



Australian Government

Cotton Research and
Development Corporation

FINAL REPORT

Part 1 - Summary Details

Please use your TAB key to complete Parts 1 & 2.

CRDC Project Number: CSD1703

Project Title: Mealybug Workshop

Project Commencement Date: 23/03/17 **Project Completion Date:** 23/03/17

Part 2 – Contact Details

Administrator: Mr Warwick Waters, Program manager

Organisation: CottonInfo

Postal Address: 115 Campbell St Toowoomba Qld 4350

Ph: 0437 937 074 **Fax:** **E-mail:** warwick.waters@crdc.com.au

Part 3 – Final Report

(The points below are to be used as a guideline when completing your final report.)

Background

1. Outline the background to the project.

Cotton Mealybugs have moved south from Central Queensland with confirmed sightings on the Darling Downs and in the Macintyre Valley in January & February 2017. As a new pest in these districts, with the imminent threat of their movement the Gwydir and Namoi valleys, the CottonInfo Team acted quickly with a range of communications. Mealybug workshops were conducted in Dalby and Goondiwindi, however to reach a larger geographical area a webinar was thought to be a suitable extension tool. John James, Director High Impact Training was engaged to provide support in developing and running of the webinar.

Objectives

2. List the project objectives (from the application) and the extent to which these have been achieved.

- 1) To provide NSW growers and consultants with the information on:
 - Identifying, reporting and managing mealy bug outbreaks on their properties
 - Prevent the spread of mealy bug
 - Hear from a CQ consultant with practical experience in managing mealy bugs

- 2) To provide professional development for the CottonInfo team on designing and running effective webinars.

A comprehensive evaluation took place to examine the impact of the webinar in terms of growers and consultants increased knowledge and awareness of Cotton Mealybug identification, management, control and methods to minimise spread.

Methods

3. Detail the methodology and justify the methodology used. Include any discoveries in methods that may benefit other related projects.

Webinar planning document was developed and key presenters identified. See Attachment 2 Webinar Planning Document.

Warwick Waters met with John James to discuss Go-To-Webinar who then provided some very useful advice on running webinars in his “Tips for CottonInfo Webinars” (see Attachment 3) which was shared across the CottonInfo Team.

John James also provided preliminary feedback and suggested changes in the Planning Document, powerpoint presentation, polling and survey questions (see Attachment 3).

Outcomes

4. Describe how the project’s outputs will contribute to the planned outcomes identified in the project application. Describe the planned outcomes achieved to date.

- 25 registrations
- 14 attendees. This included a mix of growers, consultants and industry personnel located in Northern NSW and Southern Qld, none of which had ever experienced a Mealybug infestation.
- The webinar was posted on the CottonInfo youtube channel on 4th April 2017 and there have since been 39 views.
- 87.5% (7 out of 8) evaluation respondents found the webinar useful, with 62.5% (5 out of 8) indicating that the webinar was extremely useful. This was supported by the attentiveness of the attendees on the webinar, scoring 87.92% (Go-to-webinar analytics).
- All respondents increased their understanding of cotton mealybug identification and lifecycle as a result of attending the webinar. The average understand before the webinar was 2.1 and this increased to 3.9 after the webinar on a scale from 1 to 5, where 1 was no understanding and 5 was excellent understanding.
- All respondents increased their understanding of management options to control Mealybug as a result of attending the webinar. The average understand before the webinar was 2.1 and this increased to 4.3 after the webinar on a scale from 1 to 5, where 1 was no understanding and 5 was excellent understanding.
- 75% of respondents increased their understanding of farm hygiene practices and their importance in preventing Mealybug spread as a result of attending the webinar. The average understand before the webinar was 3.4 and this increased to 4.6 after the webinar on a scale from 1 to 5, where 1 was no understanding and 5 was excellent understanding.
- Interesting, only 50% of respondents said the practice come-clean-go-clean all of the time, 25 % most of the time and 25% some of the time. One consultant questioned Damien Erbacher on how he practically implements come-clean-go-clean when visiting multiple farms and fields. His response is presented in Attachment 4. One issue raised by a consultants was the distance they travel to their client’s fields, eg they may have travelled 150km to visit 3 or 4 farms in that district, can’t duck home to change clothes, clean cars etc, so distance and practicality can make come-clean-go-clean difficult in some circumstances.

Webinars are an effective tool to provide information to grower, consultants and industry personnel located right across the industry. It’s also a useful means of getting key researchers and presenters together to share their knowledge without the expense of travel and their time.

One participant sent the following feedback: Thanks Janelle, I enjoyed today's webinar. So easy, efficient, was able to get work done at same time. Keep them coming, Consultant, Moree.

The complete results from the Webinar Evaluation are provided in Attachment 5.

The webinar was recorded and posted on the CottonInfo youtube Channel (<https://www.youtube.com/watch?v=cvbp5wCHBms&t=122s>). The recording was made available to the cotton industry through CottonInfo industry subscriptions and also emailed to all registrations. As of 28/04/17 there had been 39 views.

5. Please report on any:-

- a) Feedback forms used and what the results were
- b) The highlights for participants or key learnings achieved
- c) The number of people participating and any comments on level of participation

Please refer to evaluation report presented in Attachment 5.

Budget

6. Describe how the project's budget was spent in comparison with the application budget. Outline any changes and provide justification.

The actual expenditure did not change from the proposed budget.

Conclusion

7. Provide an assessment of the likely impact of the results and conclusions of the research project for the cotton industry. What are the take home messages?

The Mealybug Webinar provided the opportunity to extend information on the latest Mealybug spread right across the Australian Cotton Industry. Three key presenters were able to share their knowledge, research and experiences. As a result, the participants increased their knowledge and understanding of Cotton Mealybugs including: identification, lifecycle, management, options to reduce their spread and control strategies. A mix of researcher, consultant and technical specialist provided a good mix to discuss latest research and practical applications along with best management practice.

