



FINAL REPORT

Part 1 - Summary Details

Cotton CRC Project Number: 502.02

Project Title: [Technology Transfer Centre II and III](#)

Project Commencement Date: 01/07/08 **Project Completion Date:** 30/06/2012

Cotton CRC Program: program 5 Adoption

Part 2 – Contact Details

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Signature of Research Provider Representative: _____

Part 3 – Final Report Guide (due at 31st May 2012)

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

Background

1. Outline the background to the project.

This project maintained the purpose of the cotton industries Technology Resource Centre (TRC) that has operated through previous Cotton CRC's i.e. to provide and support a pathway of resources from research to industry. The Cotton TRC was established with the CRC for Sustainable Cotton Production in 1993. The TRC's role has been to facilitate the delivery of research based information to the cotton industry, and to relieve some of the pressure on researchers from day to day enquiries that can impinge on research efforts.

In recent years there has been a decline in requests for hardcopy documentation and an increased demand for information to be supplied on the web. This project has had a major input into the development and maintenance of the Cotton CRC web site that meets this need.

The Cotton CRC website has continually developed, changed and improved since the beginning of the first Cotton CRC. It holds all of the significant documents and tools created over the past 20 years in the Australian cotton industry. Recent surveys indicate the Cotton CRC web site is currently a major access point (79% of consultants access the site occasionally or more often) to research based information created through projects supported by the CRDC and the Cotton Catchment Communities CRC.

There are numerous linkages from myBMP to the Cotton CRC web site based material.. The site has an Australian focus of clientele with 66% of all visits and 91% of returning visits to the current site are from Australia.

A part of the distribution system the TRC project is also heavily involved with the maintenance of the industry mailing and email list that is shared between industry organisations (Cotton CRC and CRDC). Sub sets of the list are used by researchers and extension officers in their area. Via the list important documents such as the pest management guide for cotton are mailed to industry. The industry could also be rapidly notified of important updates on the research website via the email listing (this list covers over 50% of the total listing and most consultants and agronomists in the industry)

The TRC is an integral part of the national extension network and worked closely with extension officers with distribution of information in support of improving industry practice.

The project also supported research and extension through the provision of online resources for questionnaires and surveys as well as conference support

including registration and website creation, and production of resources such as MP3 CD post conference.

The TRC project also supported Aboriginal Employment Strategy School Based traineeship program by hosting a trainee who was required to undertake 800 hrs of work over the 2 years and this could be 1 day a week or in blocks over the school holidays.

Objectives

2. List the project objectives and the extent to which these have been achieved.

All project objectives have been achieved

- Maintain and improve cotton industry research web site available to the public
- Maintain Cotton CRC intranet (Staff Lounge) for researchers' partners and people closely associated with the Cotton CRC. In order to improve internal CRC communication and make better use of CRC resources. The are in highlighting extension team propriety groups
- Continue day to day operation of TRC
- Maintain Industry mailing /email list, a primary tool for communication to industry
- Publications preparation- produced and distribute material in response to immediate industry needs
- Publications made available
- Publications internal / Video.
- Increase information flow to communities & NRM bodies
- Methods of enhancing existing information researched
- Support for CRC Cotton Course and Community Education
- Assist with production of internal Communications material
- Participate in Development and Delivery team.

Methods

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

This project supported the maintenance of the Cotton CRC web site. The project also provided services for production and distribution of non web based material and support for Cotton CRC host events such as the Sustaining Rural Communities conference and CRC science forums by providing IT, audiovisual and technical support.

Employ an operations manager to run the centre.

The operations manager was responsible for:

- a) Website
 - Content updates and maintenance
 - Design and link

- Creation an maintenance of special needs intranets Eg Staff Lounge
 - Publication/material links to papers / abstracts
 - Internal links for direct update by staff eg papers etc
 - External links - new pathways for information (eg environmental BMP, DIPNR, CMA's)
- b) Handling day to day requests for information from industry.
- Grower/industry mailing/email database maintained by the TRC and shared with CRDC, ACGRA, CRC and industry extension officers.
 - Information repository
 - Information distribution
 - Front office and Library
 - Call centre for research based cotton information (nationally for growers consultants and the general public)
 - Web package support eg Day degree calculator
- c) Publication preparation
- Layout/ design / print preparation
 - Basic editorial
 - Work across CRC, CRDC needs
- d) Novel information packages and delivery systems
- CD/DVD Upgrade CD ROM pak.as necessary.
 - Enhance information in existing Paks (video and audio inclusions)
 - Information access/collation
- e) Provide support for BMP background information requirements
- f) Increase web content to cater for general public information
(Communities Program of the CRC)
- Cotton Seasonal Prompter Tool.

This project has been heavily involved with providing information to the community via specific pages supporting the Sustaining Rural Communities Conferences – These pages include links to presentations both visual and audio, production of MP3 CD's of conference Audio. An associated blog was created (using blogger). A separate site was prepared for the 2011 that uses a separate URL but is easily linked and reported on from our current site.

- g) Technology support for researchers
- Seminar Video Production – Improved dissemination of information to researchers and extension personnel
 - General IT support
 - PowerPoint / conference etc
 - Data sharing
 - Web form (questionnaire) creation and reporting

Results

4. Detail and discuss the results for each objective including the statistical analysis of results.

- **Maintain and improve cotton industry research web site available to the public**

The Cotton CRC web site has been constantly updated to provide the latest information and provide stimulating new content to encourage revisitation including:

- Include latest publications on the website and promote What's new pages RSS and Twitter feeds, and highlighting them on home pages and targeted eNewsletters (Cotton CRC eNews). See Appendix 1 Figure 6: Increased hits following enews campaign.
- Industry and Cotton CRC Events pages (linked with calendars),
- Reports on usage have been used to target underperforming pages ,
- Response to problems with site usage,
- Forms creation for on line ordering and hardcopy publication requests.
- Include new tools - Enhanced information from paper based publications and alternate methods of accessing content for example the Cotton Season Prompter

This tool was originally created on the Staff Lounge with input from Sandra Deutscher and was used as a tool by extension staff for planning the season – This has been transferred and updated to the public industry web site. The tool breaks the cotton season into logical time steps and highlights issues of relevance to that time of season the time steps include Continual Topics (All season), Post Harvest to Pre-Planting, Crop Preparation/ Pre-planting, Planting to Flowering, Flowering to Open Bolls, Open bolls to Harvest, Harvest.

- Possibility of smaller intranets with defined purpose For example the Sustaining Rural Communities conference pages
- Provision and maintenance of web based survey tools for extension officers, researchers and management of the CRC

Working through the process of updating the CMS with SEAMLESS to ensure the site had access to the latest features available in regard to the content management system. These updates, although not always straight forward, have enabled a number of the tools found on the site to be created and improved. See Appendix 1 Figure 3 The pest and beneficial ID tool

In the life of this project the number of hits has and increased significantly, Appendix 1 Fig 7 the returning visitor segment (from content access it is assumed that this group is more more likely to be associated with the industry or cotton communities). A high proportion of the visitation on the site is from an Australian audience - the core client group Appendix 1 Figure 1

- **Maintain Cotton CRC intranet (Staff Lounge) for researchers' partners and people closely associated with the Cotton CRC. In order to improve internal CRC communication and make better use of CRC resources.**

The staff lounge has been utilised for internal communications for example as a repository for researchers of the background information for Mealy bug as

responses were being formulated to this problem.

See Appendix 1 Figure 8 Access to staff lounge staff secure login pages

- **Continue day to day operation of TRC**

The project continued to act on requests for hardcopy information and has also streamlined the process of accessing traditional media by the provision of numerous on line forms for ordering research and extension material.

- **Maintain Industry mailing / email list, a primary tool for communication to industry**

The TRC project has played a major role in the upkeep of this contact list- A web based system has been trialled for cooperative use however it was found to be impractical at this point of time. The master list continues to be maintained by this project with assistance and feedback from CRDC, researchers and extension officers.

At the time of writing are over 3440 contacts on the industry contact list which includes growers, farm managers, consultants agronomists researchers, extension staff and other agribusiness contacts. Notifications are in place to ensure the list complies with the privacy act. The list is regularly used for CRDC spotlight mail outs, CRC Enews notifications, industry contacts for surveys and specific researcher's requests for contact details.

- **Publications preparation- produced and distribute material in response to immediate industry needs**

Publications prepared by this project include:

- IRMS tables for cotton pest management guide to 2010
- Aphid Ecology Information sheet
- Aphid Management Information sheet
- Cotton Bunchy Top Update Information sheet
- Rotation Crops and Cotton poster
- The project has also assisted with pre publication checking and preparation of tables for the Cotton Pest Management Guide

- **Publications web -**

Web publications (tools) have been developed that built upon existing hardcopy documents. Production related sets of pages include the On line symptoms guide , Pest and beneficial guide. Weed ID tool, and Herbicides damage symptoms guide (web only).

Natural resource management guide documents given this treatment include the Birds on Cotton Farms Guide (enhanced with indicator species bird calls) and Fishes on cotton farms.

Where possible PDF documents have been enhanced by this project for easier navigation especially when use in the field on tablet devices by including comprehensive bookmarking and linking in these documents. The PDF documents are available for download side by side with the web based tools

Specific set of pages have been created to support industry campaigns that integrate ID guides and management information, and the latest updates for example the Mealybug outbreak pages in 2010. See *appendix 1 Figure 9 Mealybug pages*.

