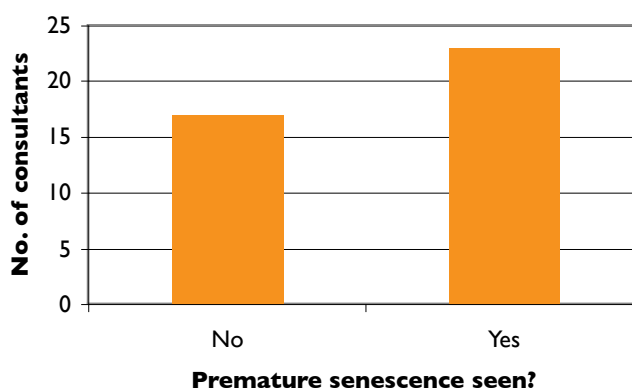
How many hectares of cotton crops exhibited symptoms consistent with soil compaction at some stage during the 2012/13 season?

(28 respondents)

28 consultants reported that a total of 64,088 hectares of irrigated cotton (30% of hectares in the survey) exhibited symptoms consistent with soil compaction, while 8 consultants reported a total of 5,730 hectares of dryland cotton (31% of survey hectares) with these symptoms.

### 28

#### Evidence of premature senescence



## QUESTION 28

Did you see any evidence of premature senescence during 2012/13?

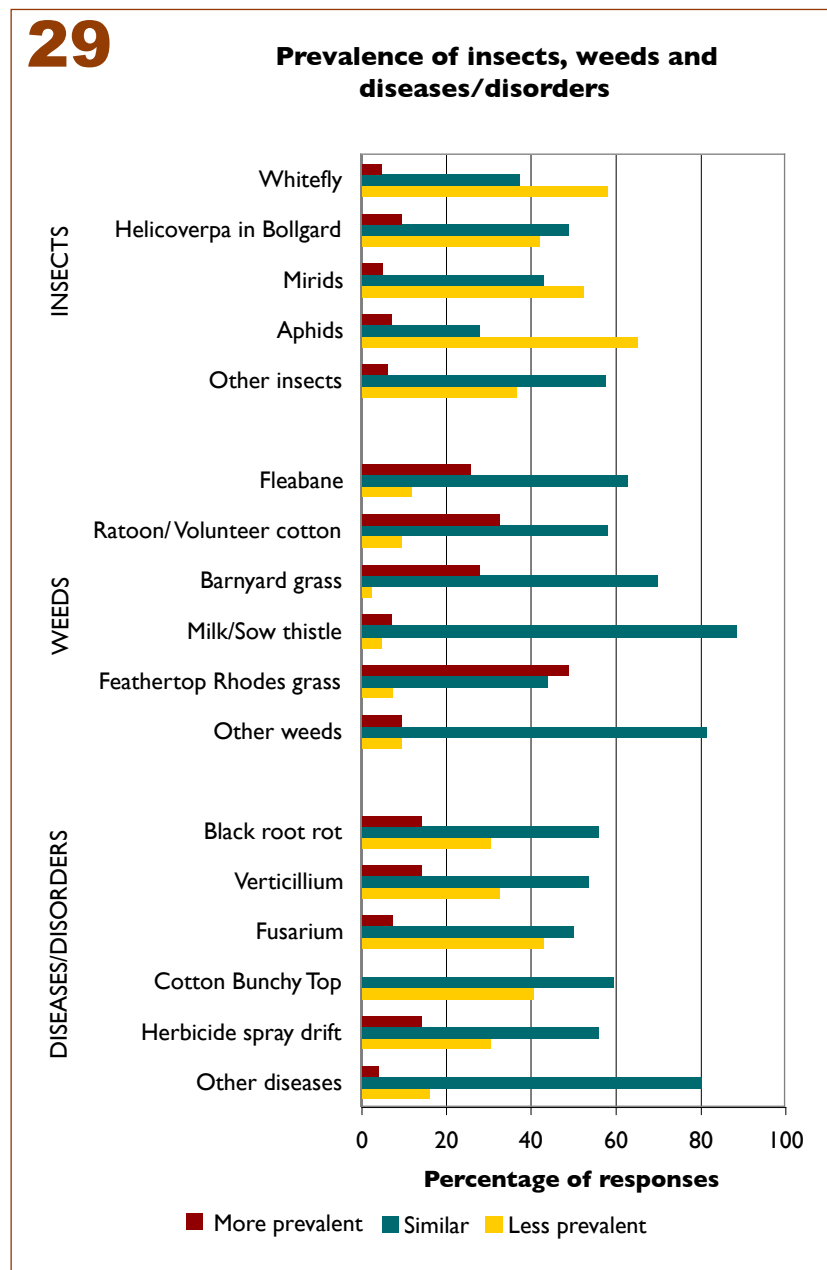
(40 respondents)

## INSECTS, WEEDS AND DISEASES

### QUESTION 29

In comparison with the 2011/12 season, what was the prevalence of insects, weeds and diseases/disorders in the 2012/13 season?

(43 respondents)

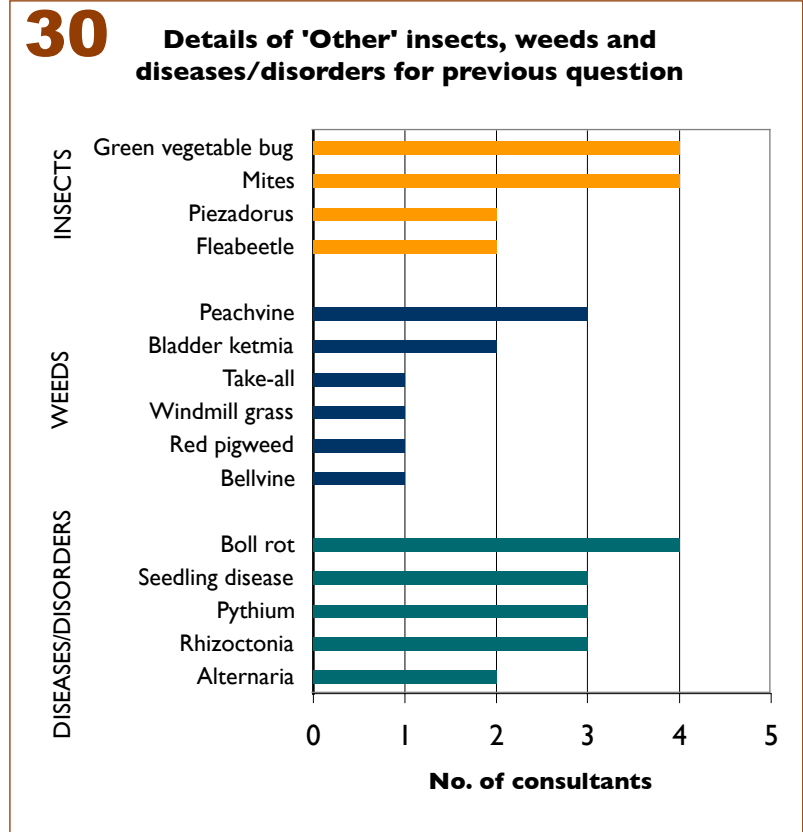


### QUESTION 30

In relation to Question 29, list additional insects, weeds and diseases.

(11 respondents for insects, 7 for weeds and 8 for diseases/disorders)

**Comment** In addition to the 'Other' insects shown in this graph, the following comments were made by consultants: predatory beetles were noticeably more prevalent, as were carabids (in particular, red and blue), mealybug and cluster caterpillar.



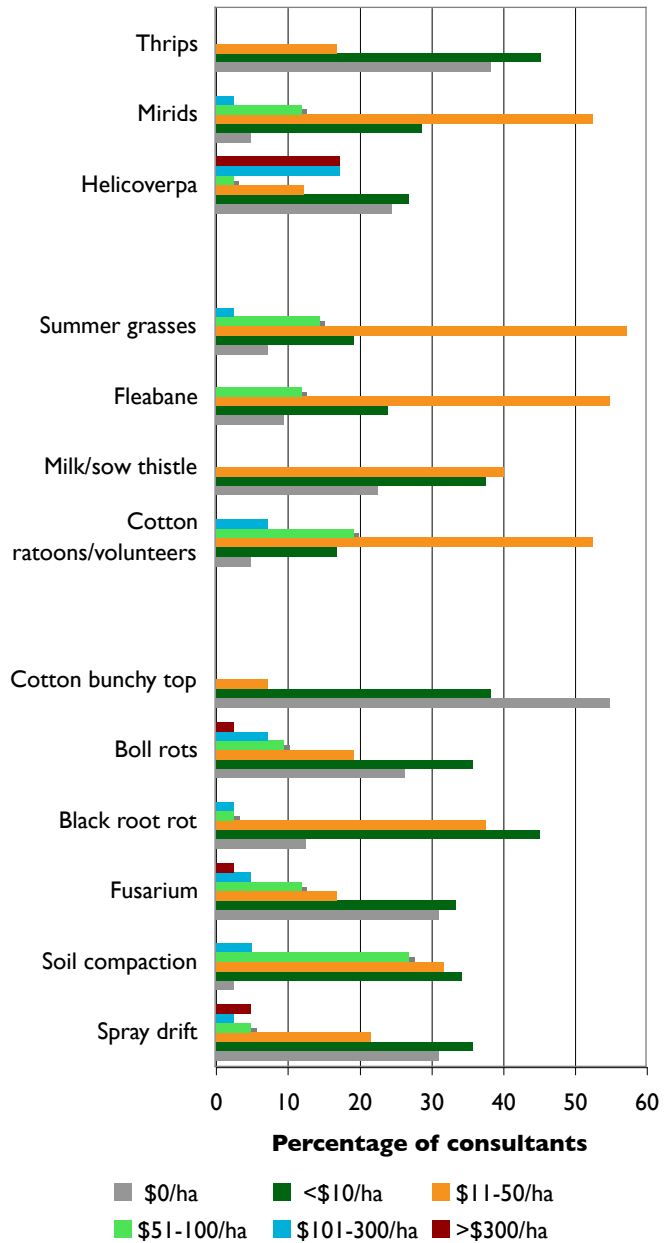
### QUESTION 31

Rate the average impacts you think the following pests, weeds, diseases and disorders had on the profitability of your clients cotton crops in 2012/13 (either through budgeted costs or through yield loss). Select an impact value for each row.

(42 respondents)

# 31

### Estimated financial impact of insects, weeds and diseases/disorders



### QUESTION 32

With regards to insect pest management in 2012/13 cotton fields, how widely used (in terms of hectares) are these practices?