John James provided some excellent advice and feedback to improve the webinar presentation which was most valuable to the CottonInfo team.

Attachment 1: Webinar promotional advertisement



**Mealybugs in cotton:
the what, where and
why webinar**

Thursday 23 March,
1pm (AEDT).

Featuring researcher
Richard Sequeira,
consultant Damien
Erbacher, and
CottonInfo's Sharna
Holman.

[Register now!](#)





MEALYBUG WEBINAR PLANNING DOCUMENT

MANAGEMENT:

Activity name:	Webinar – Mealybugs - Where, why, what, when and how.		
Purpose of activity:	To raise GROWER awareness of the recent spread of Mealybug into Sth Qld and Nth NSW and provide information on identification & monitoring, impact and management to reduce or prevent further spread. TARGET AUDIENCE – Growers & consultants		
Clear objective that the activity aims to achieve:	The objectives of the webinar are: 1) To raise grower awareness of the current spread of mealybugs and conditions that favour their spread. 2) To increase grower ability to identify mealy bugs in the field. 3) To ensure growers understand what to do if they find them – process of confirmation, current treatment/management. 4) To raise understanding of possible implications of a mealy bug infestation. 5) To increase grower knowledge and understanding of farm operations that can influence mealy bug populations. 6) To ensure growers make come-clean go-clean a priority this season to help prevent the spread of disease.		
Overall project lead:	Janelle Montgomery, REO, Gwydir Valley		
Other team members involved:	<i>Name</i>	<i>Role</i>	<i>Responsibility under this project</i>
	Warwick Waters	CottonInfo Manager	Webinar tech support, evaluation and reporting
	Geoff Hunter	REO, Namoi Valley	Agenda, purpose, content
	Richard Sequeira	QDAF Researcher	Presenter, content.
	Damien Erbacher	Theodore Consultant	Presenter
	Sharna Holman	Tech Specialist Biosecurity	Possible Presenter Come-clean-go-clean Tech support, content.
	Sandra Williams	Tech Specialist IPM	Tech support, content
	Ruth Redfern	Comms Manager	Communications – Webinar promotion

BUDGET:

If activities require funding from the CottonInfo budget or CRDC, an Activity Proposal will have to be completed and lodged with CRDC.

Item	Quoted cost (incl. GST)	Actual cost (incl. GST)	Status
John James Webinar Support	\$660	\$660	
Totals:			

ACTION PLAN:

Category	Item	Responsibility	Deadline	Status
Planning	Confirm agenda, presenters and date of event	Janelle and organizing committee Janelle to send out calendar invite for practice session and actual webinar	9 th March 2017	Complete
Planning	Setup go-to webinar	Janelle	9 th March 2017	Complete
Publicity	Prepare webinar flyer for distribution by REOS to local networks.	Ruth Redfern	10 th March 2017	Complete
Preparation	Prepare powerpoint slides	Janelle and presenters	Friday 13 th March 2017 1pm NSW time.	Complete
Preparation	Meet with John James to discuss webinar evaluation techniques and polling	Warwick	Friday 17 th March 2017 1pm NSW time.	Complete
Preparation	Develop evaluation material – Polling questions, end of session evaluation.	Warwick, Janelle, Geoff.	Monday 20 th March 2017 1pm NSW time.	Complete
Preparation	Practice webinar with presenters	Janelle and presenters (Janelle (organizer), Warwick, Richard , Damien & Sharna - panelists)	Wednesday 22 nd March 2017 late afternoon.	Complete
Webinar delivery	Deliver Webinar	Janelle and presenters	Thursday 23 rd march at 1pm NSW time	Complete
Webinar recording	Send recording to Tonia Grundy for top and tailing and posting onto cottoninfo	Janelle	Immediately after webinar to be posted with a week of webinar onto cottoninfo website.	Complete

	website			
Wrap-up	Collate evaluation material and enter into myData	Janelle/Warwick/Geoff		Complete

REPORTING:

On completion, activity M&E should be recorded on YourDATA. If the project is a funded activity, a final report will need to be completed and submitted to CRDC using the reporting template.

Date: Thursday 23rd March 2016

Time: 1pm NSW time

Presenters

- Richard Sequeira – confirmed
- Grower/consultant – Theodore Damian Erbacher, Theodore 0409 484940 – confirmed (backup if Damien is too busy Dave Parlato from Emerald – 0408 771 848)
- Sharna Holman – Ratoon and volunteer cotton, come-clean-go-clean.

Tech support – on webinar and can help with questions/discussion

- Mozzam Khan – Technical specialist that could help with questions.
- Sandra Williams – IPM, Technical specialist that could help with questions.
- Annabel Twine – CottonInfo RDO, Darling Downs

Webinar Outline:

Time (mins)	Information	Presenter
0 – 2	Welcome, introductions & housekeeping	Janelle Montgomery
2-8	Background to Mealybugs Current spread Identification Damage symptoms How do they spread. What conditions have led to infestations	Richard Sequeira
8 - 15	Consultant experience of a mealybug outbreak • Implications of mealybugs • How serious is a mealybug infestation? • How did you manage the outbreak in CQ? • How do you manage mealybugs now?	Theodore Consultant (Damien Erbacher)
15 - 20	What to do if you think you have Solenopsis mealybug – run through steps • Correct identification • Plant Pest Hotline on 1800 084 881 • Mark the plants • Look for the presence of natural enemies • Come Clean Go Clean	Richard Sequeira
20 - 27	Management Strategy – Late season management options.	Richard Sequeira

	• Spray options, crop destruction, • impact of defoliation, • impact if you don't pupae bust on volunteers • preparing for next season (IPM, early season management).	
27 - 35	Come Clean-Go Clean – importance of farm hygiene with picker and machinery movement, ratoon and volunteer management	Sharna Holman
35 - 45	Questions	Janelle Montgomery
45 - 50	Wrap-up, further information slide	Janelle Montgomery

Behavioral changes that we want to focus on –

- 1) Growers need to understand the conditions that favour mealy bug infestations.
- 2) Growers need to know the implications of a mealybug infestation – how serious is it?
- 3) How serious can it be if no management put in place? Can it be managed?
- 4) Growers need to understand the process if they find mealy bugs on farm.
- 5) On-farm hygiene, adoption of come-clean-go-clean. Particularly important this season pickers and other machinery moving between fields and farms. What is best practice, how do we implement come-clean-go-clean – people, clothing, boots, machinery, vehicles.
- 6) Crop destruction – root cutting, mulching. Importance of not having volunteer cotton after the crop as it's a host for mealy bug.
- 7) Pupae busting in another cultivation pass that can clean up missed volunteers. Those that defoliate before end of march don't have to pupae bust, how do we prevent volunteers.
- 8) Growers need to understand that the closer we get to defoliation, the less options there are for control and therefore less impact on mealy bug populations.