The project has also value added to documents originally only planned for a hardcopy only audience (and therefore restricted in penetration by cost). A good example was the Calendar series Biodiversity, Communities, Birds and Fish. The information contained in the calendars was adapted to a web format and integrated with industry events page. The first biodiversity calendar achieved a high ranking in Google search engines that brought a lot of external traffic to the site that was highlighting the work in natural resource management research in the Australian Cotton Industry. These pages quickly became the most viewed set of pages on the site at that time.

- **Publications Internal/ Video.**

YouTube has been used a medium by this project to provide information in support of the Mealy bug campaign with 3 videos covering the issue release , YouTube has also been used to provide sampling techniques for NRM management and support of IPM with images of pest predation by common beneficial insects

The project has also produced DVDs of researcher presentations at science forums for internal distribution. Issues with quality of these Videos ahs led to an alternate way of presenting on the web with an audio voice over with slide images provided as support.

- **Increase information flow to communities**

This project in has supported the communities program of the Cotton Catchment communities CRC in maintaining and updating the communities group of the web site - region based pages were created and a new group created with its own URL www.sustainingruralcommunities.org.au to handle the SRC conference

Many of the pages and documents on the cotton CRC site are applicable to and used by the wider community. Examples include the Weed ID guides, Biodiversity calendar (this set of documents was one of our highest rating pages at the commencement of this project) , and background information on cotton. The site also promoted and hosted the Stubbs report a significant document in the current water debate.

- **Methods of enhancing existing information researched**

A number of initiatives have been trialled that were new to industry:

- MP3 CD for conference presentations.
- Audio live streaming and MP3 downloads from the web site.
- Combined audio PDF of conference presentations.
- Enhanced PDF files with comprehensive bookmarking and internal linking have been especially useful for Id guides like the Weeds ID guide (WEEDpak Section A3) and Cotton Symptoms Guide PDF.
- YouTube distribution campaign video (Mealybug) See CottonCRC on YouTube

- Alternate pathways to information discovery for example the cotton seasonal prompter tool.
- Extensive linking from web ID guides to management information.

- **Support for CRC Cotton Course and Community Education**

The TRC project has supported the UNE cotton course with the provision of hardcopy and electronic information. The coordinator has presented at a number of residential schools outlining information available, sources and technologies available for accessing same.

The project also assisted and was assisted by an Aboriginal Employment Strategy School based trainee for an 800 hour period over the course of the year. The Trainee become familiar with CMS operations and skills required in maintaining and updating sites,

- **Assist with production of internal Communications material**

The project has assisted groups with internal sharing of information via password protected groups on the Cotton CRC web site via for example the Mealy bug working group.

An internal staff lounge has also been available for researcher use.

This project also assisted in the creation and distribution of cotton chat electronic newsletter to internal Cotton CRC audience

- **Participate in Development and Delivery team**

This project has been integral with the National Extension (Development and delivery) team – Sharing of information such as contact list updates, assisting with nation extension team tasks as phone surveys, and providing a long lived platform for products from the team such as the Cotton Tales newsletters and provision of web based forms for surveys when required.

The web site was a key par of dissemination of information in national campaigns such as the mealy bug outbreak.

Outcomes

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

This project has contributed to building a major communications conduit for the Cotton Catchment Communities CRC and for the cotton industry as a whole.

The Industry contact list maintained by this project is a key tool for contact of decision makers in the Australian Cotton industry.

Resources provided by this project have enabled rapid generation of extension material (paper and electronic) for the industry in response to industry problems.

Surveys conducted by industry have indicated that the website and the tools hosted there are amongst the most important sources of information for decision making in the cotton industry (Appendix 3) This easily accessible knowledge has helped to increase the adoption of research leading to enhanced productivity sustainability and profitability.

The site also rates highly in Google page rank of sites that is an indicator of the number and quality of links to a site see Appendix 2.

The project has trialled and utilised a number of web and electronic technologies to target client groups including:

- Audio (downloads, Streaming audio and MP 3 CD)
- Video: (DVD, YouTube and streamed)
- Electronic publications (PDF and enhanced PDF via the web, PDF indexed standalone CDs)
- As advances have become available in the CMS used to host the web site new tools have been developed to provide an improved experience for users.

All of the technologies appear to have place in information distribution in the industry.

6. Please describe any:-
 - a) technical advances achieved (eg commercially significant developments, patents applied for or granted licenses, etc.);
 - b) other information developed from research (eg discoveries in methodology, equipment design, etc.); and
 - c) required changes to the Intellectual Property register.

For listing of the top viewed pages and PDF files please see Appendix 2

Figure 10: top 25 Web pages 2008-2012

Figure 11: top 25 Web pages Sans Weed ID 2008 -2012

Figure 12: top 25 PDF documents April 2009 -2012

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?

This project has been successful in providing a conduit for getting research and extension information to industry and the community via the web, electronic and postal pathways.

The project has provided support for researchers and the cotton development and delivery team, to make their message available successfully to industry and the public.

The project has put in place a mechanism to ensure the continuity of information access to industry and the community post Cotton CRC.

Extension Opportunities

8. Detail a plan for the activities or other steps that may be taken:
 - (a) to further develop or to exploit the project technology.
 - (b) for the future presentation and dissemination of the project outcomes.
 - (c) for future research.

The Cotton CRC site has been restructured for a post CRC existence – Publications being concatenated from the multi segment format and are being made available in metadata driven lists. This should make it easy for users to source information (if not in an exciting manner!).

The process of metadata should stand the site in good stead for access by post CRC sites wishing to access CRC produced tools and documentation.

The rise in the use of mobile devices (Appendix 1 Fig 4), tablets and phones to store, access and process information in the field is showing great promise in making the products of cotton research available in the field when decisions are being made. Even small investments in updating existing information and consideration of layouts at the time of writing of longer documents should make existing information more available to a mobile audience.

Publications

9. A. Publications relevant to this project.

Peer reviewed articles / books

Non-peered reviewed articles

Presentations (conference, field days, workshops etc)

Cotton CRC Science Forum 2012

- B. All other publications by project team during this period.

Peer reviewed articles / books

Non-peered reviewed articles

Information sheet: Aphid ecology in cotton Research :Lewis Wilson¹ Grant Herron² , Tanya Smith¹, Bernie Franzmann³ and Simone Heimona¹ Review Input: Rod Gordon⁴, Tracey, Farrell² James Hill² ,David Larsen¹
Cotton insects On Farm Series: How To | August 2008

Industry Poster: Rotation Crops and Cotton Poster produced by Produced by the Cotton Research and Development Corporation and the Cotton Catchment Communities CRC

Cotton CRC Extension Team Cotton Pest Management Guide 2009-10 (2009) Key I&I NSW contributors: Graham Charles, Robert Mensah, David Larsen, Louise Rossiter, Andrew Storrie, Mark Scott and Barry Jensen.

Cotton CRC Development and Delivery Team Cotton Pest Management Guide 2010-11 (2010) Key I & I contributors : Graham Charles, Janine Powell, David Larsen, Louise Rossiter, CMT Anderson, P.A Lonergan, and Mark Scott

(NB: Where possible, please provide a copy of any publication/s)

C. Have you developed any online resources and what is the website address?

Cotton CRC website: In association with Yvette Cunningham, Cotton Catchment Communities CRC

[Http://www.cottoncrc.org.au](http://www.cottoncrc.org.au)

Sustaining Rural communities Website:

<http://sustainingruralcommunities.org.au>

Pest and Beneficial Guide Web

http://www.cottoncrc.org.au/industry/Publications/Pests_and_Beneficials/Cotton_Insect_Pest_and_Beneficial_Guide

Cotton Symptoms Id tool

http://www.cottoncrc.org.au/industry/Tools/Symptoms_Identification_Tool

Weed Id Tool

http://www.cottoncrc.org.au/industry/Tools/Weed_Identification_Tool

Herbicide Damage tool – symptoms and links to damage research. Researcher Graham Charles, NSW DPI

http://www.cottoncrc.org.au/industry/Tools/Herbicide_Damage_Identification

Cotton Rotation Finder : Web tool adapted from the cotton paper based cotton rotation poster.

http://www.cottoncrc.org.au/industry/Tools/Agronomy_Tools/Cotton_Rotation_Finder

Cotton Seasonal Prompter: Researcher assistance Sandra Williams, CSIRO

Part 4 – Final Report Executive Summary

Provide a one page Summary of your research that is not commercial in confidence, and that can be published on the World Wide Web. Explain the main outcomes of the research and provide contact details for more information. It is important that the Executive Summary highlights concisely the key outputs from the project and, when they are adopted, what this will mean to the cotton industry.

The Technology Transfer Project has had the responsibility of providing a public face for the Cotton Catchment Communities CRC. It promoted the cotton, NRM and community research industry and the wider public. This was successfully achieved mainly through the development and maintenance of the Cotton Catchment Communities web site.

The project also assisted with the production of materials for hardcopy and distribution of same using contact lists maintained by this project.

The site is the main repository of research and extension material produced by Cotton CRC and CRDC projects. The project aimed to keep the web site up to date and available to industry (via various means such as what's new pages , RSS feeds, up to date site mapping and promotion via electronic newsletters and paper publications and recently Twitter feeds). This was in order to promote visitation and consequent exposure to the latest research and extension material.

Where possible the opportunity was made to enhance paper base publications or present them in a web friendly fashion with enhanced utility over paper based documentation. The Weed ID guide (on the web the Weed ID tool) from WEEDpak Section A3 Charles. G et al) is a good example.

The project coordinated with the national cotton extension team and Cotton Development and Delivery teams to assist industry wide extension campaigns to assist local extension officers.

The project also provided web services to researchers for conducting surveys and also provided services to the Cotton CRC for the running of conference – registration, web sites contacts, resource creation (booklets and MP3 CD's).