(32 respondents)

**Note** Percentage of total survey hectares is shown in the graph.

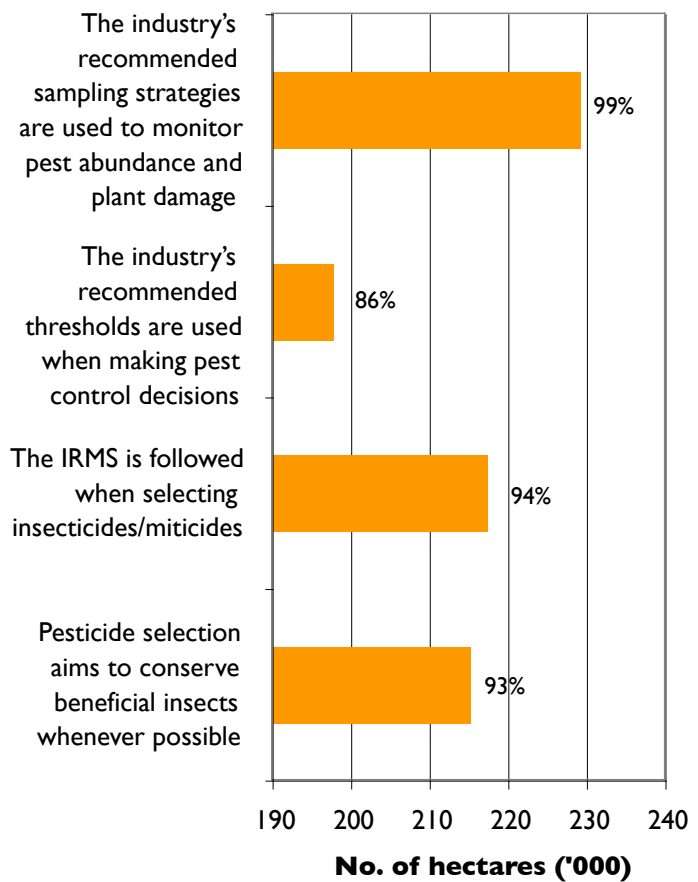
### QUESTION 33

Thinking about refuge crops for Bollgard II, how important is it that your clients have the choice of pigeon pea, unsprayed cotton and sprayed cotton options.

(37 respondents)

**Comment** Almost all these responses emphasised the importance of having this choice.

## 32 Insect pest management practices used in 2012/13



## 33

Choice is the most important thing they mention. Each refuge has its set of pros and cons for a particular farmer in a given year (water requirements, glyphosate drift, profitability, ease of management). So with a choice, they can choose the BEST option for THEM. I feel that if they did not have a choice, many of the refuges would not be adequately managed.

Important. Growers have different preferences for the refuges based on weeds and water.

It allows my clients the options for the best return per hectare from their farm, at a risk level they deem satisfactory. Obviously, in the case of unsprayed cotton, there is a chance there will be some cotton produced, and a chance for none, whereas the 50/50 split of BG and RRF can increase the productive area of the crop, at a risk of a cost blowout on the conventional per hectare. The choice is then theirs.

Important. Especially important for dryland cotton (Can't use pigeon peas in Dryland cotton).

Very important, as all have a place.

Growers have differing priorities and choice is important. Profitability returning to refugia is critical.

---

... Question 33 continued

---

It is an important choice as our clients use varying amounts of pigeon pea and unsprayed cotton depending on water availability, drift issues, weed issues, and likely pest pressure.

---

VERY VERY important due to varying soil types (some suited to peas, some not), farm sizes (10% can be far too much for some), and practicality for some growers.

---

Very important. A large proportion of growers on smaller farms need other options.

---

Very important, although consistency of crop quality would be improved if cotton was allowed at 5% of area, even if it required some extra conditions.

---

Very important that pigeon peas are available as a refuge, particularly on an economic basis. 5% pigeon peas should be available in dryland cotton.

---

Need options of pigeon pea and unsprayed cotton for mix of dryland and irrigated crops. Useful to have irrigated peas to cover some dryland cotton in certain cases. Don't use sprayed conventional cotton as refuge.

---

Size of refuge area needs to be considered.

---

It is important. Some clients prefer to grow fewer hectares as refuge and therefore choose pigeon peas. Others prefer to grow unsprayed cotton, as it gives them the potential for some cotton yield and at the same time facilitates the management of applying glyphosate in/around refuges.

---

Extremely important. To remain profitable, growers need to have a range of options available to them so that they can choose the one that fulfils the needs of the RMP but places the least burden on their bottom line.

Each enterprise is different on many levels and the one refuge option is not going to suit all enterprises equally. In different regions, and even locations within a region, there can be practical differences with regard to implementing the various refuge options listed, and there can also be different impacts on the bottom line.

I think that to have a successful RMP that has the best shot of keeping all stakeholders engaged, it is very important to have choice.

---

Peas at 5% are more economic in terms of opportunity costs. The only benefit of unsprayed cotton refuge at 10% is RR weed control.

---

Only pigeon pea used.

---

It is good to have options to provide versatility to farmers. If unsprayed cotton was reduced to 5% it would become the main refuge and be better managed.

---

Gives them flexibility and works with water and area limitations.

---

Drift issues of pigeon v RR cotton. Financial difference.

---

Smaller field areas than out west... can't justify bigger refuges and use more water.

---

Very important. There are huge cultural and economic considerations for all 3 refuge types and I have growers who use each type.

---

Extremely important.

---

Option is important depending on scale of operation. For example, clients who have smaller farms are tending to choose 5% pigeon peas so they can have more hectares in Bollgard cotton. Other clients prefer unsprayed for weed control advantages.

---

It is very important. Most growers are not happy with the idea of using any refuges that will not bring any income.

---

I have a mix of both irrigated and dryland clients so refuge options are important.

---

Very important. Some don't like the sacrifice of 10% area while others prefer to manage weeds more successfully.

---

... Question 33 continued

Different growers have different production expectations, being able to plant a smaller area to refuge is more valuable to some growers than others.

A choice is extremely important for growers to manage the variety of agronomic and management variables related to growing cotton.

With a mosaic of cropping, relatively small management units, unreliable irrigation water, and dryland plantings of cotton, all refuge options are used by my clients – and not the same one every year.

Very important, as it depends on how the farm is structured for cropping area, crop rotation and water availability. Not having options would impact on the growers making the most profitable choice.

Choice is dependent on areas required and the ability to keep a refuge clean. If its a dirty farm, unsprayed cotton is recommended/chosen, if clean, then pigeon pea.

Most of my clients use pigeon peas as the refuge. Unsprayed cotton is still good to have as an option.

Important. Choice of refuge can influence area of cotton grown and overall profitability.

It's highly important to have the three options, as they provide alternatives for different farming systems. Unsprayed and sprayed cotton are ideal options for dryland systems, while pigeon pea and unsprayed cotton are two popular options for irrigation farms.

It's very important to have choice. Pigeon pea and unsprayed cotton suit different farming systems. The sprayed cotton is not used by any of our growers.

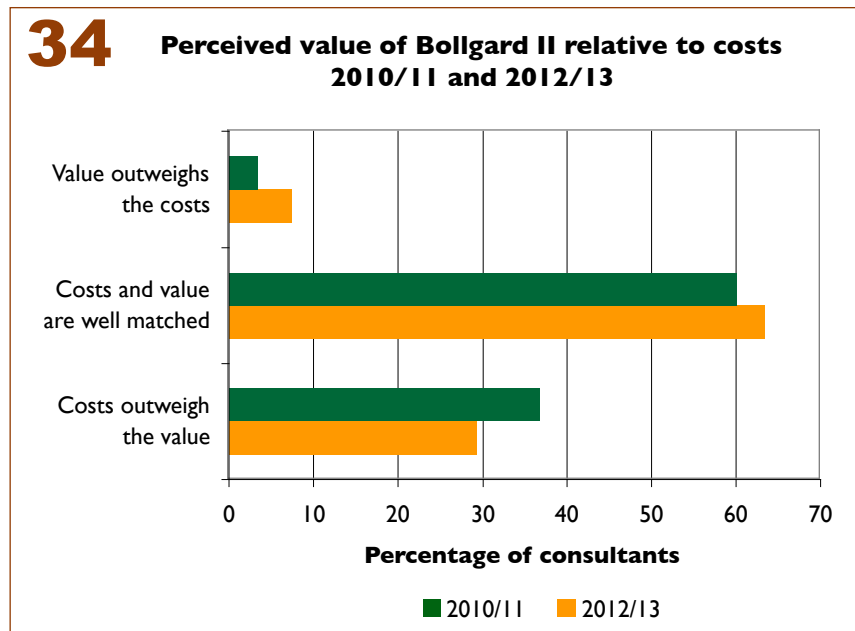
I still believe it is very important to provide the choice between the 3, although all of my growers use pigeon peas for refuge.

## QUESTION 34

Which of these statements best reflects your opinion of how well matched the costs of Bollgard II are?

(41 respondents)

**Comment** This question was not asked in 2011/12; therefore, this graph compares the 2010/11 season with the 2012/13 season.



### QUESTION 35

If the cotton industry continues to use Bollgard II as per the current Resistance Management Plan (RMP) and no other Bt cottons are available, how many years do you think it will be before field failure of the technology occurs because of resistance?

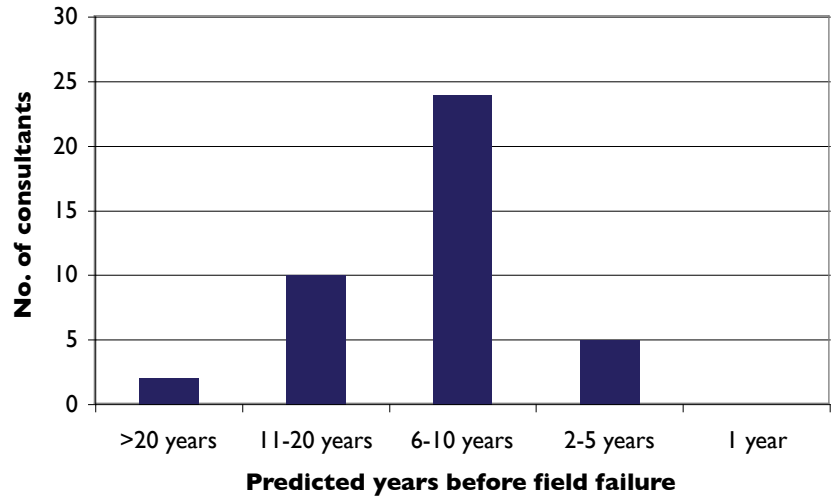
(41 respondents)

### QUESTION 36

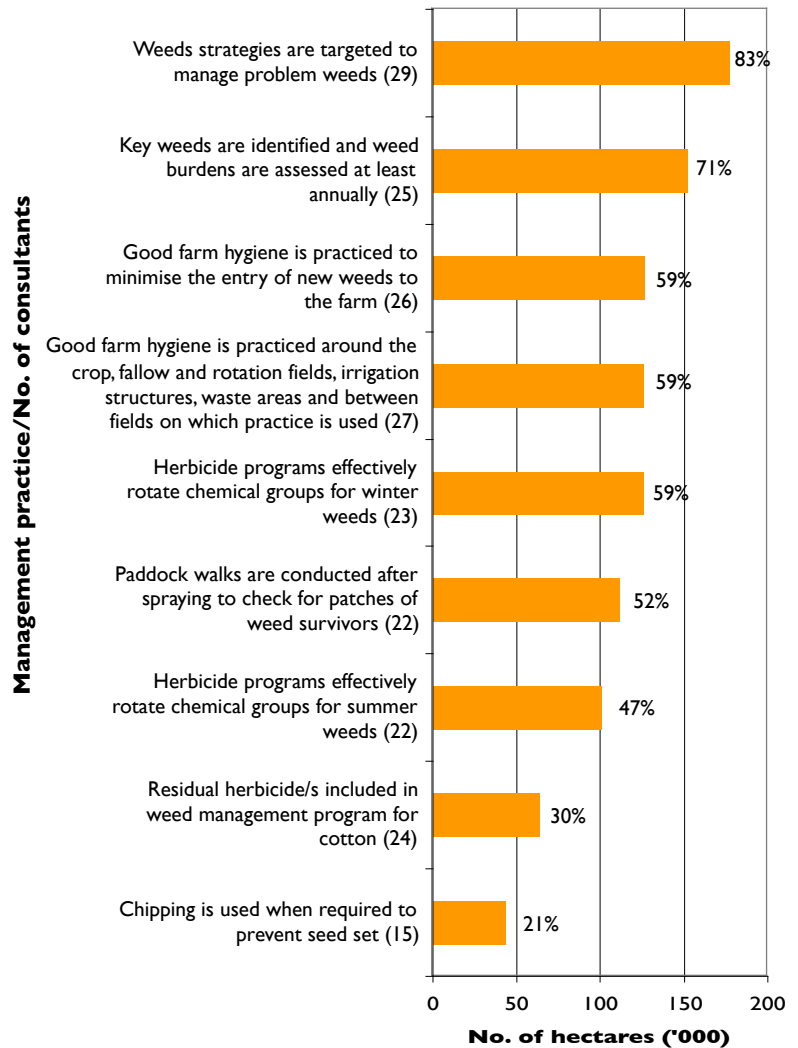
With regard to weed management in the fields used for IRRIGATED cotton in 2012/13, how widely used (in terms of hectares) are these practices? Percentage of total survey irrigated hectares is shown in the graph.