Attachment 3:

Tips for Cottoninfo Webinars

John James has provided some tips on running a better webinar. There are opportunities to improve the engagement and impact of webinars in the lead up, during the webinar itself and in the follow up.

Start Early

The registration process allows you to ask questions. These can include questions that help your presenter(s) know the audience and the issues they would like covered. Examples include “what do you want to find out from this webinar?” or a more specific “are you having problems controlling this pest or disease?”.

John is a fan of the “flipped classroom” approach, where participants have access to the information before the event, and the event is about the participants discussing and questioning the presenter. This could be through inviting participants to watch a video or read material before the webinar.

Typical rates of participation are 30% of those that register. Figures of 50% are very good, but don’t write off those that register and don’t attend. Include them in the follow-up as they have expressed an interest and are more likely to watch recordings on the webinar.

Reminders can be scheduled, John would typically send reminders a day and an hour before events.

Planning the Process

Webinars are good for 30 to 45 minutes of interaction. John would recommend one presenter in most cases, maybe two, but no more than two. If you have more information that two can provide, consider running a second webinar.

Slides: Ask presenters to provide about one slide per minute of presenting to keep the screen dynamic. You don’t want one slide sitting on the screen for long periods. Slides should contain few words; you don’t want participants reading ahead of the presenter. Slides should be developed in the wide screen mode in PowerPoint so they fit computer screens. Slides should have no transitions or fancy actions; this confuses the video streaming process.

John uses a team of three to run a webinar. He has a tech person who does not speak or present, they just address tech questions that get posted by participants and are on the lookout for problems. Sometimes this is a fairly passive role with not much to do, but very useful if there are problems. This is not a high skilled IT person, but someone who knows how the program (GoTo Webinar) works. Second is the host, who does the introductions and facilitation. Third is the presenter, or presenters. It is best if these are in different locations.

Using a USB headset is best for audio. Using wireless or laptop mic’s can cause slight delays. GoTo Webinar (and Meetings) has recently been sold and transferred to a new server provider, and there have been sound quality issues since that occurred.

Always have participants on mute. People feel the need to introduce themselves before asking questions and will use 2 minutes before they get to the question. All interaction is through hand raising, polls and typed questions.

On the Day

Plan to start the webinar at T-30minutes. So 30 minutes before the start time the host logs on and makes sure things are working. At T-15 minutes’ presenters log on. Consider the webinar the same as a face to face meeting in that you want to be there to greet and interact with participants as they arrive. At T-10 minutes, start introducing the tools you want to use during the webinar such as raising their hands (this is a good early test to make sure people can hear you and they can respond,

John can relax a fair bit when he sees those first responses). Ask people to type in their location and what the weather is like (this starts people chatting through comments). Always display the list of participants so people can see who else is there and feel part of a group.

At the start time, host welcomes and introduces presenter(s). It's good to go straight to a poll such as "where are you normally located?" Give people a short time to respond and count down from 3 to indicate you are closing the poll. Not everyone will respond. Always show the results! This is a primer for throwing in polls through the webinar. If you have yes/no questions, just use hand raising to get feedback.

At T+15 minutes have a Q&A session. As the presenter for a few questions on things they would like raised that are not in their presentation as a backup if no questions come in. If you get too many questions, encourage people to contact the presenter after the webinar. Don't promise the presenter will follow up questions, there could be 100's and they can be vague and context free.

Post Event

The GoTo Meeting evaluation is quite limited, better to send out a Survey Monkey evaluation. Send the evaluation to all those that registered and assume that some of those that did not participate will watch the recording. Thank everyone for registering (not participating) and provide any links to extra resources and the recording if possible. Follow up one week later.

GoTo Webinar provides useful analytics. It has an attendance report, including interest level (it can tell if you start checking emails during the webinar). It also records the poll results. Analytics are available for 12 months after the event.

Further feedback from John James

Hi Janelle

Thanks for sending those documents through.

Overall it is looking good and here are some quick suggestions you might like to consider...

1. With your PPT presentation...

- I'd just have all the logos on the title slide and remove from all others. Having eight logos really clutters the slides and distracts from the focus. In some cases the writing towards the bottom of the slides is obscured by the logos.
- If you can, replace chunks of text with a picture. Unfortunately people can read much faster than you can talk and so will then be tempted to check their emails etc. Using pictures forces people to listen to what you are saying.
- Slide 1: It'd be good to include a head and shoulder photo of yourself, as it helps your virtual audience better connect with your voice.
- Slide 3: Include a head and shoulder photo of each presenter. Also, on my screen the word Agenda is floating half way down the page.
- Use a few words and several high quality photos.
- I suggest you turn off the automated go to webinar follow up messages for future webinars (in the settings for each webinar), as they add little. It's better to download the attendee report afterwards (which shows the

emails of all those who registered for the event plus those who attended and their interactions), and then send your own follow up email.