Appendix 1:

Google Analytics Summaries

Cotton CRC web site July 2008 – May 2012

Fig 1: Location of Website users – new and returning

Over 60 % of new visitors were from Australian and 92 % of returning visitors segment was form Australia.

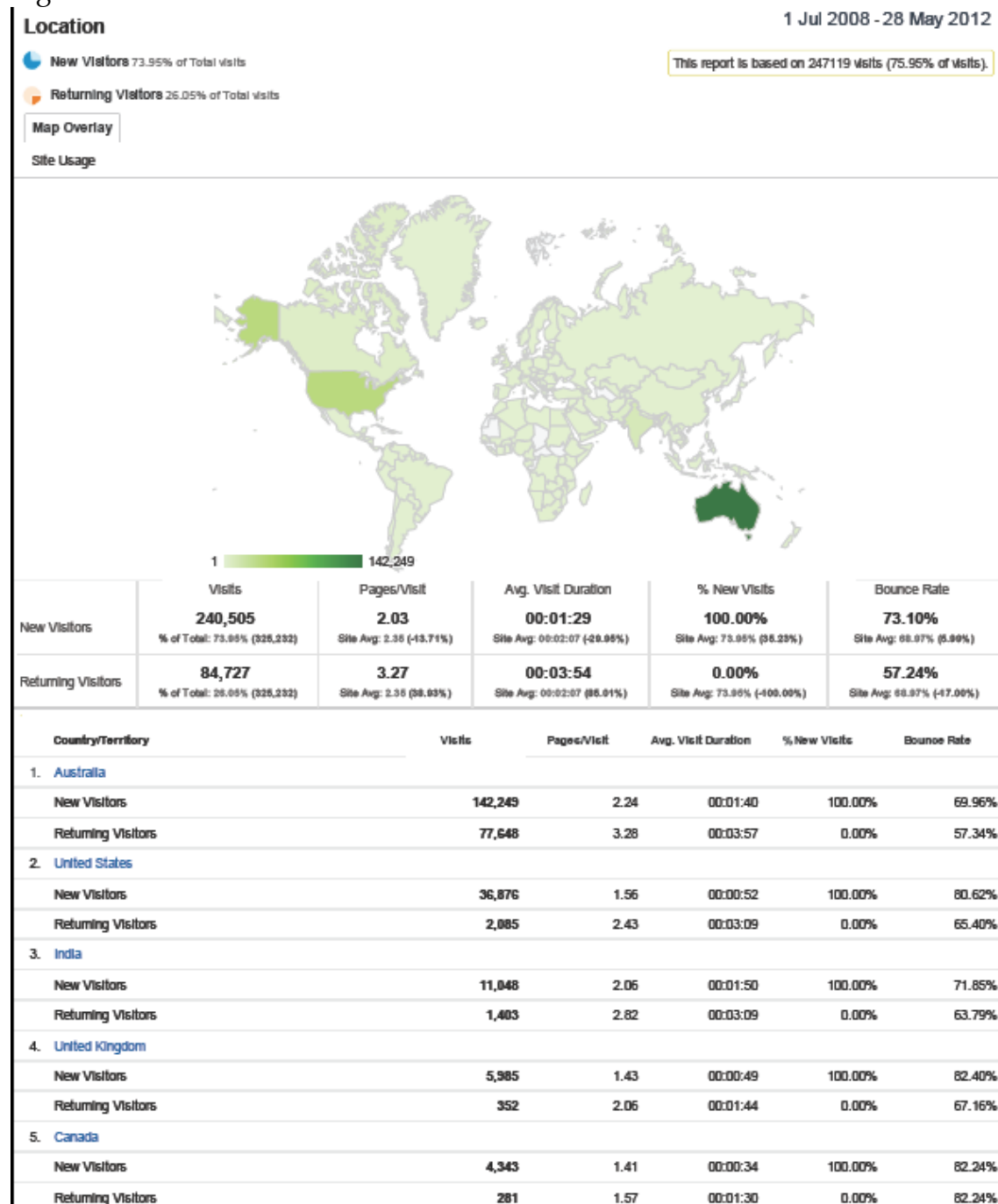


Figure 2. The Weed ID tool has been a popular destination during the life of this project. The popularity of this graphical interface led to redevelopment of the pest and beneficial ID tool.

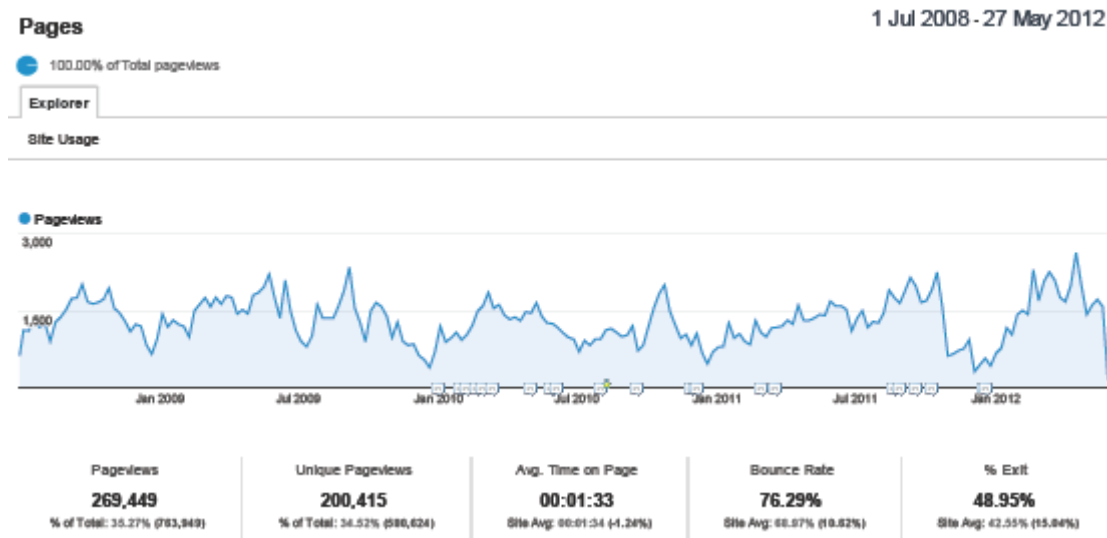


Figure 3 . The pest and beneficial ID tool has had on going updates through the life of this project – the graph shows improvement in hit rate following update to and image based key in 2009 driven by metadata and the CMS. In August 2011 the content pages were completely revised on line to complement the hardcopy booklet Pest and Beneficials in Australian Cotton Landscapes.. This on line version used text created for the booklet of the same name and also available as a PDF for use in hand held devices. The on line version is enhanced with more images ,extensive linking to management of pests, host plant identification, look alikes. and some enhanced text. An ordering system was also been put in place for the hardcopy version. http://www.cottoncrc.org.au/content/Industry/Publications/Pests_and_Beneficials/Cotton_Insect_Pest_and_Beneficial_Guide.aspx

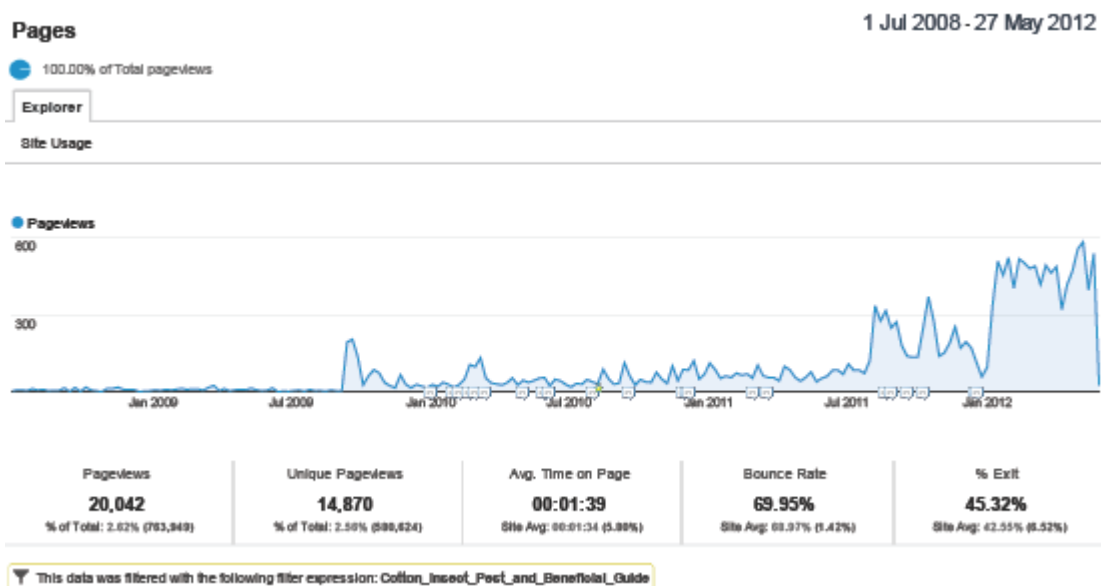


Figure 4 : Visits by mobile devices –

This expanding segment has been catered for in the web site with a set of pages adapted for viewing on small device format .