(31 respondents)

### 35 Views on longevity of Bollgard II technology



### 36 Weed management practices for irrigated cotton



### QUESTION 37

For fields where cotton is part of the rotation and glyphosate resistance is suspected or confirmed, the use of which weed control tactics has increased the most (select up to 5).

(38 respondents)

**Comment** The single 'Other' represented in the graph was Group L Paraquat.

### QUESTION 38

In your estimation, how much additional cost per year per hectare is being incurred to manage glyphosate-resistant weed populations?

(26 respondents)

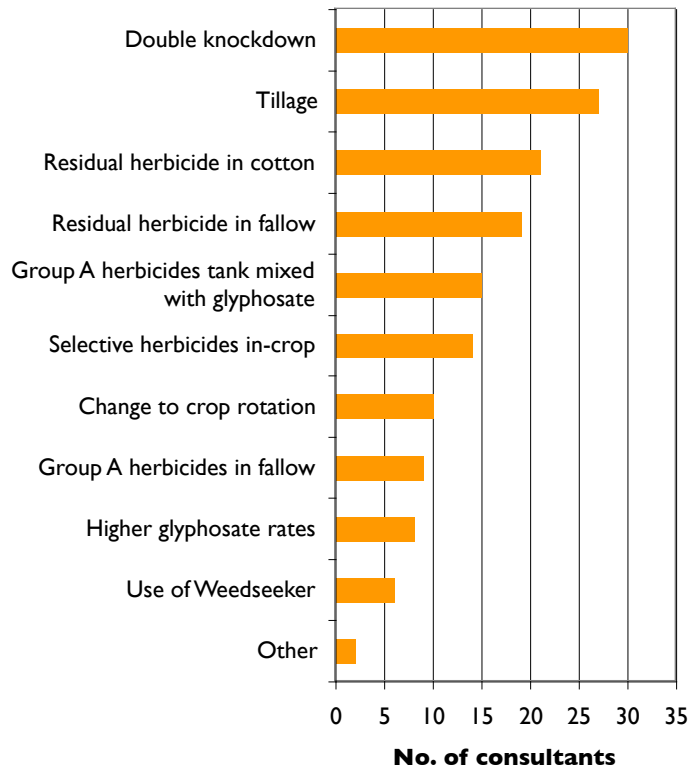
### QUESTION 39

Of your cotton clients, how many do you think are successfully managing cotton volunteers all of the time?

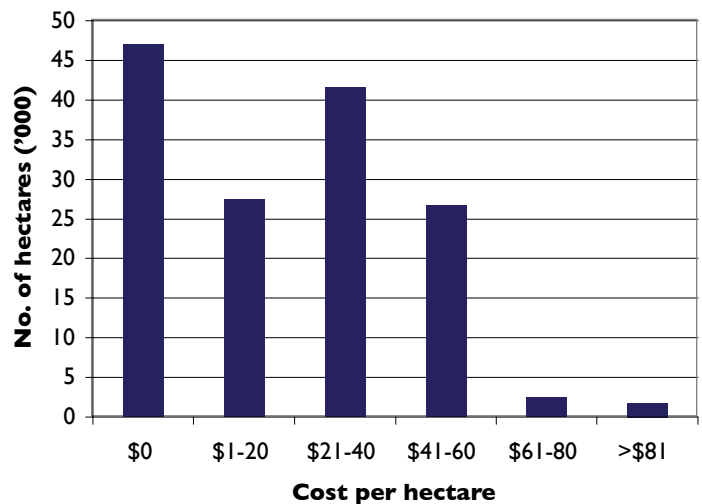
(36 respondents)

A total of 336 growers are successfully managing cotton volunteers: 74% of growers represented in the survey.

## 37 Increase in weed control tactics for glyphosate resistance



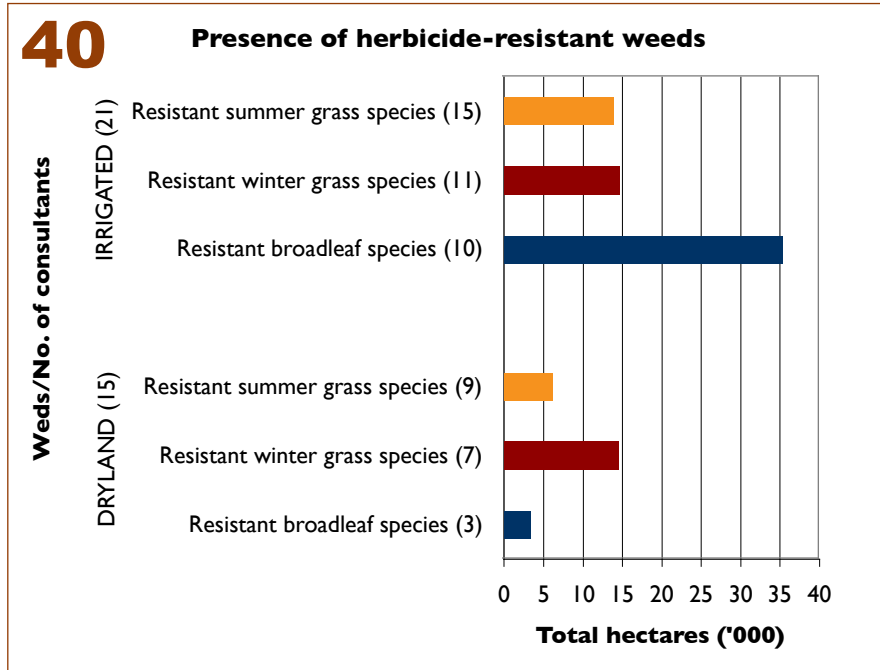
## 38 Cost of managing glyphosate resistance



**QUESTION 40**

Of the cotton hectares over which you consulted in 2012/13, please estimate the total area you believe to contain populations of herbicide-resistant weeds.

(23 respondents)



**SPRAY APPLICATION**

**QUESTION 41**

In 2013, across how many cotton hectares did you recommend tank mixing an insecticide with a defoliant?

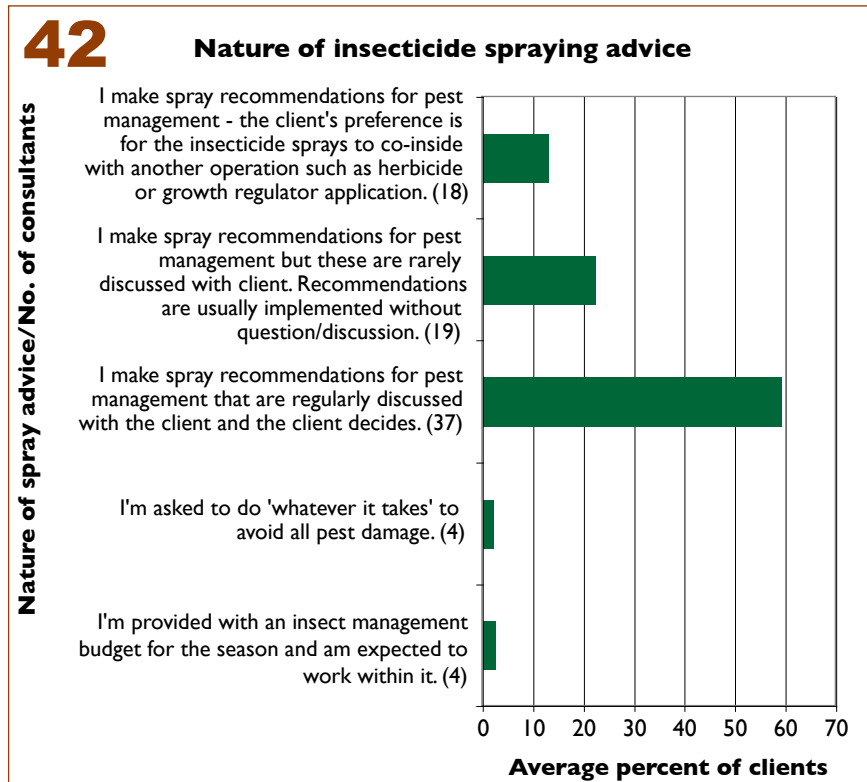
(41 respondents)

30 consultants did not recommend this; 11 consultants recommended it, nominating hectares ranging from 40 to 5,500. Total hectares were 10,862.

**QUESTION 42**

For what percentage of your cotton clients does each of these statements apply?

(42 respondents)



### QUESTION 43

When making spray decisions, how well were you able to conserve beneficial insects throughout the 2012/13 season.