Let me know if you have any questions

Kind regards

John



Dr John James

Director | High Impact Training

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e: john@highimpacttraining.com.au

w: www.highimpacttraining.com.au



Attachment 4: How does Damien Erbacher, Consultant, Dawson Ag, Theodore, practically carry out come clean go clean in his consultancy business

It is obviously a pretty difficult task for a consultant having multiple clients and especially around Theodore Irrigation Scheme with client's fields intermeshed with other client's fields. We have a limited number of fusarium/ disease fields to deal with.

1. Stay out of fusarium fields when wet. If absolutely have to check them then we check these fields last and we clean our feet in the head drain of that field which will usually have water in it if the field is wet. Farms with greater fusarium risk we have a policy to clean feet/legs before leaving that farm no matter the situation and usually with Farm Cleanse.
2. Vehicles never go anywhere near fusarium fields when it is wet.
3. Vehicles are kept clean as much as practical.
4. This would go for Vert Fields as well or high BBR fields.
5. As for Mealybugs. It is a similar process. Stay away from hotspots as much as possible and when checking them, we check them last on the farm and practice a solid brush or wipe down technique when leaving the spot. If wearing boots and socks need to pay particular attention to your socks and in the boots. Crawlers are obviously harder to see especially on your skin but they move quickly around and you can easily feel them moving around similar to Aphid nymphs. We just wash legs and arms when leaving farms.
6. Keep vehicles away from any weeds etc that may be holding Mealybugs.
7. If there is starting to be more Mealybugs showing up in checks need to pay even more attention to plants walking in and out of fields as Mealybugs are quite difficult to see in low numbers and you can unintentionally be picking them up and moving them. Especially for casual staff!

Attachment 5: Evaluation Report

Webinar: Mealybugs in cotton, what where and why

Date: Thursday 23rd March 2017, 1 – 2 pm

Organiser: Janelle Montgomery & Warwick Waters

Presenters:

- Dr Richard Sequeira, Principal Research Scientist, QDAF
- Damien Erbacher, Director and Consultant, Dawson Ag
- Sharna Holman, CottonInfo Technical Specialist Biosecurity & Disease, QDAF

Agenda:

Richard Sequeira, QDAF

- Current spread
- Identification & lifecycle
- How do they spread
- Damage
- Management



Damien Erbacher, Dawson Ag

- How serious are they?
- Implication on production
- Experiences since 2010 outbreak
- How we manage mealybugs now?
- Advice for others



Sharna Holman, CottonInfo/QDAF

- What you can do if you find it on your property / in your crop
- Importance of farm hygiene
- Come-Clean-Go-Clean



The Webinar was promoted through CottonInfo networks (see Appendix 1, Webinar advertisement). A planning document was prepared with assistance of Warwick Waters and presenters (see Appendix 2). A comprehensive evaluation was conducted which included webinar poll questions and survey. The results are reported below.

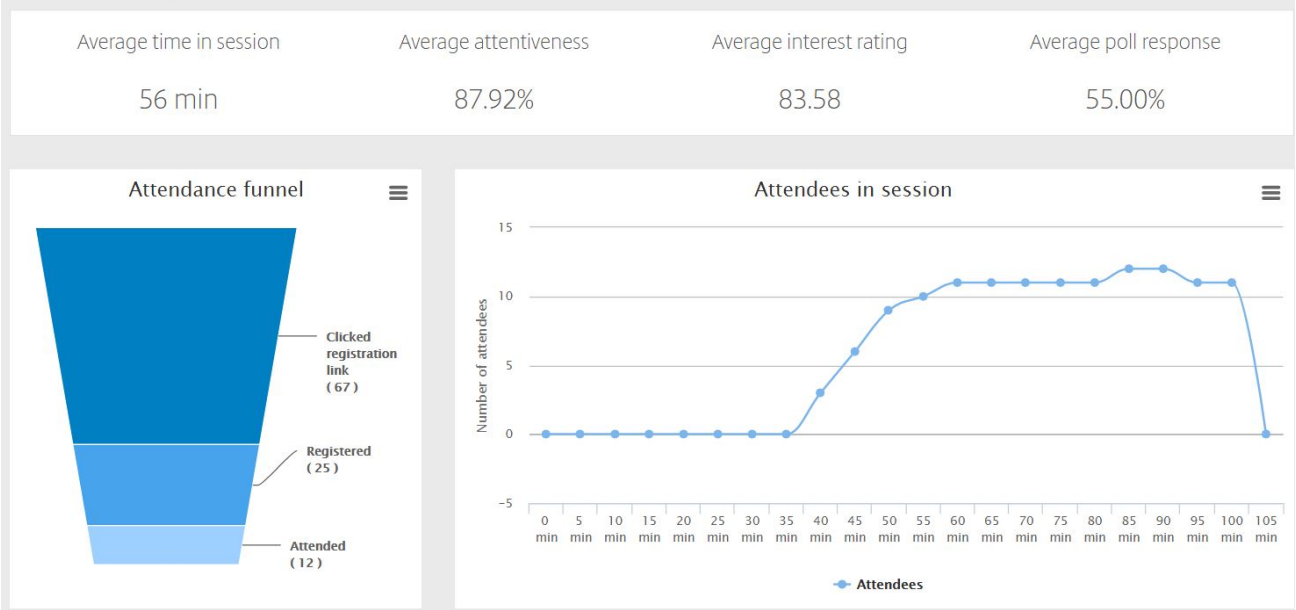
Evaluation Results:

Registrations and attendees

- 25 registrations
- 14 attendees
- Average attendee interest rating = 84%
- Average attendee attentiveness = 87.92%
- 8 evaluation respondents

