



Australian Government
Cotton Research and Development Corporation



Cotton Catchment Communities CRC

FINAL REPORT 2006

If you are participating in the presentations this year, please provide a written report and a copy of your final report presentation by 31 October.

If not, please provide a written report by 30 September.

Part 1 - Summary Details

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

CRDC Project Number: CRDC287

OR Cotton CRC Project Number:

Project Title: ACGRA 13th Australian Cotton Conference, August 2006

Project Commencement Date: 1/06/2006 Project Completion Date: 31/08/2006

CRDC Program: 1 People and Knowledge

OR CRC Program: - Please Select One -

Part 2 - Contact Details

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Signature of Research Provider Representative:

Greg Kauter, ACGRA.

NB: A confidential copy of the Conference Delegate Evaluation is attached

Part 3 – Final Report Guide (due 31 October 2006)

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

Background

1. Outline the background to the project.

ACGRA is responsible for organising the biennial Australian Cotton Conference, which has evolved over time from a research conference to the premier industry conference with a strong focus on research and extension outcomes. The 13th Australian Cotton Conference was held on 8th – 10th August, 2006 at the Gold Coast Conference and Exhibition centre, Broadbeach Qld.

CRDC invests in excess of \$10M annually on research, development, education and extension to achieve increased economic, environmental and social outcomes for the cotton industry.

CRDC support was requested for key research and extension activities at the Australian Cotton Conference that promote awareness, knowledge and benefits of CRDC funded R&D and enhance adoption of these R&D outcomes in the cotton industry.

Objectives

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

Plenary session: Opportunities for Australian Cotton – The first day of the conference (Tuesday 8th Aug.) consisted of plenary sessions focused on key post-farm gate issues for the cotton industry. The program included a session addressing the ‘Opportunities for Australian Cotton’ which consisted of presentations on the progress of the Environmental Management Systems (EMS) Pathways project and associated objectives.

4.15pm – 6.00pm	<u>Session 3– Opportunities for Australian Cotton</u>
Sponsored by Cotton Research and Development Corporation and Natural Heritage Trust	
	David Conners Director, Cotton Research & Development Corporation, Narrabri, NSW
	Chairman
4.15pm – 4.45pm	Dr. Stuart Gordon CSIRO Textile and Fibre Technology, Cotton CRC Geelong Laboratory, Belmont, Vic. and Dr. Greg Constable Program Leader Cotton Management and Improvement, CSIRO Plant Industry, Cotton CRC ACRI, Narrabri, NSW
4.45pm – 5.00pm	Unveiling FIBREpak Allan Williams Project Officer for EMS Pathways Project, Australian Cotton Growers Research Association Inc. Narrabri, NSW
5.00pm – 5.15pm	Post Farm Gate BMP Peter Wilson General Manager, Cato Purnell Partners Pty. Ltd Sydney, NSW
5.15pm – 5.30pm	Branding Our Product Mr. Hidemitsu Kashihara and Mr. Kunihiko Wada Izumiya, Japan Mr. Kaz Kuroda, Austrade, Japan (interpreter) Why is IZUMIYA working with Australian cotton?

The session was highly successful in achieving the objective. The promotion of the CRC publication 'Launching FIBREpak' and the presentation from the IZUMIYA representatives were the highlights of the session, however, the overview of the development of post farm gate BMP by Allan Williams represented a detailed industry report on the progress of the EMS Pathways Project.

The session was a fitting conclusion to the opening day of the 2006 Australian Cotton Conference.