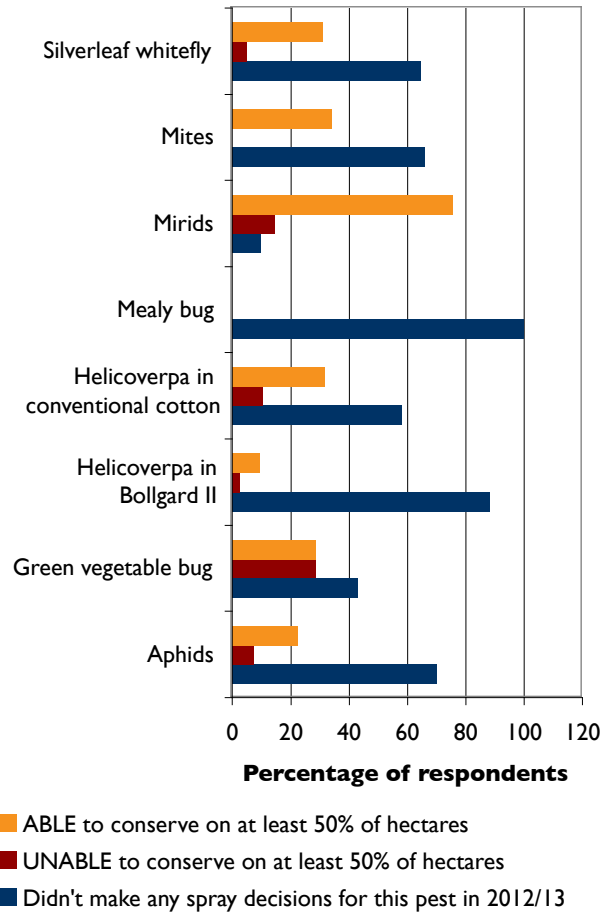
(42 respondents)

### QUESTION 44

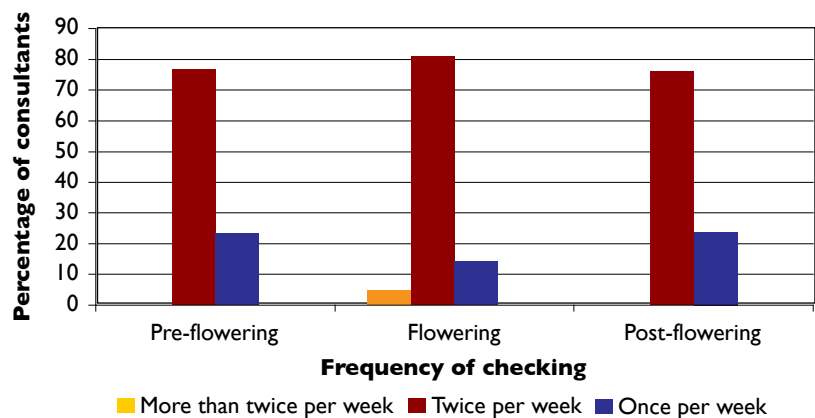
How frequently do you check Bollgard II cotton for making decisions about insect pest management?

(43 respondents)

## 43 Ability to conserve beneficial insects throughout the season



## 44 Frequency of checking Bollgard II cotton for spraying



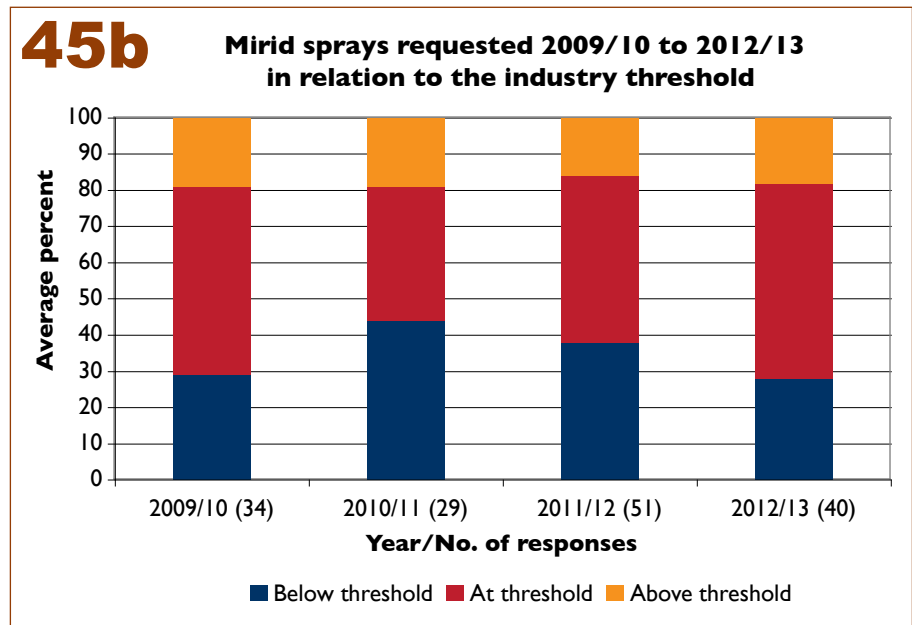
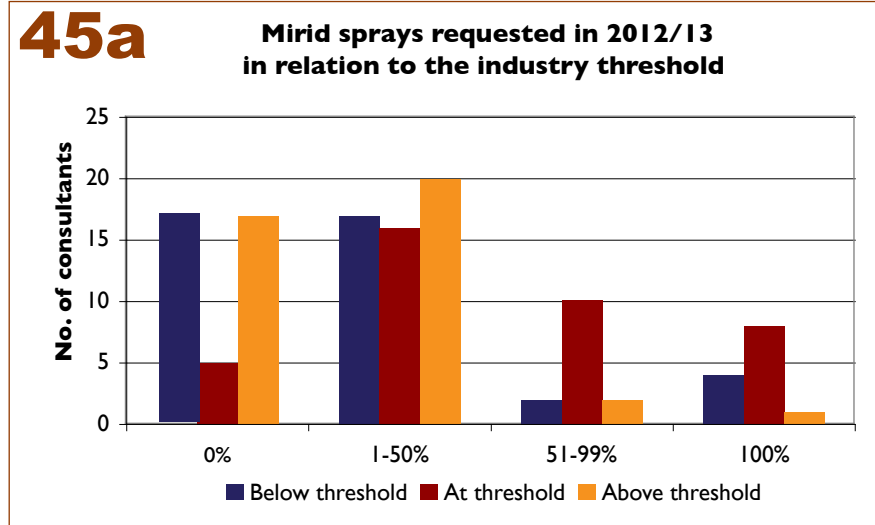
## QUESTION 45

How often were the sprays you requested for Mirids in 2012/13 above, at or below the industry's general threshold?

(40 respondents)

**Note** The industry threshold for warm areas is 3 mirids per metre for beatsheets or visually 1 mirid per metre. For cool areas it is 1.5 per metre for beatsheets or visually 0.5 per metre. Graph 45b compares 2012/13 with the 3 previous seasons.

**Comment** A 4-year comparison of average frequency of sprays in relation to the industry threshold (graph 45b) shows that the frequency of applications above the industry threshold remains quite constant, at around 20% in the four seasons, with variation occurring only between the 'at the threshold' and 'below the threshold' categories. This shows an encouraging longitudinal compliance with recommended spray thresholds.



### QUESTION 46

When during the 2012/13 season did you make your FIRST recommendation to apply dimethoate/omethoate for insect pest control?

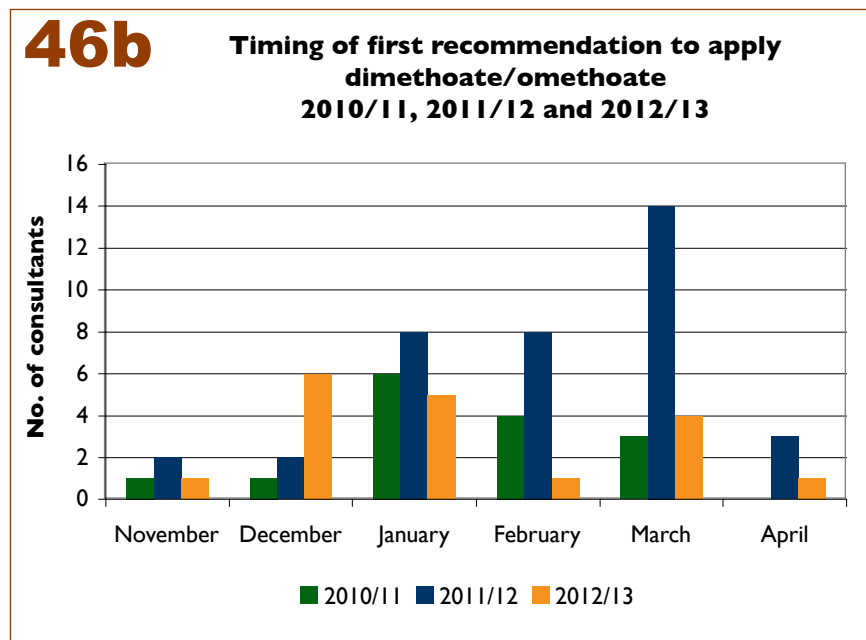
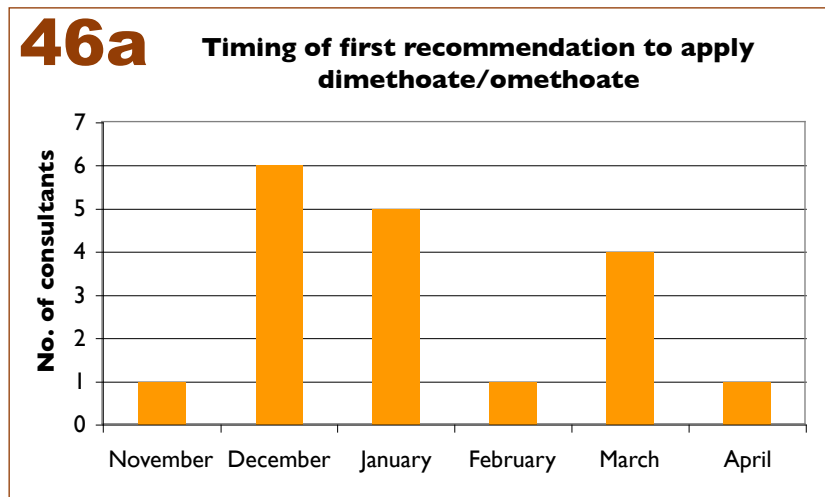
(19 respondents)

### QUESTION 47

OR if you didn't recommend dimethoate/omethoate at all.

(23 respondents)

Of the total of 42 consultants who responded to Questions 46 and/or 47, over half (23) did not make a recommendation.



## QUESTION 48

What do you do to mitigate the risk of spray drift impacting on your clients' cotton crops (as many as are applicable)?

(41 respondents)

## QUESTION 49

What do you think the value of CottonMap is for reducing the incidence and severity of spray drift in cotton each year (0 = no value to 5 = exceptional value)?

(41 respondents)

The average value ranking was 3.4.

## QUESTION 49.1

Why?