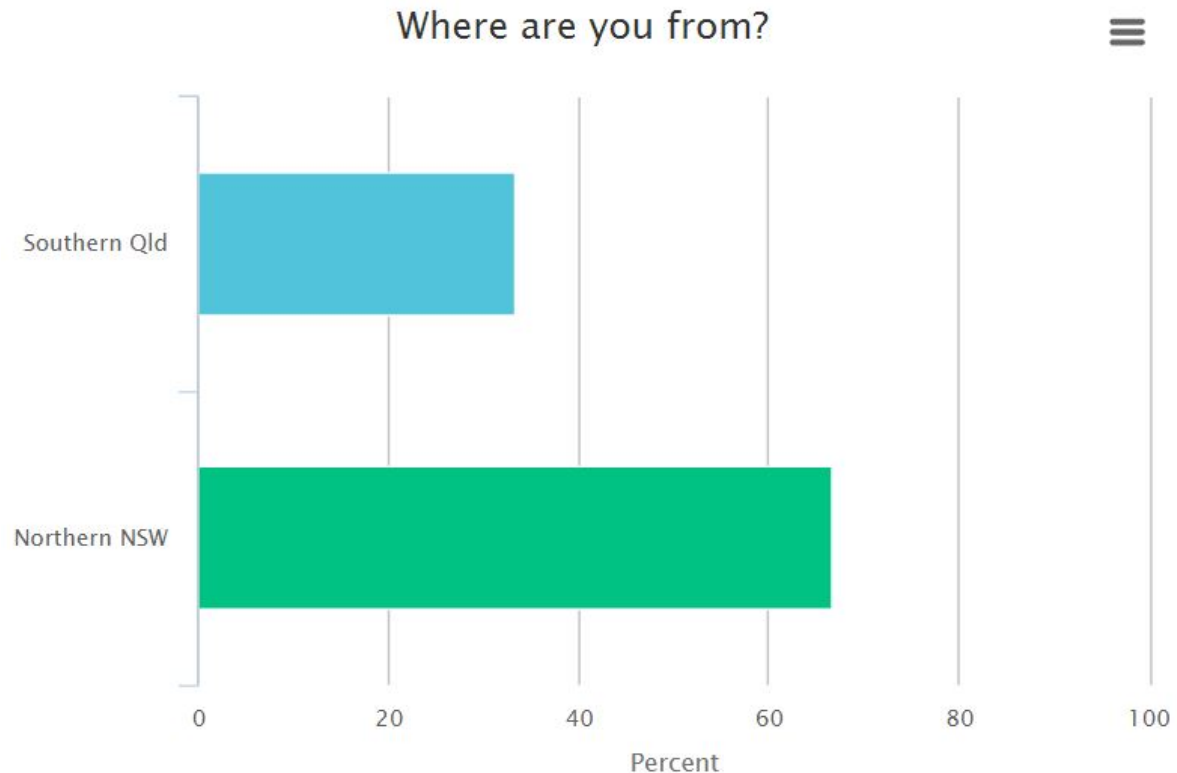
Analytics for Mealybugs in Cotton - The What, Where and Why Webinar