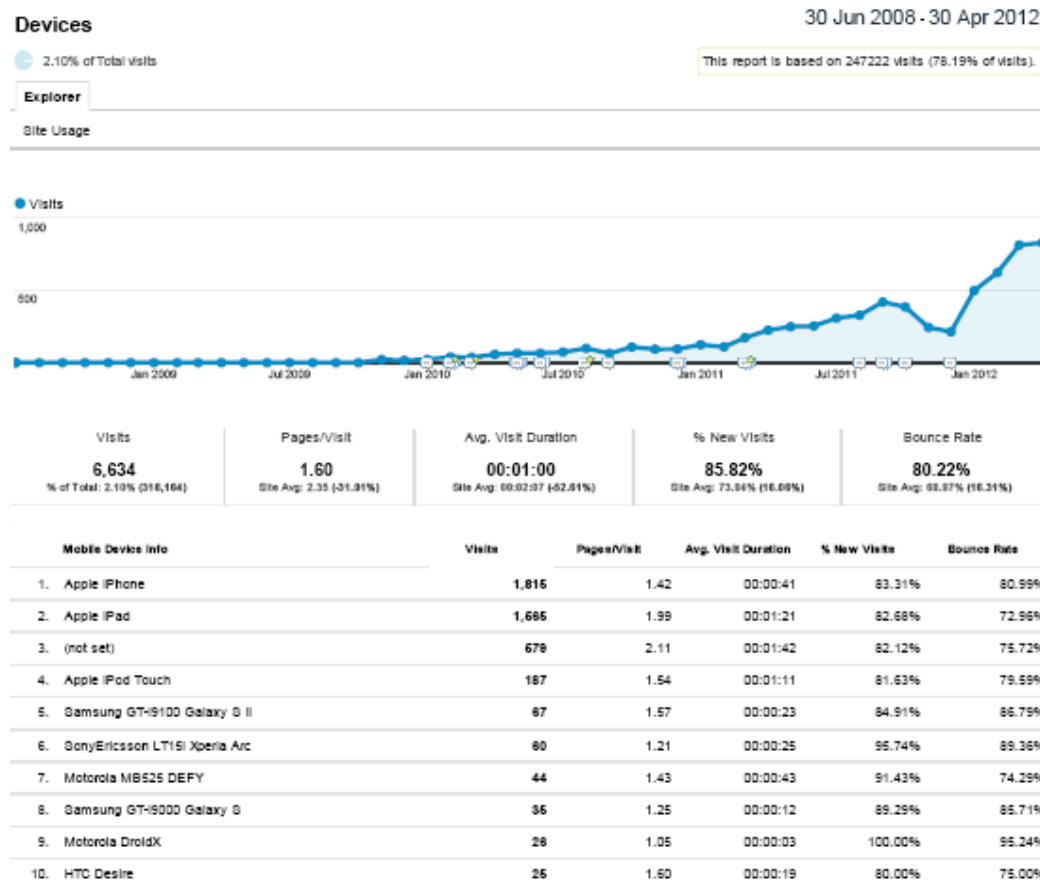
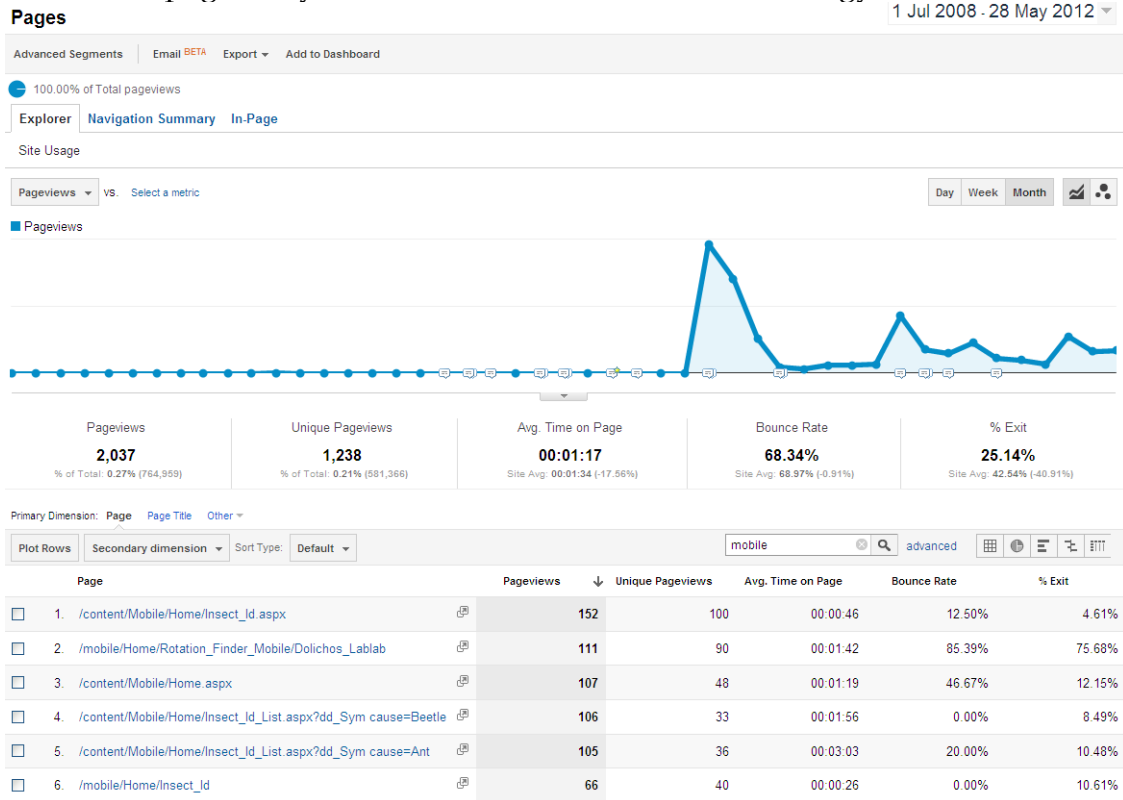


Figure 5: In response to this traffic demonstration pages have been developed to suit a smaller device with information included that would be of use in the field. The

layout of these pages may evolve in the future as new technology becomes available



for

Figure 6: increased hits on economics pages following notification via Cotton CRC news 7th January

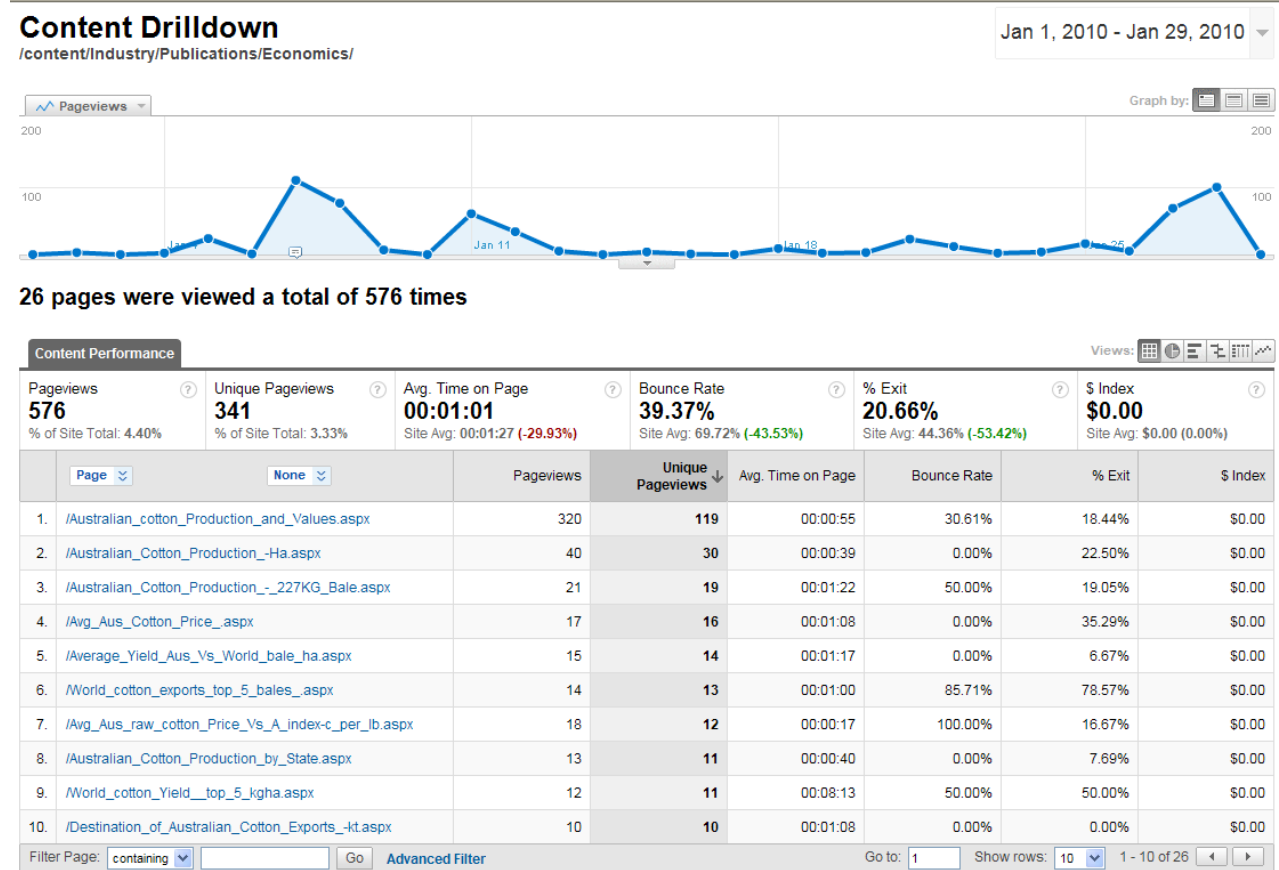


Figure 7: Visitors overview – new vs returning
 The visitation rates have increased over the life of this project