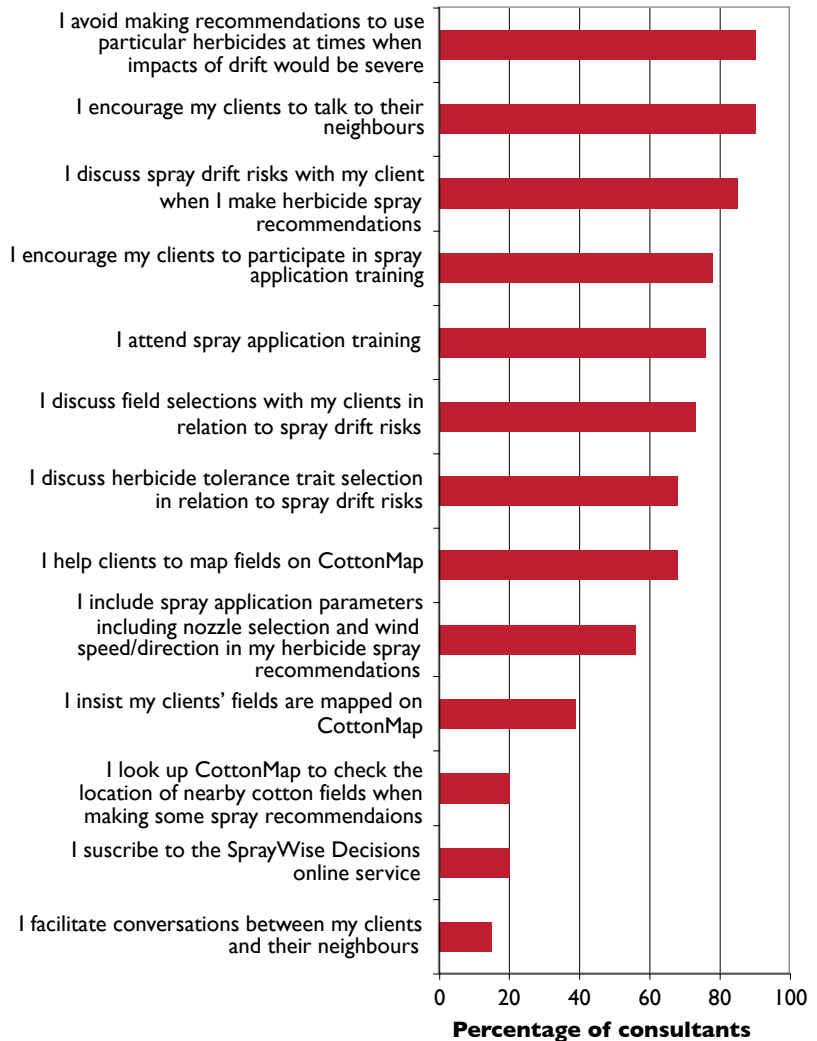
(39 respondents)

In summary, 21 consultants said that CottonMap is excellent for showing where cotton is grown; 16 said that it is not being utilised by non-cotton growers. A number of comments were made about the need to increase awareness of CottonMap amongst farmers.

Please see the appendix for individual responses.

# 48

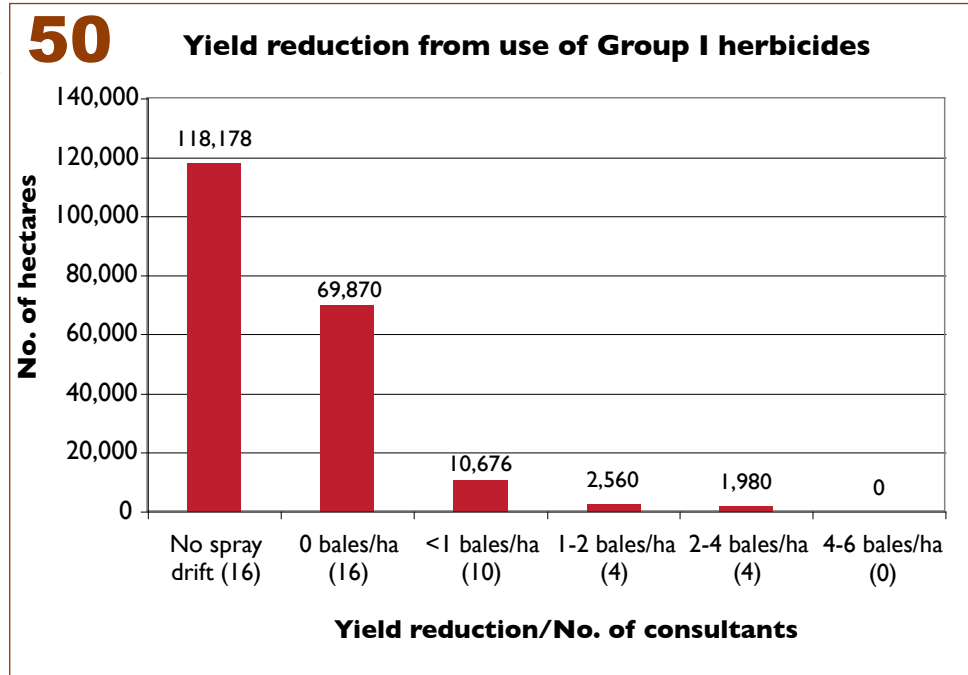
## Measures to mitigate spray drift risk



## QUESTION 50

What impacts did spray drift from Group I herbicides (e.g. 2,4-D, MCPA, Starane) have on your clients' cotton yields in the 2012/13 season?  
(30 respondents)

**Comment** A total of 15,216 hectares were affected by spray drift: 6.6% of survey hectares.



## NUTRIENT MANAGEMENT

### QUESTION 51

Thinking about fertiliser decisions for cotton crops, which tools do you use to assist with fertiliser recommendations?  
(31 respondents)

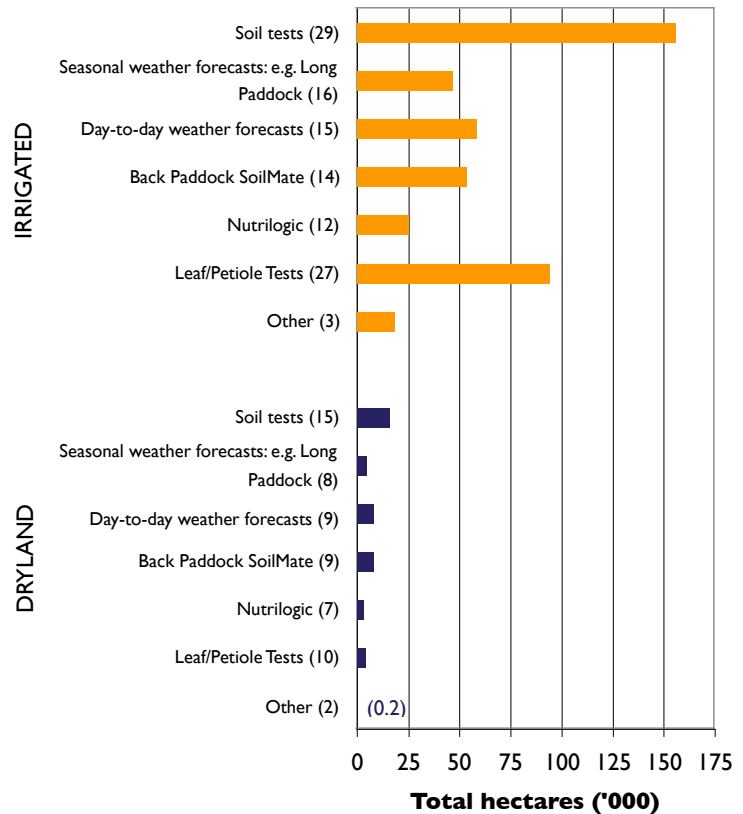
### QUESTION 52

'Other' for the previous question  
(5 respondents)

**Comment** 'Other' for irrigated cotton hectares was 'crop removal amounts' and for dryland, 'nutrient banking'.

### 51

#### Decision tools used to make fertiliser recommendations



### QUESTION 53

What is your best estimate on how many kilograms of nitrogen was applied per hectare for the irrigated cotton crops in 2012/13?

(30 respondents)

### QUESTION 54

What is your best estimate on how many kilograms of nitrogen was applied per hectare for the dryland cotton crops in 2012/13?

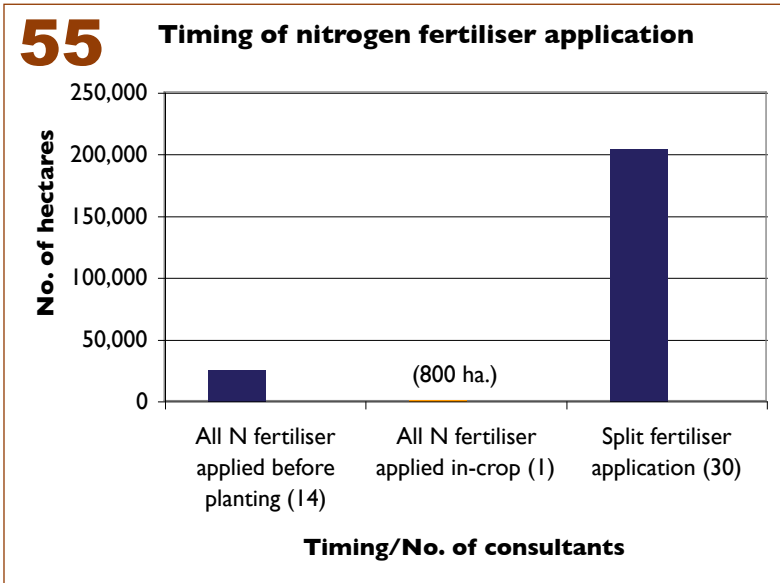
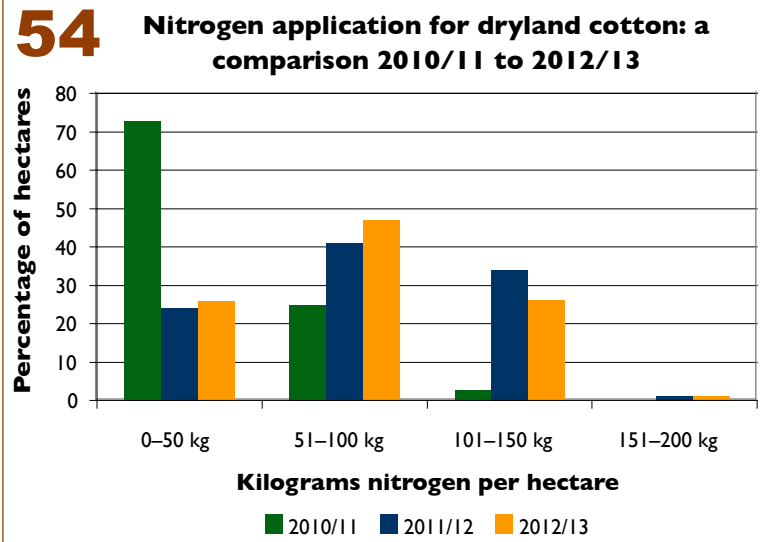
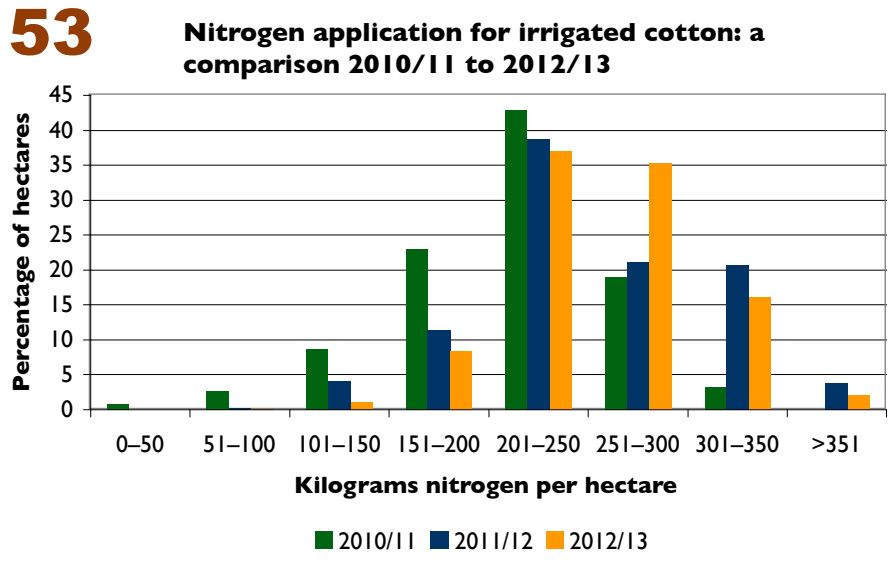
(18 respondents)

**Comment** Of the 6 respondents in the 0-50kg category, 3 consultants reported that a total 2,311 hectares had received no nitrogen application.