Mar 23, 2017, 12:15 PM AEDT

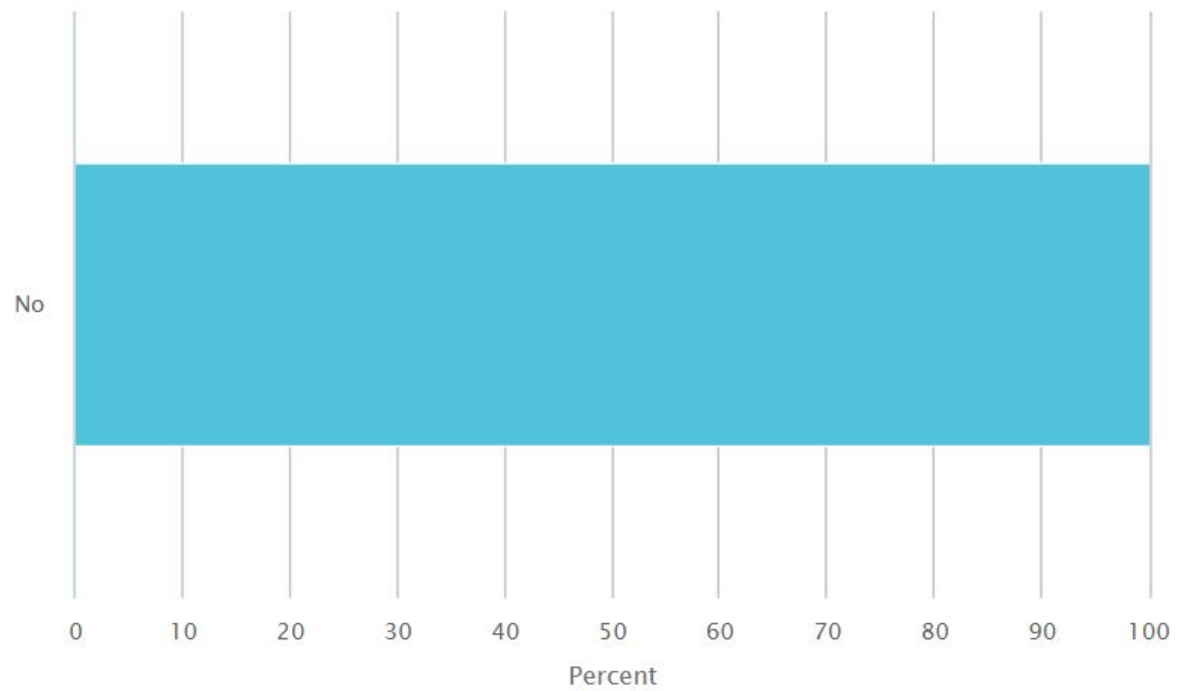


Webinar Polling Question

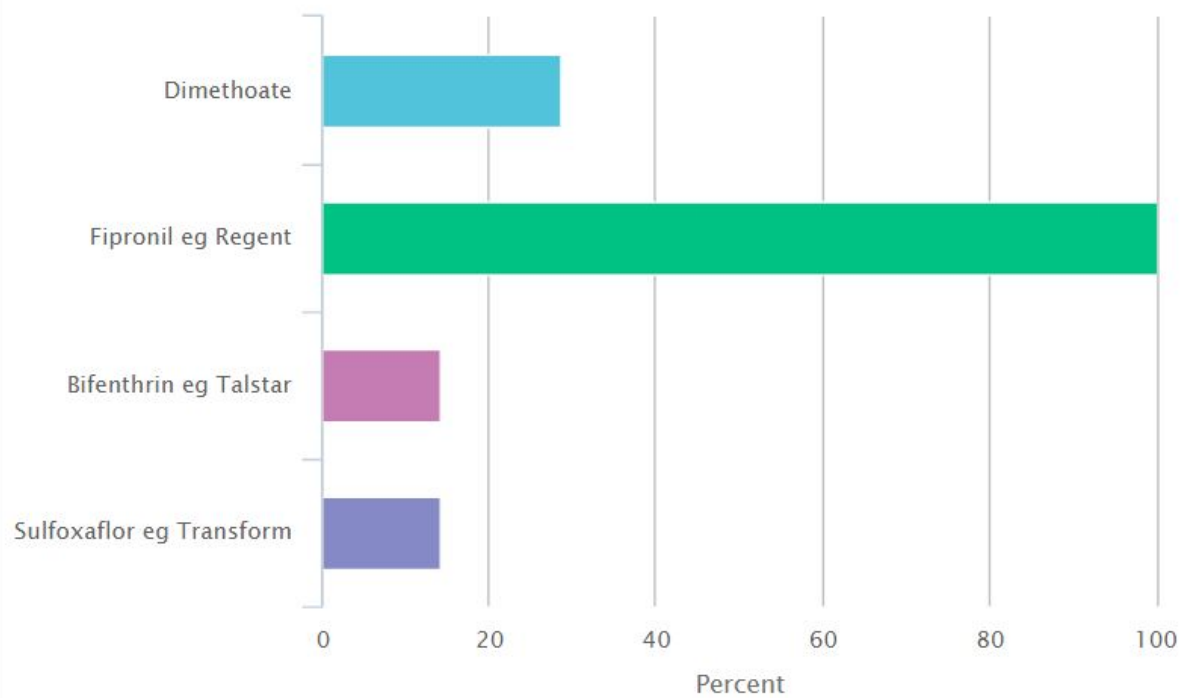
Webinar participants were asked “polling” questions during the webinar. Participants answer the question that comes up on their screen and results are automatically collated and the charts can be shared with participants. The results of the polling questions are provided in the Figures below.



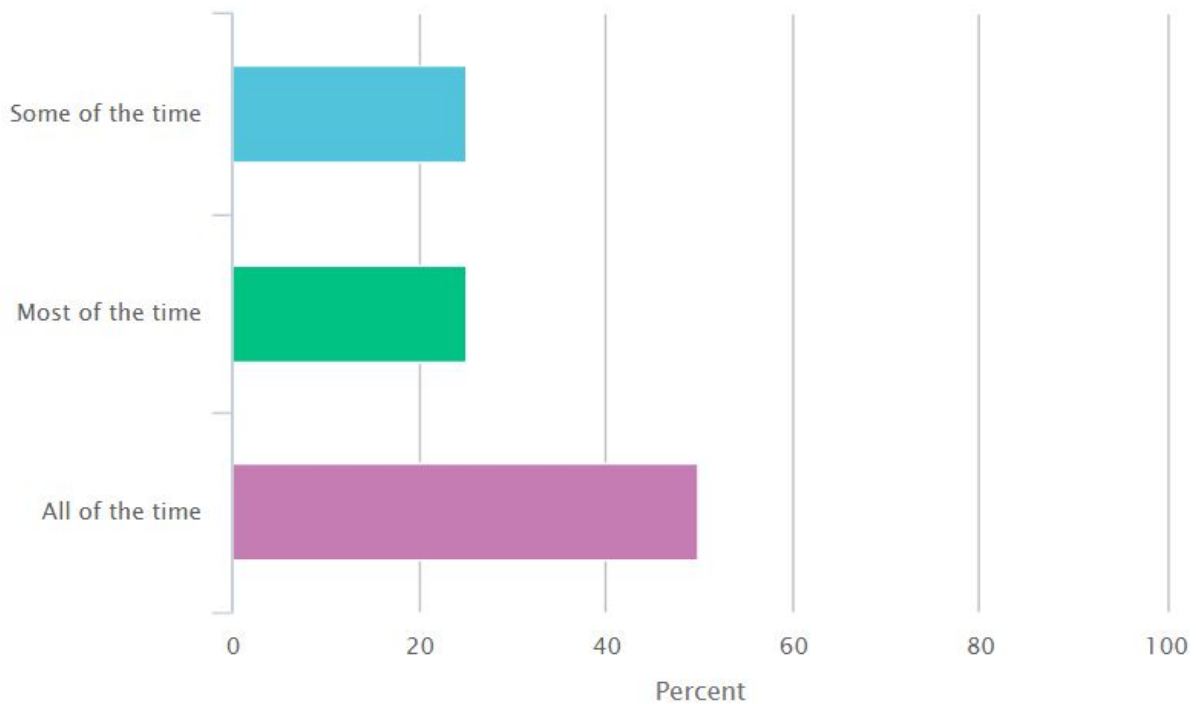
Have you had to manage a mealybug infestation?