Selected comments from the 2006 Delegate Evaluation focusing on the value of the programme;

- *The concept of getting our end users to speak at the conference was brilliant, I got goose bumps listening to the Japanese blokes talking about what they are doing with our cotton. Having the Indonesian spinner tell us the good, bad and ugly of Aust. cotton was really useful and put meaning into what we do at the farm level. Overall the entire conference was brilliant and hard to top next time.*
- *Access to researchers such as Greg Constable, in addition to the Japanese visitors who gave a presentation.*
- *We will have a future if we host conferences like this. We must address in a rigorous way all the issues. It's the 21st Century now, we have challenges the old guard didn't have. I don't think we acknowledged the Japanese fellows well enough. They are having a go on our behalf. Well done guys!*

Profitability Forums – triple bottom line styled forums were conducted on Wednesday afternoon (9th Aug.) following a plenary session headlining the issues affecting the 'industry balance sheet'. The forums focused on current R&D activities and issues in natural resource management (Profitable Environment), cotton communities (Profitable Communities) and on-farm production (Profitable Farm). Panel sessions in each forum enabled speakers to interact with participants and each other to expand on areas of further interest. The panels were made up of forum presenters and recipients and finalists of various cotton industry awards categories.

The Profitability Forums were well attended and the panel discussions were all actively engaged by participants. The Panel sessions are included as video items on the conference proceedings CD so that delegates are able to access the discussions from the concurrent sessions they could not attend.

The 2006 delegate evaluation reflected a mixed response to the return of concurrent sessions to the conference programme from too much choice to a welcome expansion of topics.

Hands-on-Research – sub-discipline based sessions were held on Thursday afternoon (10th Aug.) providing interactive discussions and practical demonstrations in small groups addressing current cotton research projects. Seventeen topics were repeated in three sessions during the afternoon enabling participants an opportunity for one-on-one in-depth sessions with researchers on a specific issue. A final summary session, 'ASK ANYONE', enabled all participants to mix informally with researchers for an overview of each session and/or to clarify any outstanding questions from any session.

The Hands-on-Research session was especially well received by participants. After the conduct of this session in the last two conferences there is strong recognition of the 'Hands-on' and interactive aspects of the session. There was strong feedback on the value of the session again in the 2006 delegate evaluation.

Selected comments from the 2006 Delegate Evaluation focusing on the Hands-on-Research sessions;

- *Great chance to hear "one on one" from a researcher at the cutting edge. To feel the passion the researchers had about their topic made you feel confident R & D \$\$\$ are being spent well.*
- *The 'Hands-on' worked exceptionally well allowing more time for delegates to spend with those that they are particularly interested in. Also gives a lot more opportunity for many researchers to present their work and meet the end users of their work. I spoke to a couple of high profile consultants at the 'Hands-on' session who said that was the only session they went to.*
- *Hands-on-Research sessions. These sessions are great for allowing growers to ask questions of individual researchers. The feedback from attendees to these sessions was very positive with many saying that they got a lot out of them.*

They have also provided an opportunity for further interaction through identification of issues for on farm trials and potential trial cooperators. The plenary sessions don't allow for a lot of question time due to time constraints and size of the audience.

- *The Hands-on-Research forums were a great venue to hear from researchers and farmers what they were doing and what was working for them.*

There were many suggested changes as well, with some frustration evident in the concurrent nature of the session and particularly the limited number of topics able to be attended. There is clearly a challenge to overcome this issue in the 2008 conference programme and enhance the value of the session.

Video Production – The conference committee will plan for a least 2 (up to 3) video components for presentations on the plenary program. Presentations addressing CRDC funded research and/or extension could be identified for video components. CRDC would be acknowledged as funding these productions in the credits.

Unlike the 2000, 01 and 02 conferences there was a noticeable lack of video content in the presentations despite the offer and availability of resources to undertake multimedia presentation opportunities. As an observation many researchers replied that they simply did not have spare time to get involved with activities not directly associated with their research projects. In addition the number of members of the cotton CRC extension team is possibly at the lowest level in a number of years (during 2006) and this may account for the apparent lack of capacity.

The organisers decided the funds could be utilised for additional video and audio content from the conference on the Conference Proceedings CD. The CD was produced post-conference for the first time and included 21 video and/or audio items totalling 6 hours and 50 minutes.

Virtual Posters – individual research projects and extension team activities were presented by 'virtual' poster (PowerPoint presentation) at 3 Poster Stations throughout the conference exhibition area. The stations consisted of a computer and monitor and display a conference 'intranet' that contained a detailed conference program (including topic abstracts and speaker CV's) as well as 'virtual' poster presentations and the Cotton Industry Awards 'roll of honour'. The traditional 'poster board' display is logistically challenging and space 'limited'. The virtual poster display enabled an unlimited number of presentations by using electronic and IT systems to display additional research project findings.