### QUESTION 55

In 2012/13, when were the cotton crops' nitrogen fertiliser requirements applied (number of cotton hectares)?

(31 respondents)

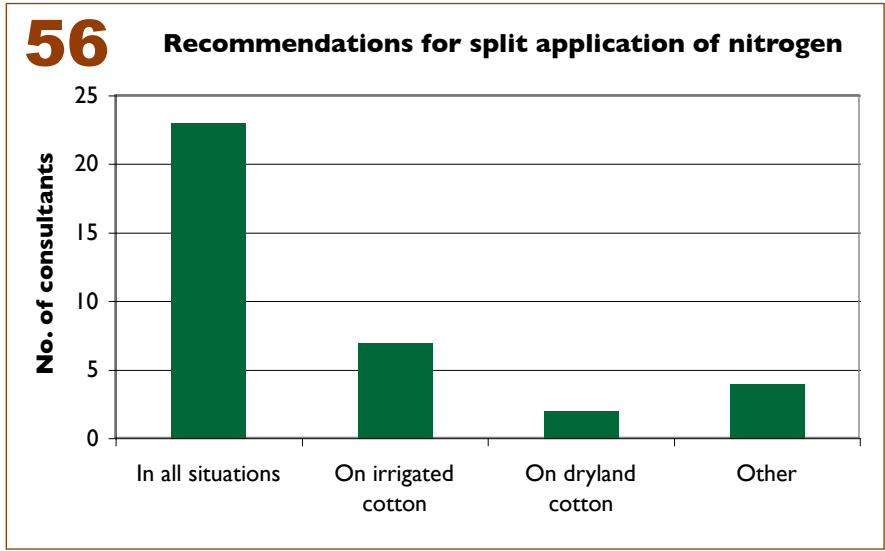


**QUESTION 56**

Briefly, in what situations do you recommend splitting nitrogen application?

(30 respondents)

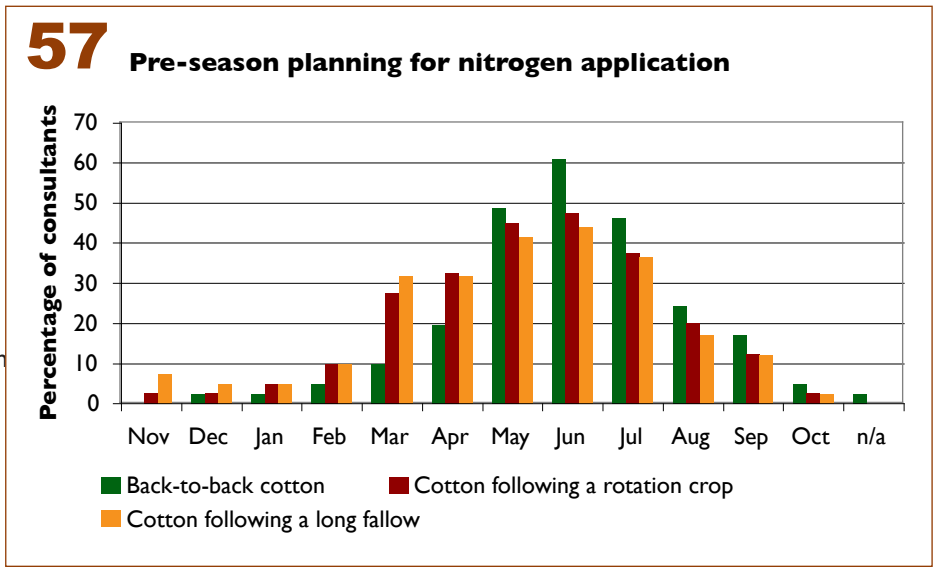
**Note** The most common responses are represented in this graph. Please see the appendix for individual responses.



**QUESTION 57**

During the year prior to planting, when do you work with your clients to make decisions about pre-plant nitrogen application for cotton?

(41 respondents)



**QUESTION 58**

Across how many cotton hectares in 2012/13 did recommendations/discussions with clients result in reducing the nitrogen fertiliser application compared to initial intentions?

(37 respondents)

13 consultants reported a total of 17,250 hectares on which application had varied.

### QUESTION 59

For what reasons would you recommend reducing the amount of nitrogen being applied to cotton?

(40 respondents)

### QUESTION 60

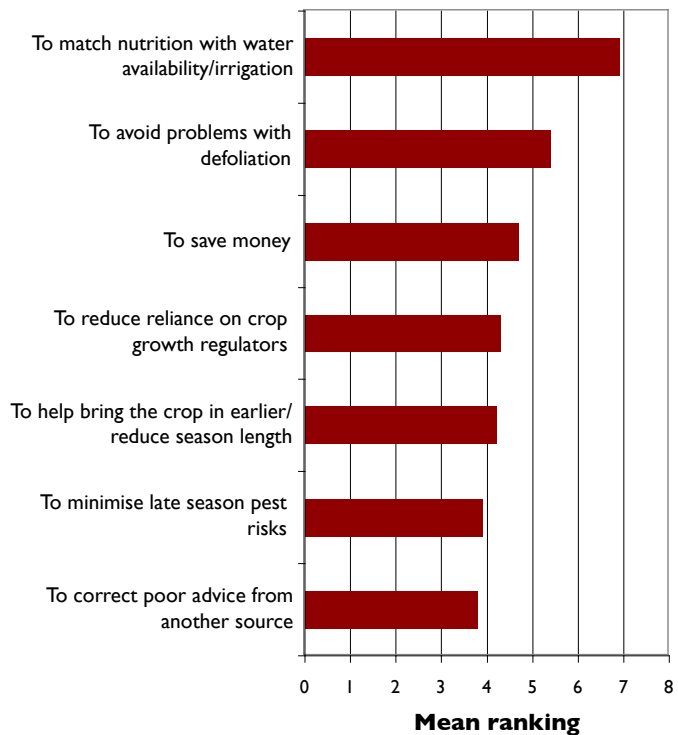
What is your best estimate on how many kilograms of phosphorus were applied per hectare for the irrigated cotton crops in 2012/13?

(30 respondents)

**Comment** The most common response was 21-30 kilograms of phosphorus per hectare, applied by 23 consultants' clients over a total of 101,098 hectares.

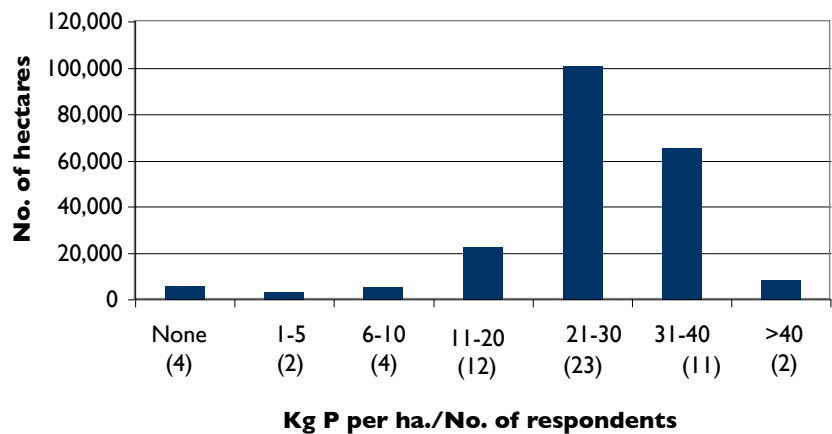
## 59

### Reasons for recommending reductions in nitrogen application: mean ranking



## 60

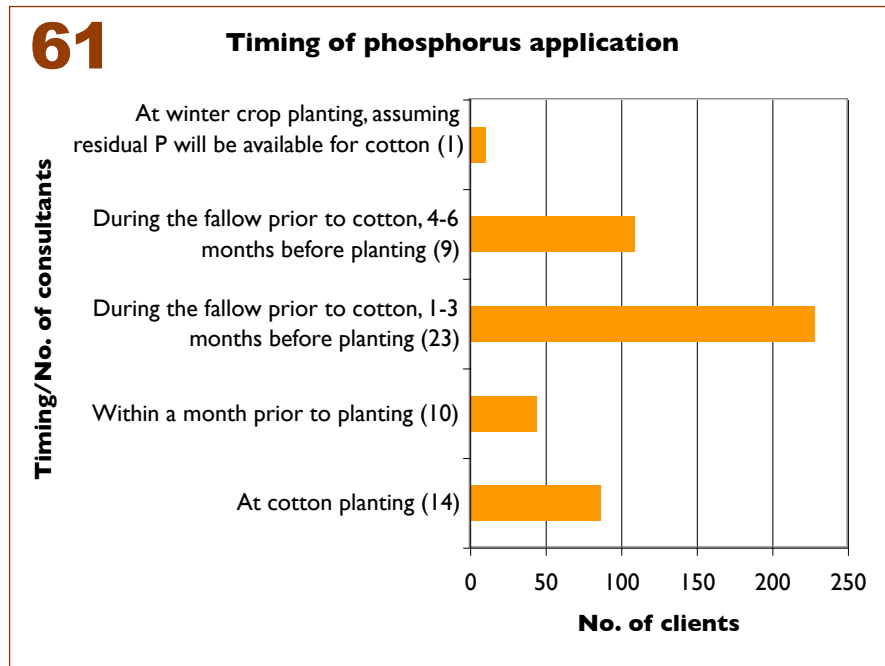
### Phosphorus applied to irrigated cotton



## QUESTION 61

Thinking about your cotton clients who apply phosphorus fertiliser, please indicate the number who apply it at each of these times.

(30 respondents)



## WATER MANAGEMENT

### QUESTION 62

For each of the irrigation performance measures listed, how many of your clients did you assist with the calculations?

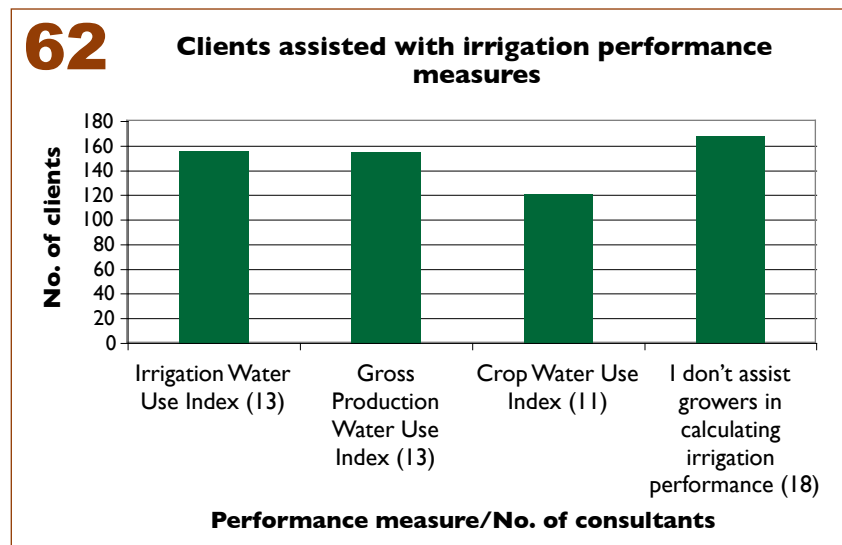
(32 respondents)

### QUESTION 63

If you answered 'Other' for the previous question, please expand.