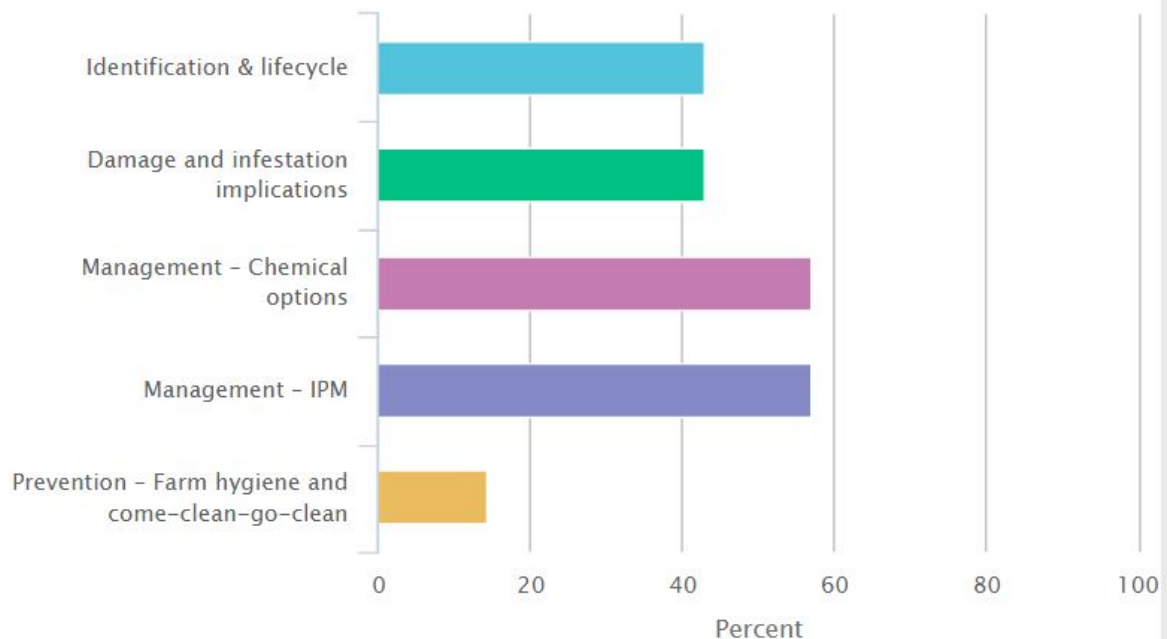
What products do you use to control early Mirids



How often do you practice come-clean-go-clean?



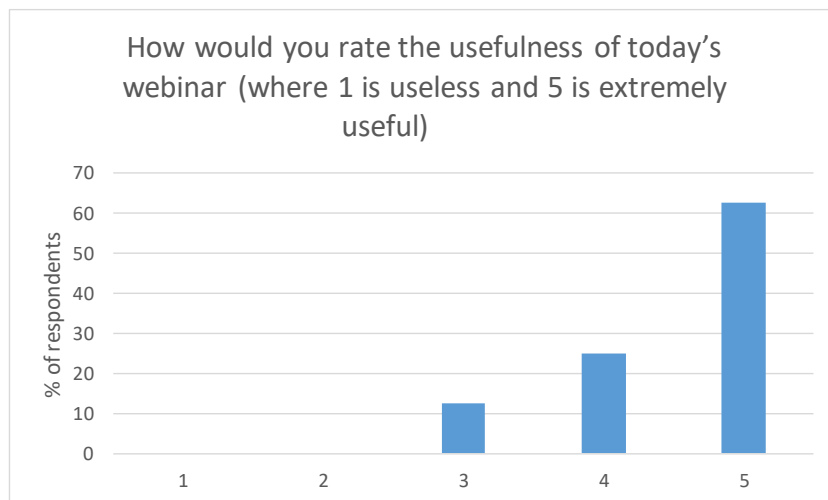
Which of the following Mealybug topics do you require more information on?



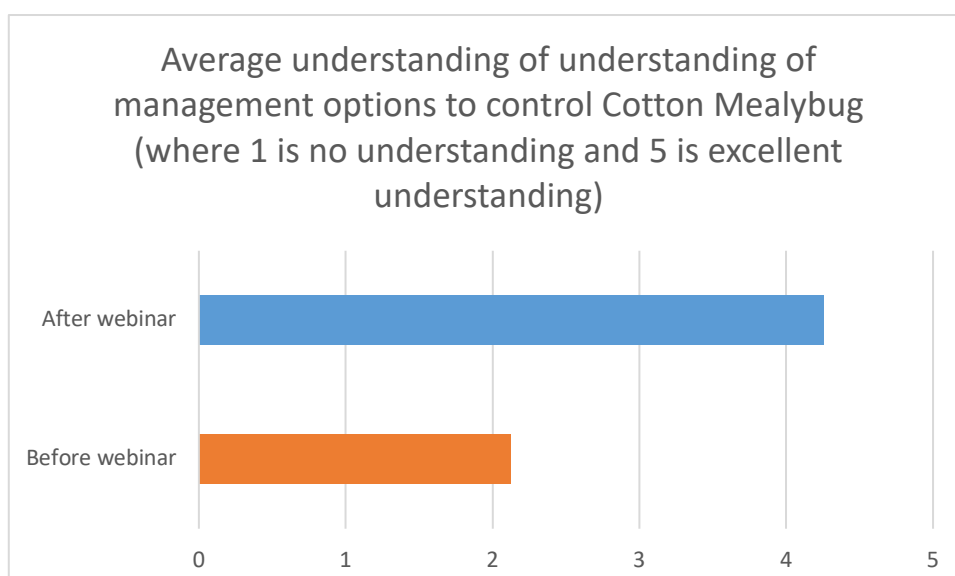
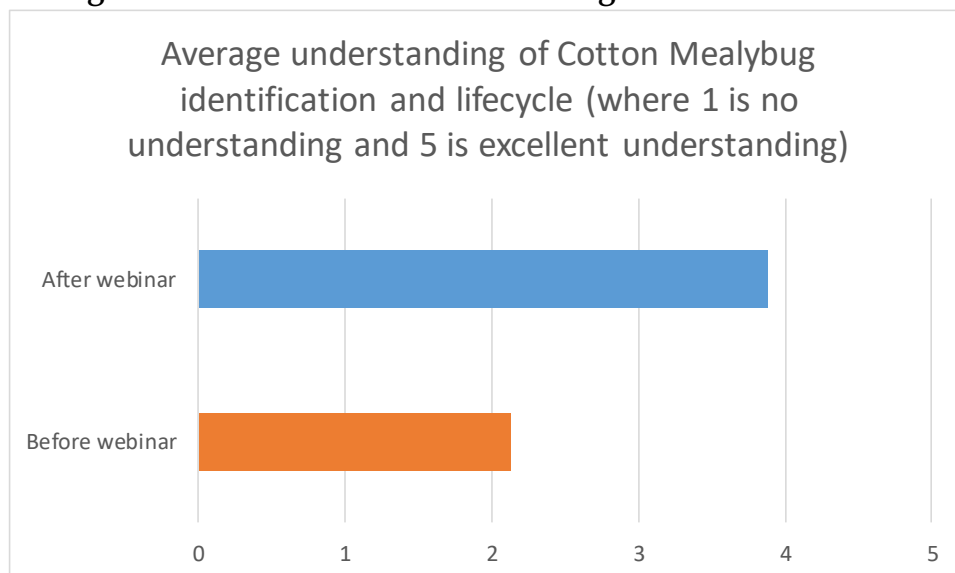
Webinar Survey