The 2006 conference was the first attempt at a modified poster presentation from printed posters to an electronic display. There is value in this approach as Posters can be added to the conference proceedings for an enduring record.

There were a number of suggestions for the modification of the electronic poster displays that could be considered for the 2008 conference.

Conference proceedings – the conference proceedings attracts a large number of papers (and in recent years) have been provided at the conference via CD-rom. Requests for printed proceedings had continued to decline but there is still a level of demand. The conference proceedings will again be provided via a choice of electronic and published editions. The electronic version will be primarily CD-rom and a small 'trial' is proposed for a USB-drive format. It is proposed that the proceedings will be available on-line sometime after the conference as an on-going record.

Comprehensive cotton conference proceedings have been published on CD-rom for all conference delegates, numerous research institutions and libraries and for sale to individuals. The 2006 proceedings CD-rom included; speaker presentations (Powerpoints), 21 video/audio items (totalling 6hr.50min.), and the virtual poster presentations in addition to speaker and submitted papers totalling 620Mb of content.

Speaker and submitted papers have been published and distributed to individual subscribers and numerous research institutions and libraries. The 2006 Cotton Conference proceedings book contains 40 speaker papers and 44 submitted papers (668 pages).

Methods

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

The following components of the conference were identified as having strong links to CRDC research programs and could be supported by CRDC including; publication of the conference proceedings, virtual poster display, video productions, Productivity Forums, Hands-on-Research and a plenary session on Opportunities for Australian Cotton (linked to EMS pathways project).

A Conference Committee was formed from both ACGRA members and representatives of other industry organisations, including CRDC, to oversee the conference program and activities that contributed to a successful conference. ACGRA staff are responsible for implementing the program committee initiatives.

CRDC and CRC funded researchers and extension staff along with numerous members of the industry's service sector and growers are engaged in presentations that address session issues that align with an overall conference theme "PRODUCT, PRODUCTION, PROFIT – progressing our natural advantage"

CRDC was acknowledged as a major supporter of the conference, conference proceedings and the provider of the nominated activities both during the Conference and in numerous media editorial and press releases.

Results

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

AUSTRALIAN COTTON CONFERENCE - KEY INDICATORS (as at 15/11/06)			
Conference Year	2002	2004	2006
DELEGATES	1392	1478	1302
Early Bird Rego.s	759	287	214
Early Rego.s	140	60	53
Full Rego.s	197	119	51
Day	96	213	136
Students other than univ. & PhDs	50	22	18
Exhibitors & Trade Display Passes	NA	308	400
TOTAL Conference Delegates	1392	1478	1302
Total Multiple Rego.s (Partners 2002)	150	469	430
Growers	383	396	305
Consultants	65	81	55
Researchers	191	148	152
Service Sector	473	631	561
Other	280	222	229
Growers as % of Total	27.5%	26.8%	23.4%
TRADE DISPLAY			
TOTAL number of sites (3mx3m)	62	89	94
PROGRAMME			
Number of Sessions	11	11	12
Number of Concurrent Sessions	NA	2	4
Number of Hands-on-Research topics	NA	20	17
Number of Aust.Speakers	39	38	53
Number of Overseas Speakers	3	3	7
TOTAL number of presentations	42	41	60
Proceedings - Books (Incl. libraries)	519	125	56
Proceedings - CDs	717	1400	1200
Speaker Papers	35	24	40
Background Papers	80	63	44
Posters	47	44	47

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.

1. Opportunities for Australian Cotton

OUTPUTS

The session "Opportunities for Australian Cotton" had 4 presentations. Speakers addressed progress on a number of objectives of the EMS Pathways project. Topics included; the FIBREpak resource, Post-farm-gate BMP's, Branding Australian cotton and an end user perspective.