(2 respondents)

Two consultants responded, respectively, 'we benchmark yield for clients' WUE' and 'I mainly look after dryland clients'.



**QUESTION 64**

What aspects of water management did your cotton clients optimise in 2012/13 to grow 'more crop per drop'?

(27 respondents)

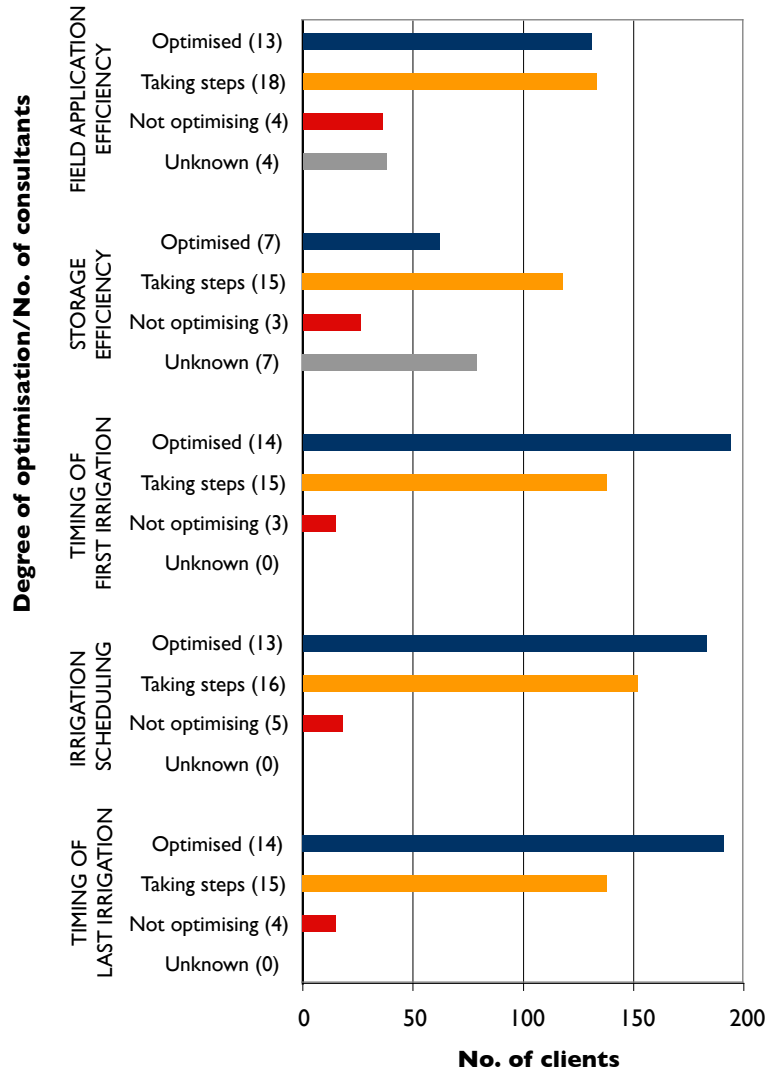
**QUESTION 65**

How many hectares of the cotton grown by your clients in the 2012/13 season were irrigated using overhead irrigation systems?

(21 respondents)

The 21 respondents reported a total of 9,723 hectares grown using overhead systems: 4.5% of the survey's irrigated hectares. The average hectares per consultant was 463 hectares, while the range was from 40 to 2,843 hectares and the median was 400 hectares.

**64 Optimisation of aspects of water management**

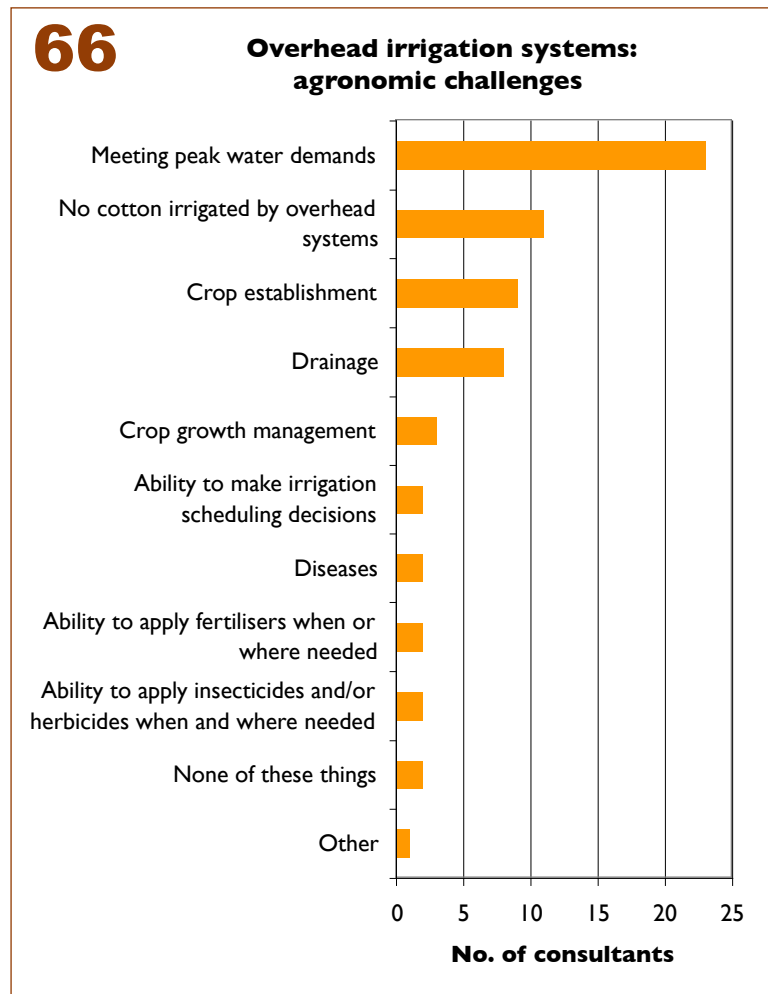


## QUESTION 66

With regards to cotton irrigated by overhead systems, which if any of the following agronomic challenges do you think negatively impacted on yield in the 2012/13 season (as many as are relevant)?

(41 respondents)

**Comment** The 'Other' response was that no rain and intense heat at St George and Mungindi meant peak water demands were higher than in a normal season.



# R&D INVOLVEMENT

## QUESTION 67

How many of the cotton growers you work with did on-farm trials in the 2012/13 season.

(41 respondents)

Of the 41 respondents, 37 had a total of 138 growers participated in on-farm trials: almost a third of the growers represented in the survey.

## QUESTION 68

Describe the value you get from participating in on-farm trials.

(40 respondents)

**Note** Respondents selected one item in each column, ranking the options from 1 = no value to 6 = greatest value. The responses have been ranked in order of greatest to least value.

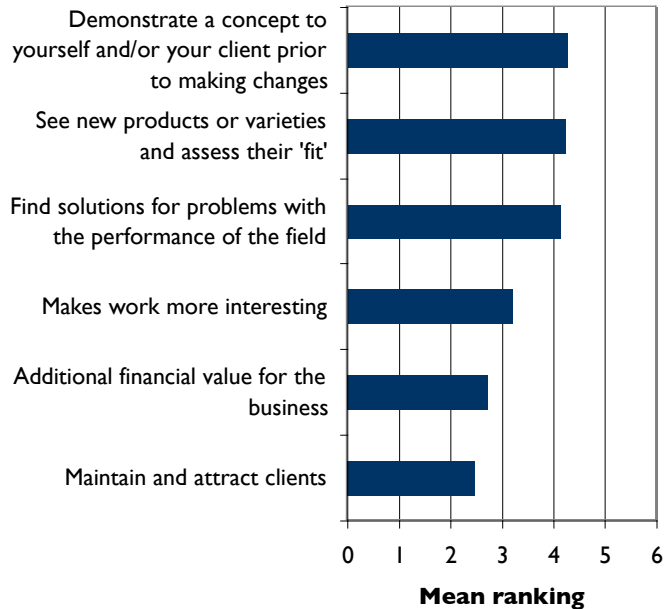
## QUESTION 69

With regard to on-farm trials from past seasons, describe a good news story: a practice that you and your client/s have changed as a consequence of the results obtained.

(29 respondents)

**Comment** Responding consultants reported a widely varying range of benefits arising from participation in on-farm trials, so collating the results was not a meaningful option.

## 68 Value of participating in on-farm trials: mean ranking



## 69

The value of residual herbicides in dryland farming system with glyphosate-resistant barnyard grass. Increased yield from split applications of N fertiliser in crop. Increased farm profitability by growing dryland cotton.

IPM. Leaving spraying of pests for longer so as to see what beneficials will do.

Developing more of an integrated approach to planting densities rather than a one size fits all approach.

Variety changes. Cereal nitrogen rates.

Water run urea, increased yield.

Demonstrated a yield benefit from phosphorus application on one farm.

Demonstrated that phosphorus was not required on another farm by using test strips.

Variety trials. Canopy oil trials.

Nothing specific from 2012/13 but discussion over winter 2013 has generated a good trial looking at phosphorus fertiliser placement, which will have major logistical ramifications for pre-season fertiliser application.

Probably only grow 74BRF in very favourable situations. Look for responses to extra sulphur fertiliser – limited response. Variety trials.

Nutrition trials haven't yielded any useful data yet (2 seasons).

A trial comparing incorporation versus non-incorporation of phosphorus and potassium blend fertiliser applied in-crop suggested that incorporation can be achieved with irrigation and that cultivation may not be necessary. However, the trial was not replicated or statistically evaluated. The client is now reasonably comfortable with not incorporating blend fertiliser by cultivation, which saves time and money.

---

... Question 69 continued

---

Have demonstrated that some at-planting nutrition options trialled haven't given any positive return and, as such, the grower is better off not applying and saving their money.

---

Defoliation chemical product trials – the most cost effective mix.

---

Reducing irrigation times, increased yield and reduced pumping time and cost.

---

Mainly varieties.

---

Encouraged use of feed lot manures, slowed down planting, brought timing of first irrigation forward, planted 74brf shallower, reduced amounts of pre-plant potassium applications, reduced amounts of foliar fertiliser applications, increased amounts of in-crop nitrogen applications.

---

Adjusted starter fertiliser rates.

---

Trialling seed vigour index - Made alterations to planting rate based on some poor performance of lower vigour seed last year.

---

Potassium response.

---

Less reliance on pop-up starter fertilisers, as trials we conducted showed no advantage in using them.

---

Better irrigation scheduling. Increased yield.

---

Quicker adoption of new varieties because of confidence the variety has performed in that area.

---

Using more pre-plant herbicide strategies to reduce the reliance of glyphosate on grass weeds in particular Feather Top Rhodes.

---

Plant population.