At the end of the webinar participants were asked a series of questions to evaluate changes in knowledge, understanding and awareness. 8 of the 14 (57%) participants completed the survey. The responses were collated and results presented in the following charts.

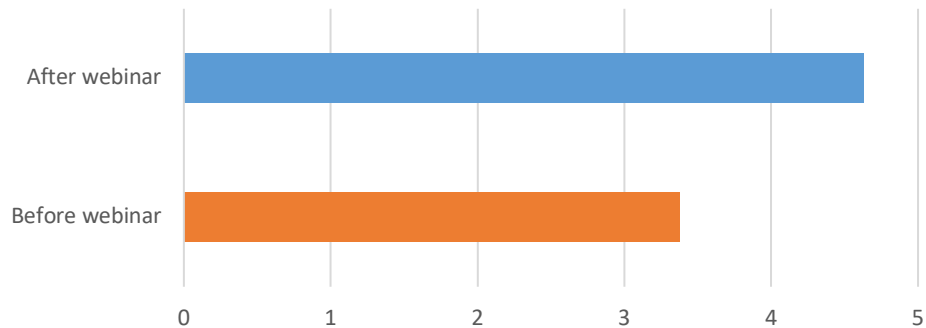
Webinar content evaluation



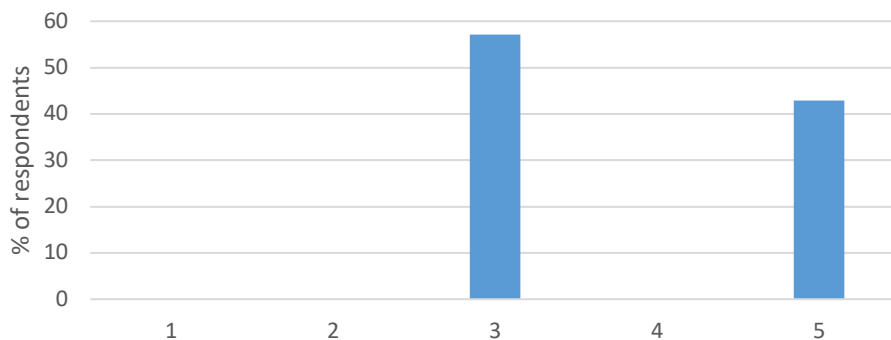
Changes in KASA as a result of attending the Webinar



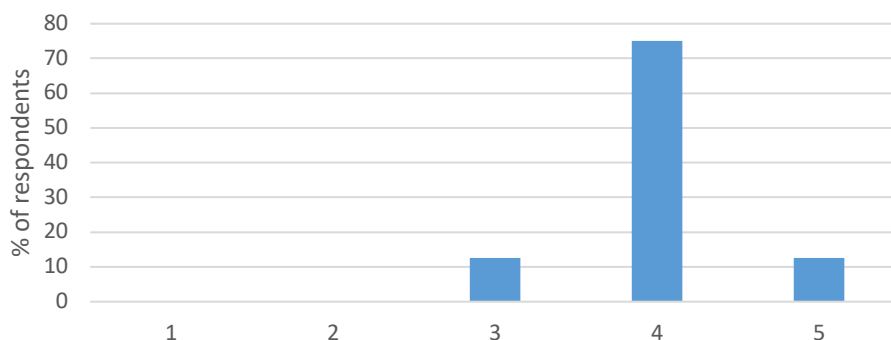
Average understanding of Farm Hygiene practices and their importance in preventing Mealybug spread (where 1 is no understanding and 5 is excellent understanding)



To what degree has this webinar provided you with information to better control the spread of mealybug? (where 1 is no help and 5 significant help)



To what degree has this webinar provided you with information to better manage an outbreak of mealybug on your farm (or client's farms)? (where 1 is no help and 5 significant help)



Webinar Questions:

- 1) How long from I'd to complete destruction in this field?
- 2) What products shouldn't you use when you have mealybug?

- 3) Imidacloprid / samurai are quite effective through drip in smaller hort crops
- is there any early season suppression that is useful in preventing the mealy bug starting or delaying their 1st generation (Like seed treatment or remix was my angle)
- 4) Temik or cruiser - any activity or differences
- 5) If we find some in a hot spot what do we do to control them
- 6) What are we looking at chemical wise to control these
- 7) I imagine the oil is used, then is its mode of action through suffocation? If yes what sorts of application techniques required to get sufficient coverage on the mealy bugs? Or does the oil have some other effect on the mealy bug?

Webinar feedback

Thanks Janelle, I enjoyed today's webinar. So easy, efficient, was able to get work done at same time. Keep them coming.

Cheers

Rob

Rob Holmes

HMAg, Moree 2400

Well done to all the presenters, Adam Kay, Cotton Australia

Webinar Recording

The webinar was recorded and is available on the CottonInfo youtube Channel

<https://www.youtube.com/watch?v=cvbp5wCHBms&t=122s>

The recording was made available to the cotton industry through CottonInfo industry subscriptions and also emailed to all registrations. As of 28/04/17 there had been 38 views.