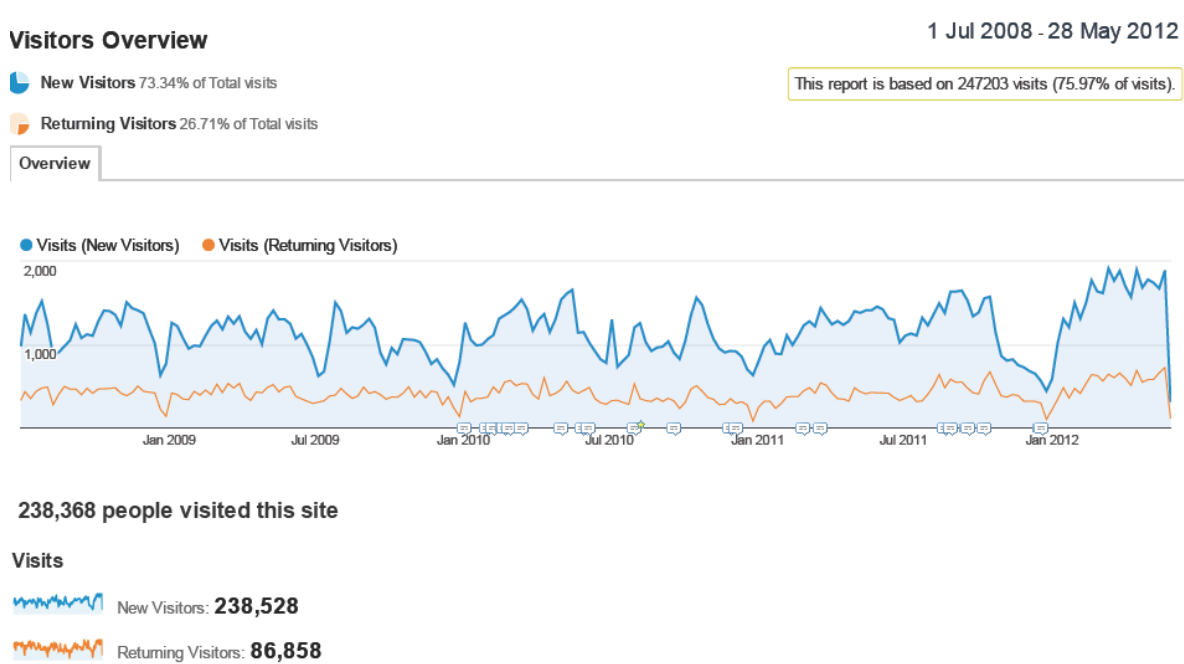


Figure 8: Access to staff lounge, staff secure login pages

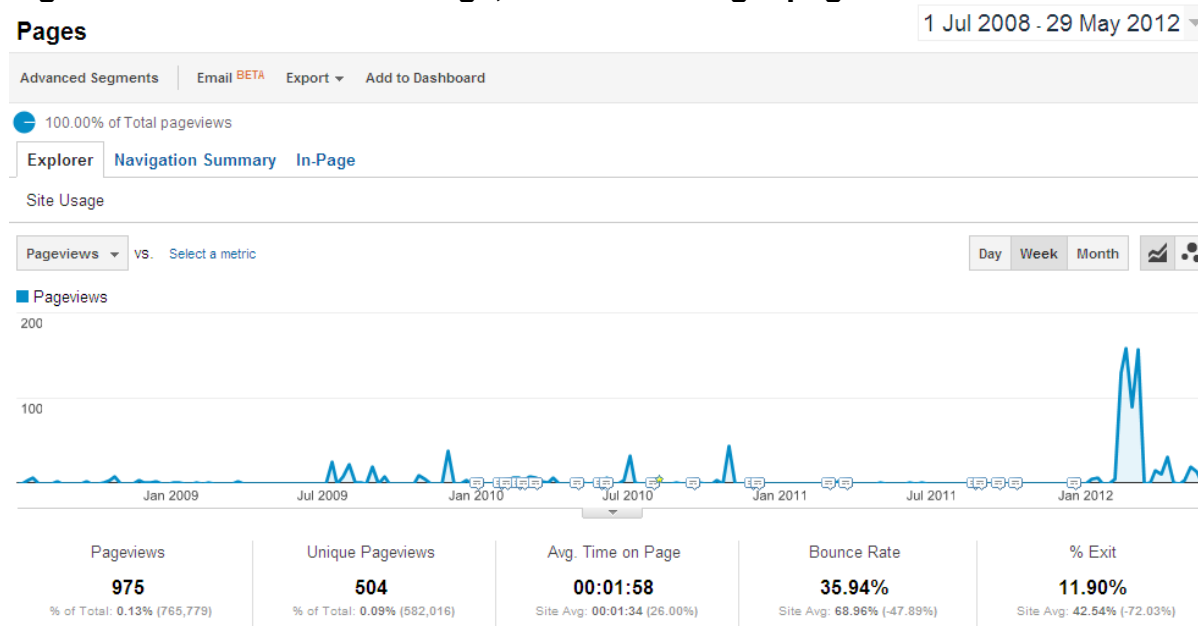


Figure 9: Mealy bug pages response to development and promotion existing pages enhanced and linked in response to mealybug issues in 2010

Pages

1 Jul 2008 - 29 May 2012

Advanced Segments | Email **BETA** | Export | Add to Dashboard

100.00% of Total pageviews

Explorer | **Navigation Summary** | In-Page

Site Usage

Pageviews vs. Select a metric

Day | Week | Month

Pageviews

300



| Pageviews | Unique Pageviews | Avg. Time on Page | Bounce Rate | % Exit |
|-----------------------------|-----------------------------|-----------------------------|--------------------------|--------------------------|
| 3,983 | 3,017 | 00:01:54 | 70.58% | 43.81% |
| % of Total: 0.52% (765,779) | % of Total: 0.52% (582,016) | Site Avg: 00:01:34 (21.06%) | Site Avg: 68.96% (2.35%) | Site Avg: 42.54% (2.98%) |

Figure 10: Calendar pages the calendar pages – repurposed from a hardcopy set have been popular. The 2008 calendar received a high google ranking early for pages including the word Calendar 2008 – leading to a lot of traffic to the site. The 2009 communities calendar was not as well received as the Birds and fish calendars in 2010 and 2011 respectively.