OUTCOMES

The EMS Pathways project is seeking to develop an additional module for the industry's EMS Best Management Practices. The session focused on post-farm-gate BMP has demonstrated progress on BMP and further encourage growers to participate in the BMP process. Branding of Australian cotton produced under the BMP process is a significant 'value-adding' opportunity for growers and progress on this issue is important to the industry.

CRDC Strategic Plan Strategies addressed:

Integrated NRM (1) Incorporate a broader range of environmental issues in the Cotton BMP program, and facilitate their adoption.

Value Chain Program (2) To promote agronomic and management practices, including the Cotton BMP program, which preserve and protect optimal fibre quality characteristics and

Value Chain Program (5) Support changes to the traditional classing system, which better identifies and rewards superior fibre characteristics.

2. Profitability Forums

OUTPUTS

The Forums will highlight the broader issues raised in the plenary session and focus on project level topics. The forums will take a TBL approach and the 3 distinct sessions; Economic, Environment and Community will highlight current research directly addressing improving outcomes for the industry its regional economies. There will be approximately 12 presentations and a panel discussion session.

OUTCOMES

The Profitability forums positioned profitable cotton growing with a profitable industry, environment and community. The industry's viability will be placed in the context of sustainability across the 'triple bottom line'.

The profitability forums directly addressed the CRDC Strategic plan outcome of a more sustainable, profitable and competitive cotton industry, providing increased environmental, economic and social benefits to regional communities and the nation.

CRDC Strategic Plan Strategies addressed:

Integrated NRM (2) Investigate and evaluate environmental management systems as an industry-led approach to improved natural resource management and

Integrated NRM (3) Support multi-disciplinary approaches to developing farm management strategies that complement catchment and landscape outcomes in relation to salinity, water quality and quantity, and biodiversity.

Farming Systems (1) Improve water use efficiency on farms using existing and new infrastructure, new tools and technologies

Farming Systems (3) Strengthen our understanding of soil health and improve crop nutrition management.

Breeding and Biotechnology (1) Develop regionally adapted cotton varieties exhibiting improved yield, quality, insect and disease resistance and herbicide tolerance and

Breeding and Biotechnology (2) Targeted, innovative biotechnology focused on solving production and quality constraints confronting the Australian cotton industry.

Value Chain (2) To promote agronomic and management practices, including the Cotton BMP program, which preserve and protect optimal fibre quality characteristics.

3. Hands-on-Research

OUTPUTS

Hands-on-Research is specifically designed to bring growers, consultants and other conference attendees face to face with industry researchers and extension personnel to discuss their R&D outcomes. Small group interaction is seen as a key to the success of this session. Growers from across the industry can focus on areas of research that are of interest to them.

OUTCOMES

The Hands-on-Research session allows for a much larger number of industry researchers and extension personnel to be involved in the conference program and to highlight the findings of their research. It also demonstrated the outcomes of a range of research and extension to the whole industry.

Topics addressed a number of CRDC Strategic Plan Strategies in Integrated NRM, Crop Protection, Farming Systems, Breeding & Biotechnology, and Value Chain programs.

The topics addressed included; Fibre contamination, Modified cotton seed oil, Whole farm water management, Overhead [irrigation] optimization, Managing on-farm water storages, Irrigation of high retention cotton, Farming systems and fibre quality, Calculating the cost of Bollgard II refuges, Black root rot, Integrated Fusarium Management, Managing greenhouse gasses, Aquaculture on cotton farms, On-farm wetlands for bioremediation, Environmental weed management, Deep drainage, Green vegetable bug, Mirids: new sampling & control, Nutrient management through budgeting and testing, Whitefly Management & Soil biology.