---

Increased nitrogen rates in hot years to meet higher yield demand.

---

Using a potassium foliar spray that contained Boron. It showed a good increase in yield, so we now push the use of boron mixed in potassium foliar, applied during flowering.

---

Using boron as an additive to potassium foliar. The trial found good yield increases by adding boron, so that's something we look to add to foliar applied during flowering.

---

Applying Prep (growth regulator) to a cotton field that had been dropped out due to a lack of water when we did eventually receive a flow in the river. The result was that this crop that was restarted at the end of January went on to yield 4.2 bales per acre (10.5 bales per hectare), compared to a neighbouring farm that ploughed theirs in and had to pay the Bollgard and Roundup Ready fee. By the time we picked this restarted crop in June the cotton price was back up to \$500/bale.

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## 5 APPENDIX

### WHAT IS INCLUDED IN THE APPENDIX?

Below you will find individual responses to Questions 7, 49.1 and 56, as these responses expand on, or add to an understanding of, the graphed information.

#### QUESTION 7

*Describe your overall attitude towards professional indemnity insurance.*

---

I feel that holding professional indemnity insurance is a professional thing to do to cover our clients' crops for our mistakes.

---

I have concerns that consultants may not be as certain of coverage as they think they are. It is not fully clear with the legal jargon and loopholes about what is covered and what is not.

---

A vital insurance policy to our business to protect ourselves from any issues relating to our advice.

---

Have it. Expensive. Necessary.

---

We have always had some but I feel that if all aspects of the crop growth etc. are always discussed with the grower then it shouldn't be an issue.

---

I take out a \$20 million policy. As an investigator in the past, I take my liability seriously.

---

I have cover and believe it is irresponsible for a consultant not to have cover to protect his client from the unknown.

---

Ok and probably a reasonable price again now, but I am concerned how well I am actually covered if it came to the crunch.

---

Good as long as it is affordable.

---

Too dear, for a small business in which I make the decisions and I have managed to save on that expense. Used to have it when it was a reasonable price.

---

Hopefully covered by employers' insurance.

---

It is cost effective these days, it is wise to have it.

---

We renew our insurance every year. I believe that it is a useful insurance. However, as with all insurance, I do sometimes question whether or not it is worth the expense as we have never had a claim against us. On the other hand, I would feel uneasy about not insuring. I believe that PI insurance should be part of any professional consulting firm.

---

I think it is a necessary insurance to protect the welfare of your clients and yourself when operating a small business and providing professional advice. Though I have always had it, I hope never to have to use it.

---

Required.

---

Not required for myself.

---

I have taken it out for at least 20 years and find it essential to operating my business.

---

Haven't had a claim so haven't tested it yet. Needs to be substantial, there is a lot at stake for both growers and agronomists.

---

Is a must. As well as you think you know someone, when it comes to a stuff up that costs them money, money can rise above friendships. Better to be safe than sorry.

---

Would like to think I don't need it.

---

I have it and would not operate without it unless all clients were aware and agreeable.

---

Important.

---

I look at it as a necessary evil.

---

If you have nothing then they won't sue.

---

Most of the main decisions on growing the crops – the growers get involved. In my opinion the professional indemnity insurance is needed when the grower's involvement is minimal. It is too expensive and have never used it in the past.

---

A 'must have' for the business and employees.

---

---

Extremely important, especially in developing areas where you don't have the extended relationships with the growers that some of the older experienced consultants have.

Working for an agribusiness, I feel I'm covered and don't think about it too much. As long as all lines of communication are open with the client, and the decision doesn't rest solely on my shoulders, it shouldn't be a problem.

Very important.

Expensive.

Should have it but suspicious of the cover.

Unfortunately need it but would rather not have it.

Beneficial.

I utilise professional indemnity insurance to protect both my clients and my own business from any misadventure.

Probably necessary. Hope not to find out.

Although I have never needed to activate the cover, it is something that adds to my confidence to provide professional advice knowing my business is safe from litigation costs.

I'm in a lucky position that I fall under the corporate umbrella. I have been told it is a necessary evil.

Something that I haven't thought too much about, but it does provide security in giving advice knowing there is insurance covering the business assets.

I don't personally deal with it but feel it is important for all consultants to have some form of indemnity insurance to cover you or your employees if something goes wrong with advice given.

The cost of professional indemnity insurance is a small price to pay compared to the possible risk and cost of losing personal assets such as a home etc.

---

## QUESTION 49.1

*Why do you hold the view that you expressed in Question 49 about the value of CottonMap for reducing the incidence and severity of spray drift in cotton each year?*

---

CottonMap is an excellent resource for farmers that are doing the correct thing with regard to minimising spray drift but maximising spray effectiveness (timeliness, product, cost). However there are still people who do not consult CottonMap and/or do not seem to take due consideration of neighbouring crops or the weather conditions when applying certain herbicides and damage inevitably occurs to neighbouring crops.

We have so many paddocks and smaller farms with multiple crops that one has to assume there is constant risk all the time.

The areas where spray drifts are likely to come from are not likely to seek out CottonMap.

Good value, BUT not all cotton is mapped; would be far more valuable if all cotton was mapped.

A lot of damage is self inflicted or the people who are not careful are not looking at CottonMap!

Very visual and easy to use – however, more effort needed to get all growers to participate.

The big reduction in spray drift occurred because a lot of farmers that used to spray hormone started to grow cotton. Hence hormone use was reduced. It is only a useful tool if the non-cotton growers actually look at it.

Everyone knows about it and it sounds like a lot of people look at it. If nothing else, it makes people think and keeps drift at the front of their minds.

Shows where cotton fields are.

In combination with radio advertising, it is raising more awareness.

On the Downs we all know where the various crops are: easy to see, smaller areas.

Useful, but the worst drift will be from someone not accessing CottonMap info – had one neighbour spray fallow adjacent to cotton crop with hormone spray.

Awareness.

---

---

CottonMap has reasonable value if it is being used by farmers including non-cotton growers. However, despite the existence of CottonMap, problems with long distance drift if herbicides are applied under sub optimal conditions continue.

It is a quick reference source to see the exact location of cotton crops near an area that is to be sprayed, and it is a more general benefit as part of an awareness strategy.

Dryland growers know if they are next to the cotton and horticultural crops growing areas, even if they don't check CottonMap – they know who their cotton and horticulture neighbors are. Doesn't mean they won't risk spraying Group L chemicals when they think they can.

Most of our drift issues are related to inversions many kilometres away. Those large dryland farmers are unlikely to consider the implications.

It allows dryland farmers to see the proximity and direction of cotton crops.

Good for awareness.

Awareness.

Some applicators look at it but when the spraying needs to be done, it's done sometimes regardless of weather conditions.

I think the process of CottonMap just raises cotton grower awareness, and that of our contractors.

My clients are aware of where the cotton around them is. Often farmers have cotton crops on their farm but don't notify their neighbours but through CottonMap we are able to see where they are.

Excellent tool – unsure how often growers and contractors view the website, however.

Awareness of cotton planted areas, especially for dryland non-cotton growers.

Growers causing the drift don't know about or bother to check CottonMap.

Gives whole valley exposure.

Easy way of checking if there are any cotton fields close to where you are recommending a spray.

Many people actually use it.

In our region there is always a drift risk in all directions so drift minimisation measures should always be practised. Close proximity high risk fields are known about by neighbour communication. For example, if a phenoxy is being used my clients all liaise with their neighbours re current plantings.

Failure of the fields to be placed on the map and failure to look at the map before spraying. More awareness and advertising required.

Allows the honest to see where cotton fields are.

Location of susceptible crops is vital in making spraying decisions. CottonMap is a tool but it is not utilised by everyone.

In a closely settled area most drift comes from non-cotton growers who will never look at the map.

It seems a very useful tool for the cotton industry but I'm not sure how many outside the cotton industry look it up.

Cotton growers use it to look up neighbours fields but I doubt non-cotton growers are using it to check on cotton field positions.

It is available for all spray operators and farmers to identify where cotton crops are but whether it is actually used by spray contractors I'm not sure.

It allows broadacre growers to have a look to see what fields are around that are planted to cotton, though the good growers who do this are also less likely to be serial drifters. I think CottonMap, along with the radio ads, is a great way of reminding everybody of the importance to avoid damaging neighbours crops. I haven't heard the radio ads as much this year.

## QUESTION 56

*Briefly, in what situations do you recommend splitting nitrogen application?*

---

Always on irrigated cotton. In exceptional circumstances for dryland.

All. It depends whether a grower is practically able to do it.

---

---

All situations, to ensure crop growth is not excessive early and the fertiliser is not lost from the profile throughout the season.

Nitrogen application is split in most cotton fields.

As many clients as can, apply in-crop.

All situations. I advocate 50% up front and the balance applied side-dressed or water-run.

All but dryland.

Most clients of mine split nitrogen so we can manage growth, efficiency and budgets.

All. The methods depend on the machinery/infrastructure capacity of the individual farm.

Only in irrigated crops. Where nitrogen can be applied conveniently in irrigation water. Where water supply is uncertain early but increases during the season. Where any nitrogen deficiency from early water logging is evident. Where yield potential rises, crop has greater than expected fruit load.

Where the grower is happy to apply some later is my preference – usually with first water, maybe 50 units, the rest applied pre-plant. Can get caught short with wet weather if applied all up front.

When soil is too wet or there is a large fruit set.

Almost always.

50-80% pre-plant, generally depending on growers logistical limitations on post-plant nitrogen.

In all situations where possible.

All farms apply at 60% before planting, the rest is applied prior to Christmas.

70% upfront, 30% in-crop.

All situations, to prevent leaching and denitrification from irrigation during the season.

In all situations we try to apply 60% of our budgeted nitrogen pre-plant, then the remainder is applied in-crop via side-dress, spread or water-run methods, depending on seasonal conditions and equipment availability.

Dryland situations.

On back-to-back country the usual process is 200 to 220 units nitrogen pre-plant, then 50 to 60 units layby post-emergent, either NH<sub>4</sub> side-dress, spread in front of planter or water-run.

The balance is put on depending on petiole results with water-run or spread.

All fields aimed for 60–80% of applied nitrogen pre-plant, followed by 20-40% of applied nitrogen via water-run or side-dressing.

The fertiliser program for the farms is based on split applications. Some fertiliser is applied in May or June. More is applied blended with phosphorus and potassium and the rest is applied as water-run during the growing season.

Irrigation country.

Timing of upfront fertiliser. Water-running/side-dressing.

In all situations if possible.

In crops with low incidence of Fusarium.

Irrigated cotton.

Irrigated fields.

Irrigation: side-dress in December for boost. Dryland: dependant on rainfall.

Irrigation.

I recommend splitting in every situation, as we get too many losses by putting all nitrogen pre-plant, particularly on the lighter soil types.

Irrigated only on lighter soils or uncertain water supply.

On farms that are susceptible to water logging from irrigations, also mainly where farmers have trouble applying all their fertiliser at once in an efficient time frame.

In fields with poor drainage, where waterlogging occurs. Timing is also a problem where they need to cover a large area quickly.

I recommend growers aim to apply at least two thirds of their nitrogen requirement up front in winter and then either side-dress or water-run the remaining third in-crop.

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# Qualitative report on the 2012–13 cotton season: a survey of consultants



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