Pages

1 Jul 2008 - 30 May 2012

Advanced Segments | Email **BETA** | Export | Add to Dashboard

% of pageviews : 100.00%

Explorer | **Navigation Summary** | In-Page

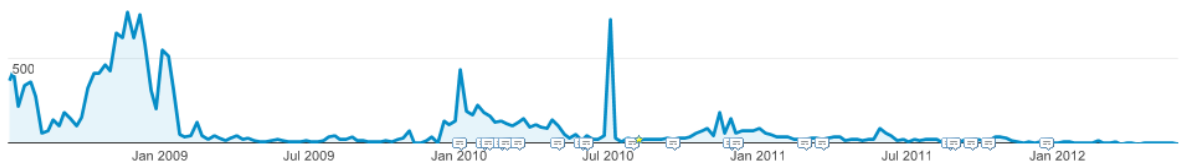
Site Usage

Pageviews vs. Select a metric

Day | Week | Month

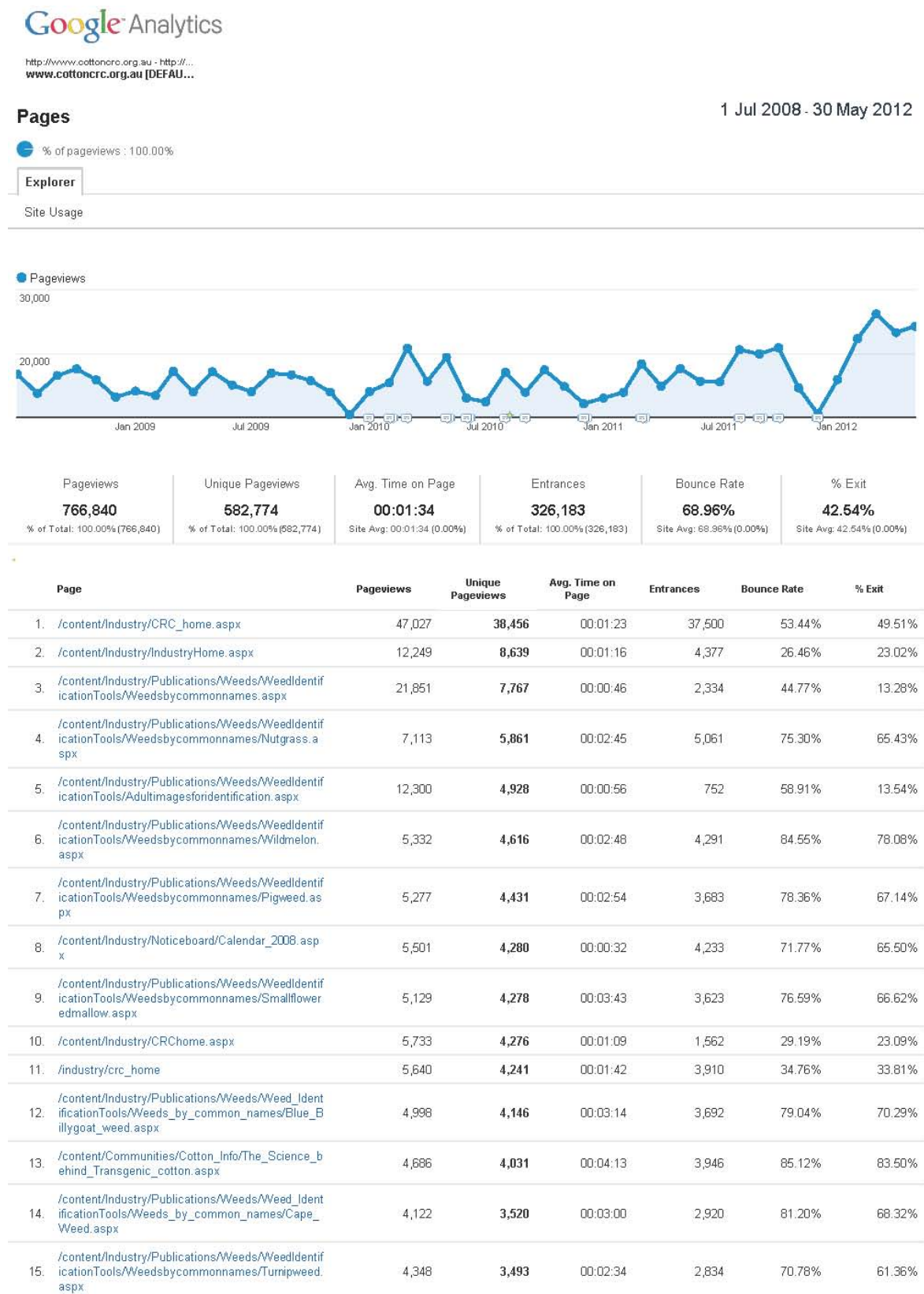
Pageviews

1,000



| Pageviews | Unique Pageviews | Avg. Time on Page | Entrances | Bounce Rate | % Exit |
|-----------------------------|-----------------------------|------------------------------|-----------------------------|---------------------------|---------------------------|
| 19,162 | 16,255 | 00:01:11 | 11,939 | 80.97% | 63.42% |
| % of Total: 2.50% (766,840) | % of Total: 2.79% (582,774) | Site Avg: 00:01:34 (-24.23%) | % of Total: 3.66% (326,183) | Site Avg: 68.96% (17.42%) | Site Avg: 42.54% (49.09%) |

Figure 10: 25 most popular web pages The Weeds ID tool has been very popular please see Figure 10 for results excluding weeds



| | | | | | | | |
|-----|---|-------|-------|----------|-------|--------|--------|
| 16. | /content/Industry/Publications/Weeds/Weed_IdentifierTools/Weeds_by_common_names/Sunflower.aspx | 4,009 | 3,491 | 00:02:49 | 3,294 | 84.94% | 79.62% |
| 17. | /content/Industry/Publications/Weeds/WeedIdentifierTools/Weedsbybotanicalnames.aspx | 6,003 | 3,292 | 00:01:04 | 1,741 | 51.46% | 26.74% |
| 18. | /content/Industry/Publications/Weeds/WeedIdentifierTools/Weedsbycommonnames/Commonmorningglory.aspx | 3,494 | 3,002 | 00:01:51 | 2,630 | 83.31% | 72.61% |
| 19. | /content/Industry/Publications/Weeds/WeedIdentifierTools/Weedsbycommonnames/Burmedic.aspx | 3,571 | 2,993 | 00:02:57 | 2,492 | 78.25% | 67.26% |
| 20. | /content/General/Sorry_We_Cannot_Find_That_Page.aspx | 3,996 | 2,971 | 00:01:41 | 2,159 | 71.38% | 48.37% |
| 21. | /content/Industry/Publications/Weeds/WeedIdentifierTools/Weedsbycommonnames/Cathead.aspx | 3,617 | 2,915 | 00:02:02 | 2,298 | 76.63% | 61.27% |
| 22. | /content/Industry/Publications/Weeds/WeedIdentifierTools/Weedsbycommonnames/Wireweed.aspx | 3,243 | 2,748 | 00:03:35 | 2,140 | 78.18% | 64.05% |
| 23. | /Industry/CRC_home | 3,675 | 2,718 | 00:02:56 | 2,236 | 51.48% | 44.68% |
| 24. | /content/Communities/Home.aspx | 3,773 | 2,649 | 00:00:51 | 430 | 26.28% | 13.57% |
| 25. | /content/Industry/Publications/Weeds/WeedIdentifierTools/Weedsbycommonnames/Causticweed.aspx | 3,212 | 2,615 | 00:03:18 | 2,131 | 74.14% | 62.76% |

Row s 1 - 25 of 37035

© 2012 Google

Figure 11: 25 Popular Pages Sans Weed id pages 2008 -2012

The very high ranking for the 2008 calendar pages can be attributed to the pages attaining a high ranking in Google search engine for a common search (2008 Calendar) . the science behind transgenic cotton in a page that has been available for the length of this project however has only become very popular in the last 12 months of the CRC.



http://www.cottoncra.org.au - http://...
www.cottoncra.org.au [DEFAU...

Pages

1 Jul 2008 - 30 May 2012

% of pageviews : 100.00%

Explorer

Site Usage

Pageviews

20,000

13,000

Jan 2009 Jul 2009 Jan 2010 Jul 2010 Jan 2011 Jul 2011 Jan 2012

Pageviews

473,932

% of Total: 61.80% (766,840)

Unique Pageviews

364,114

% of Total: 62.48% (582,774)

Avg. Time on Page

00:01:36

Site Avg: 00:01:34 (1.83%)

Entrances

186,651

% of Total: 57.22% (326,183)

Bounce Rate

64.16%

Site Avg: 69.96% (-6.96%)

% Exit

39.44%

Site Avg: 42.54% (-7.29%)

This data was filtered using an advanced filter.

| Page | Pageviews | Unique Pageviews | Avg. Time on Page | Entrances | Bounce Rate | % Exit |
|---|-----------|------------------|-------------------|-----------|-------------|--------|
| 1. /content/Industry/CRC_home.aspx | 47,027 | 38,456 | 00:01:23 | 37,500 | 53.44% | 49.51% |
| 2. /content/Industry/IndustryHome.aspx | 12,249 | 8,639 | 00:01:16 | 4,377 | 26.46% | 23.02% |
| 3. /content/Industry/Noticeboard/Calendar_2008.aspx | 5,501 | 4,280 | 00:00:32 | 4,233 | 71.77% | 65.50% |
| 4. /content/Industry/CRCHome.aspx | 5,733 | 4,276 | 00:01:09 | 1,562 | 29.19% | 23.09% |
| 5. /industry/crc_home | 5,640 | 4,241 | 00:01:42 | 3,910 | 34.76% | 33.81% |
| 6. /content/Communities/Cotton_Info/The_Science_behind_Transgenic_cotton.aspx | 4,686 | 4,031 | 00:04:13 | 3,946 | 85.12% | 83.50% |
| 7. /content/General/Sorry_We_Cannot_Find_That_Page.aspx | 3,996 | 2,971 | 00:01:41 | 2,159 | 71.38% | 48.37% |
| 8. /industry/CRC_home | 3,675 | 2,718 | 00:02:56 | 2,236 | 51.48% | 44.68% |
| 9. /content/Communities/Home.aspx | 3,773 | 2,649 | 00:00:51 | 430 | 26.28% | 13.57% |
| 10. /communities/Cotton_Info/The_Science_behind_Transgenic_cotton | 3,020 | 2,537 | 00:03:03 | 2,509 | 83.18% | 82.68% |
| 11. /content/Industry/AboutUs/Contacts.aspx | 2,835 | 2,326 | 00:02:00 | 176 | 52.84% | 48.68% |
| 12. /content/Industry/Publications.aspx | 3,312 | 2,207 | 00:00:36 | 197 | 20.81% | 7.94% |
| 13. /content/Catchments/Home.aspx | 3,058 | 2,027 | 00:00:52 | 238 | 27.73% | 12.82% |
| 14. /content/Communities/Cotton_Info/Fun_facts.aspx | 2,149 | 1,886 | 00:03:47 | 1,640 | 85.30% | 76.97% |
| 15. /content/Communities/CottonInformation/Cottoninanutshell.aspx | 2,131 | 1,847 | 00:03:49 | 1,586 | 79.00% | 73.53% |
| 16. /communities/Cotton_Info/Fun_facts | 2,050 | 1,813 | 00:04:04 | 1,707 | 86.88% | 81.17% |
| 17. /content/Industry/Publications/Pests_and_Beneficials/Cotton_Insect_Pest_and_Beneficial_Guide.aspx | 2,469 | 1,692 | 00:01:41 | 975 | 47.28% | 31.71% |
| 18. /content/Industry/About_Us.aspx | 2,339 | 1,653 | 00:00:31 | 197 | 19.80% | 10.30% |
| 19. /content/General/Research/Projects/3_03_05.aspx | 2,181 | 1,621 | 00:01:27 | 658 | 44.68% | 29.48% |
| 20. /content/Industry/Publications/Water/WATERnaak | --- | --- | --- | --- | --- | --- |

| | | | | | | | |
|-----|---|-------|--------------|----------|-------|--------|--------|
| 20. | /content/Industry/Tools.aspx | 2,064 | 1,583 | 00:01:16 | 1,168 | 40.75% | 33.77% |
| 21. | /content/Communities/Cotton_Info.aspx | 2,082 | 1,581 | 00:02:34 | 1,192 | 64.26% | 52.45% |
| 22. | /content/Industry/Noticeboard/Calendar2008/December_2008.aspx | 1,677 | 1,546 | 00:01:48 | 1,038 | 91.91% | 78.47% |
| 23. | /Industry/Publications | 2,953 | 1,463 | 00:00:32 | 126 | 15.08% | 6.23% |
| 24. | /content/Communities/CottonInformation/HistoryofAustralianCotton.aspx | 1,687 | 1,378 | 00:03:58 | 1,294 | 74.73% | 70.95% |
| 25. | /content/Industry/Tools.aspx | 1,787 | 1,262 | 00:00:40 | 152 | 22.37% | 13.77% |

Rows 1 - 25 of 33642

© 2012 Google

Figure 12: Most popular PDF documents 2008 -2012 (Nb. PDF reporting not available prior to April 2009. Features a steady increase of files accessed form a wide range of disciplines. The Stubbs report has been extremely popular.



http://www.cottoncra.org.au - http://...
www.cottoncra.org.au [DEFAULT]

Pages

1 Jul 2008 - 30 May 2012

% of pageviews : 100.00%

Explorer

Site Usage

Pageviews



| | | | | | |
|---|--|---|--|--|---|
| Pageviews 30,350 % of Total: 3.96% (766,840) | Unique Pageviews 26,285 % of Total: 4.51% (982,774) | Avg. Time on Page 00:02:42 Site Avg: 00:01:34 (72.98%) | Entrances 302 % of Total: 0.09% (326,183) | Bounce Rate 40.07% Site Avg: 68.96% (-41.90%) | % Exit 30.92% Site Avg: 42.54% (-27.30%) |
|---|--|---|--|--|---|

This data was filtered with the following filter expression: pdf

| Page | Pageviews | Unique Pageviews | Avg. Time on Page | Entrances | Bounce Rate | % Exit |
|---|-----------|------------------|-------------------|-----------|-------------|--------|
| 1. /virtual/download/http://www.cottoncra.org.au/content/General/Research/Projects/3_03_05.aspx/Rpt_4_Social_&_Economic_Impacts_100804.pdf | 538 | 476 | 00:04:09 | 10 | 60.00% | 60.04% |
| 2. /virtual/download/http://www.cottoncra.org.au/content/Industry/Publications/Weeds/HerbicideDamageInformation/24-D_Herbicide_Damage_Information_.aspx/24D0806.pdf | 174 | 147 | 00:01:53 | 1 | 100.00% | 31.61% |
| 3. /virtual/download/http://www.cottoncra.org.au/content/Industry/Publications/AgronomyNutrition/NutriPAK.aspx/02BasNut.pdf | 145 | 129 | 00:02:40 | 1 | 0.00% | 18.62% |
| 4. /virtual/download/http://www.cottoncra.org.au/content/Industry/Publications/AgronomyNutrition/NutriPAK.aspx/03N.pdf | 138 | 125 | 00:03:42 | 3 | 0.00% | 30.43% |
| 5. /virtual/download/http://www.cottoncra.org.au/content/Industry/Publications/Pests_and_Beneficials/Integrated_Pest_Management_Guidelines.aspx/file.pdf | 385 | 119 | 00:05:53 | 6 | 33.33% | 20.52% |
| 6. /virtual/download/http://www.cottoncra.org.au/industry/Publications/Australian_Cotton_Production_Manual/ACPM_2011.pdf | 116 | 105 | 00:05:29 | 2 | 100.00% | 46.55% |
| 7. /virtual/download/http://www.cottoncra.org.au/content/Industry/Publications/Fibre_Quality/FIBREpak.aspx/FibrePakweb.pdf | 119 | 104 | 00:04:34 | 0 | 0.00% | 57.14% |
| 8. /virtual/download/http://www.cottoncra.org.au/content/General/Research/Projects/3_03_05.aspx/3_3_05_SCOPING_REPORT_100308.pdf | 122 | 103 | 00:03:05 | 2 | 50.00% | 29.51% |
| 9. /virtual/download/http://www.cottoncra.org.au/content/Communities/Noticeboard/Sustaining_Rural_Communities_Conference.aspx/Sustaining_Rural_Communities_info_flyer.pdf | 105 | 99 | 00:01:19 | 1 | 100.00% | 40.95% |
| 10. /virtual/download/http://www.cottoncra.org.au/content/Industry/Publications/Cotton_Pest_Management_Guide_2010__11.aspx/CPM_Guide_2010_LR.pdf | 112 | 98 | 00:04:52 | 0 | 0.00% | 50.00% |
| 11. /virtual/download/http://www.cottoncra.org.au/content/Industry/Publications/AgronomyNutrition/Nutri | 116 | 96 | 00:01:56 | 1 | 100.00% | 16.38% |

| PAK.aspx/01Int.pdf | | | | | | | |
|--------------------|--|-----|----|----------|---|---------|--------|
| 12. | /virtual/download/http://www.cottoncra.org.au/content/Communities/Noticeboard/Community_Conversations_Newsletter.aspx/Community_Conversations_Edition_1_.pdf | 100 | 93 | 00:02:26 | 0 | 0.00% | 38.00% |
| 13. | /virtual/download/http://www.cottoncra.org.au/content/General/Research/Projects/3_03_05.aspx/Rpt_4_Apx_6_Mildura_Case_Study_100804.pdf | 107 | 92 | 00:06:26 | 3 | 66.67% | 48.60% |
| 14. | /virtual/download/http://www.cottoncra.org.au/content/Industry/Publications/Australian_Cotton_Production_Manual.aspx/ACPM_2011.pdf | 103 | 92 | 00:20:00 | 3 | 33.33% | 50.49% |
| 15. | /virtual/download/http://www.cottoncra.org.au/content/General/Research/Projects/3_03_05.aspx/Rpt_4_Apx_5_Griffith_Case_Study_100804.pdf | 100 | 88 | 00:02:13 | 6 | 66.67% | 47.00% |
| 16. | /virtual/download/http://www.cottoncra.org.au/content/Industry/Publications/Pests_and_Beneficials/Cotton_Pest_Management_Guide_2010_11.aspx/CPM_Guide_2010_LR.pdf | 96 | 88 | 00:04:36 | 0 | 0.00% | 47.92% |
| 17. | /virtual/download/http://www.cottoncra.org.au/content/General/Research/Projects/3_03_05.aspx/Rpt_4_Apx_1_Balonne_Shire_Case_Study_100804.pdf | 101 | 86 | 00:05:08 | 0 | 0.00% | 49.50% |
| 18. | /virtual/download/http://www.cottoncra.org.au/content/Industry/Publications/Weeds/WeedIdentificationTools/Weedsbycommonnames/Nutgrass.aspx/WPh3.pdf | 91 | 86 | 00:04:10 | 0 | 0.00% | 63.74% |
| 19. | /virtual/download/http://www.cottoncra.org.au/content/Communities/Cotton_Info/Sustaining_Rural_Communities_Conference.aspx/Sustaining_Rural_Communities_info_flyer.pdf | 96 | 85 | 00:01:36 | 1 | 100.00% | 33.33% |
| 20. | /virtual/download/http://www.cottoncra.org.au/content/Industry/Publications/Weeds/HerbicideDamageInformation/Glyphosate_Herbicide_Damage_Information_.aspx/RR3506.pdf | 92 | 85 | 00:02:03 | 0 | 0.00% | 25.00% |
| 21. | /virtual/download/http://www.sustainingruralcommunities.org.au/2012_Conference/Speakers/SRC_Conference_Program_2012.pdf | 95 | 83 | 00:02:45 | 1 | 100.00% | 60.00% |
| 22. | /virtual/download/http://www.cottoncra.org.au/content/Industry/Publications/AgronomyNutrition/Nutrition_PAK.aspx/04P.pdf | 91 | 81 | 00:02:43 | 3 | 33.33% | 25.27% |
| 23. | /virtual/download/http://www.cottoncra.org.au/content/Communities/Noticeboard/Community_Conversations_Newsletter.aspx/Community_Conversations_Edition_3a.pdf | 84 | 80 | 00:03:01 | 0 | 0.00% | 72.62% |
| 24. | /virtual/download/http://www.cottoncra.org.au/content/Industry/Publications/WaterandIrrigation/WATERpakS1assessingresources.aspx/WP1_1.pdf | 85 | 77 | 00:01:33 | 0 | 0.00% | 17.65% |
| 25. | /virtual/download/http://www.cottoncra.org.au/content/Industry/Publications/AgronomyNutrition/Nutrition_PAK.aspx/05K.pdf | 87 | 76 | 00:02:16 | 0 | 0.00% | 22.99% |

Row s 1 - 25 of 5068

Appendix 2: Page Ranking

Page Rank checker is a free service to check Google™ page rank instantly via online PR checker or by adding a PageRank checking button to your web pages

» CHECK PAGE RANK » NEWS & UPDATES » LINK TO US » CONTACT US » ADD TO FAVORITES

Check PAGE RANK of Web site pages Instantly

In order to check pagerank of a single web site, web page or domain name, please submit the URL of that web site, web page or domain name to the form below and click "Check PR" button.

Web Page URL: <http://www.cottoncrc.org.au>

The Page Rank:  7/10

(the page rank value is 7 from 10 possible points)

Cotton sites at 29th May 2012: using Google pagerank

cottonaustralia.com.au 5/10

cottoncrc.org.au 7/10

crdc.com.au 6/10

csd.net.au 4/10

Nb. the ranking above should not diminish the value of the other cotton sites their ranking is partially brought about by the respective sites audience focus compared to the wider scope of the Cotton CRC.

The following notes on ranking from Google Facts about Google and Competition

<http://www.google.com/competition/howgooglesearchworks.html>

Google ranking

Sites' positions in our search results are determined based on a number of factors designed to provide end-users with helpful, accurate search results.

Algorithms Rank Relevant Results Higher

For every search query performed on Google, whether it's [hotels in Tulsa](#) or [New York Yankees scores](#), there are thousands, if not millions of web pages with helpful information. Our challenge in search is to return only the most relevant results at the top of the page, sparing people from combing through the less relevant results below. Not every website can come out at the top of the page, or even appear on the first page of our search results.

Today our algorithms rely on more than 200 unique signals, some of which you'd expect, like how often the search terms occur on the webpage, if they appear in the title or whether synonyms of the search terms occur on the page. Google has invented many innovations in search to improve the answers you find. The first and most well known is PageRank, named for Larry Page (Google's co-founder and CEO). [PageRank](#) works by counting the number and quality of links to a page to determine a rough estimate of how important the website is. The underlying assumption is that more important websites are likely to receive more links from other websites.

More on page ranking can be found at this link :

Google's PageRank Explained

<http://www.webworkshop.net/pagerank.html>

Appendix 3:

Questions from Industry surveys reporting on the cotton CRC web site and other resources

Farm survey results 2009

2009 Cotton Consultants Australia Report, Qualitative Consultant Feedback Analysis of the 2008–09 cotton season Compiled by Helen Dugdale

The use of cotton R&D websites

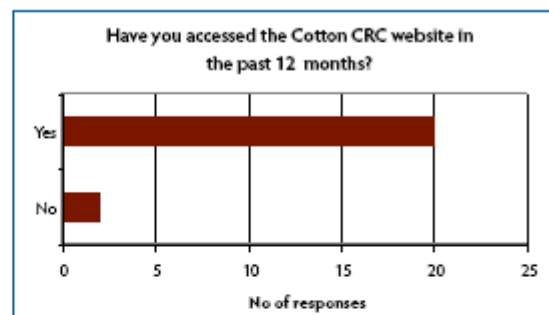
20 of 22 respondents indicated that they had used the Cotton Catchment Communities CRC website in the past 12 months, citing NutriLOGIC, agronomic information and the Day Degree Temperature Calculator as the most useful elements, followed by information on pests, diseases and water.

INTERNET & WEBSITES

QUESTION 43A

Have you accessed the Cotton CRC website in the past 12 months?

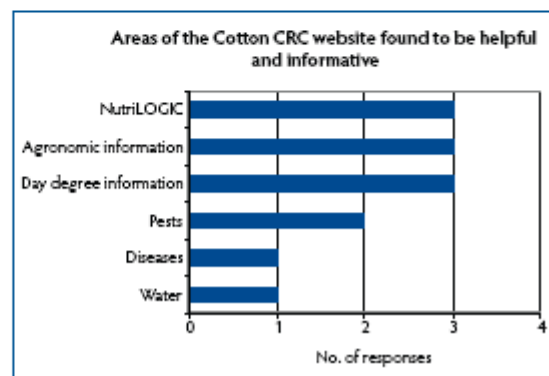
(22 respondents)



QUESTION 43B

Please comment on the areas of the Cotton CRC website you found helpful and informative.

(11 respondents)



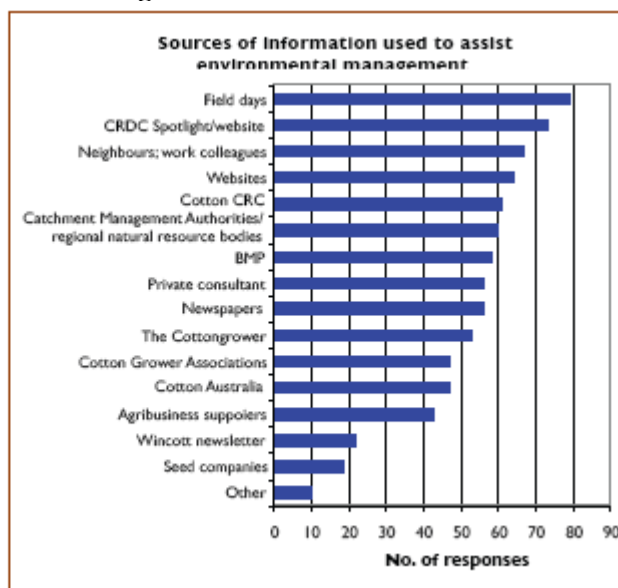
WincottNRM Survey of the Australian cotton industry 2010–2011

Feedback Report Compiled by Helen Dugdale Helen Wheels

Question 10.

Where do you seek information to help you manage environmental issues?

(141 respondents)



Consultancy

Focus group report group 1 Gunnedah Where do you get environmental information? And where would you prefer to get your information?

Principal information sources cited were:

Radio (especially the ABC's Rural Report and Country Hour)

Emails from reputable sources such as CRDC, Cotton Seed Distributors and the Cotton CRC ('but they need to be concise'.)

Face-to-face with neighbours

Cotton consultants

Field days

CRDC's *Spotlight* magazine

Direct contact with researchers.

The first two sources were the most popular. Some participants also mentioned that they are not getting the Cotton Australia newsletter

Cotton Grower Practices 2011 Survey

A survey of selected cotton farming practices and grower views across the industry 2010-11 season

GHD Hassall with the Cotton CRC Development and Delivery team

Table 9 Most important information sources for respondents

| Information Source identified as being one of the 2 most important | Number responses |
|--|------------------|
| Agronomist / consultant | 132 |
| Online tools | 25 |
| Other growers | 25 |
| CSD | 21 |
| Pest Management Guide | 18 |
| Own experience/family | 10 |
| CRC | 10 |
| Production Manual | 8 |
| Publications/other bodies | 8 |
| Field days | 8 |
| Internet | 5 |
| Weather/news | 5 |
| Education/courses | 4 |
| Research/DEEDI | 4 |
| Resellers/suppliers | 3 |
| James Hill | 2 |

Websites

Many respondents did not identify any websites that they particularly used. Cotton Seed Distributors' (CSD) website was the most commonly mentioned followed by that of the Cottor CRC.

Table 11 Websites used by growers

| Website | Response Total |
|---------------------------|----------------|
| CSD Website | 55 |
| Cotton CRC website | 37 |
| Cotton Australia website | 21 |
| Weather sites | 14 |
| Google | 10 |
| CRDC | 5 |
| myBMP | 5 |
| Suppliers | 4 |
| Financial/market websites | 4 |
| CSIRO | 2 |
| Not specified | 8 |
| Other* | 10 |

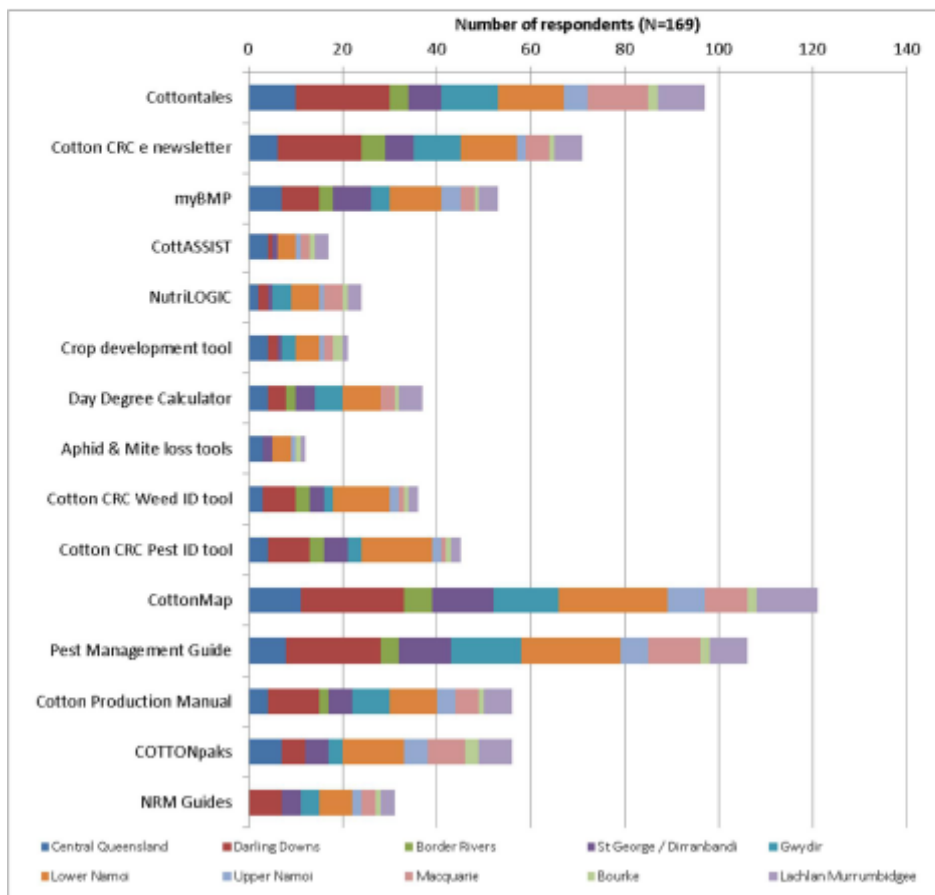
* Other websites mentioned include: Ag Facts; AGGRO; Namoi Cotton; Pestgenie; QLD DPI website; Cotton International; Cottassist; Spraywise; Australian Crop Consultant Association.

Cotton CRC tools and resources

CottonMap and the Cotton Pest Management Guide were the most widely used of the Cotton CRC tools, followed by CottonTales. The lowest usage was of the CottASSIST suite of tools followed by myBMP. However, there is comment from a grower that whilst he does not use CottASSIST himself, these tools are valuable and help to inform the advice from his consultant.

More growers were somewhat hesitant in their indications of using the COTTONpaks, NRM guides and myBMP than for the other tools. Conversely, the positive responses were more definite in relation to use of CottASSIST, the Aphid and Mite loss tools and CottonMap.

Figure 8 Usage of CRC tools and other information resources used



Perceptions of information availability

75% of respondents thought that it was easy or very easy to find information that they were looking for. A few (marked N/A) said that they either didn't go looking for information or relied on their agronomist to source it.

Figure 9 Ease of finding information about cotton growing