	Hands-on-Research TOPICS	Presenters
1	STORAGE LOSSES – WHAT CAN I DO?	Peter Smith, Jenelle Hare, Tony Lockrey, Ian Haylor, Graham Harris and Veronica Chapman
2	IRRIGATION OF HIGH RETENTION COTTON	Steve Yeates, James Neilson and Andrew Parkes
3	OVERHEAD [IRRIGATION] OPTIMIZATION	David Wigginton and Joe Foley
4	WHOLE FARM WATER MANAGEMENT	Dirk Richards, Emma Carrigan, Jim Purcell, Des McGarry, and Sarah Hood
5	AQUACULTURE ON COTTON FARMS	Michael Burke and Stuart Rowland
6	BETTER (GM) COTTON SEED OILS?	Allan Green and Dallas Gibb
7	CALCULATING THE COST OF YOUR REFUGE	Rebecca Longworth, Brendan Doyle, Sharon Downes, Rod Mahon and Colin Tann
8	KEEPING YOUR LINT CLEAN!	Rene van der Sluijs, Bob Dall'Alba, Vijayshanker M.N. and Mark Hickman
9	FARMING SYSTEMS AND FIBRE QUALITY	Robert Long, Stuart Gordon, Greg Constable and Doug Sands
10	MAKING SMART FERTILISER DECISIONS	Chris Dowling, Ian Rochester and Julie O'Halloran
11	INTEGRATED FUSARIUM MANAGEMENT	Stephen Allen, Joe Kochman, Chris Anderson, Linda Swan, Linda Smith, Bo Wang, Robyn Heath and Greg Salmond
12	BLACK ROOT ROT	David Nehl, Susanna Driessen, Joelle Coumans-Moens and Jason Moulynox
13	MIRIDS and GREEN VEGETABLE BUG; SUCKING YOUR PROFITS ALL THE WAY TO THE GIN	Robert Mensah, Mary Whitehouse, Angela Singleton, Moazzem Khan, Adam Quade and Sandra Deutscher
14	WHITEFLIES	Richard Sequeira, Paul Grundy, Melina Miles, Dave Murray and Austin McLennan
15	KEEPING HERBICIDES ON TARGET; DRIFT RESPONSES AND NOZZLE SELECTIONS	Graham Charles, Bill Gordon and Tracey Farrell
16	SIMPLE ENVIRONMENTAL TESTS TO ASSESS FARM WATER QUALITY	Angus Crossan, Ivan Kennedy, Paula Jones, Stacey Spanswick and Susan Maas
17	SOIL BIOLOGY BASICS	Oliver Knox, Nikki Seymour and David Midgley

4. Video Production

OUTPUTS

Presentations and Panel discussions were identified as topics on the conference proceedings that would be enhanced by video or audio items.

OUTCOMES

Video and audio formats of selected presentations

5. Virtual Posters

OUTPUTS

A number of monitors will display a contents page which will link topics with presentations from researchers and extension focus teams. Posters will be collated by CRDC Research Program groupings. It is envisaged that the posters may also be available for further dissemination to the industry via the internet. The posters will highlight research undertaken in individual projects and across various sub-disciplines via co-authored posters.

OUTCOMES

The poster presentation at the cotton conference allows delegates to review a summary of project and sub-program level research findings from current and recently completed research. The posters are an important additional pathway for reporting project outputs and research outcomes to the industry. They support the detailed publication of the conference proceedings and researchers can 'leverage' their paper presentation by also developing a poster in the process.

Topics addressed a number of CRDC Strategic plan strategies in People and Knowledge, Integrated NRM, Crop Protection, Farming Systems, Breeding and Biotechnology and Value Chain programs.

VIRTUAL POSTER TITLES

PEOPLE AND KNOWLEDGE

COTTON CATCHMENT COMMUNITIES CRC

Guy Roth,
Cotton Catchment Communities CRC.

INTEGRATED NATURAL RESOURCE MANAGEMENT

Impact of water quality on the structural condition of different cotton-growing soils

Simon Speirs¹ and Dr Stephen Cattle²

¹Trangie Agricultural Research Centre, NSW Department of Primary Industries and ²Faculty of Agriculture Food and Natural Resources, The University of Sydney, Australian Cotton CRC.

A User-friendly Method to Determine Deep Drainage and its Requirement in Cotton Soils.

Erin Trainer, Budiman Minasny, Damien Field and Alex McBratney

The University of Sydney, Cotton Catchment Communities CRC

Hydrological behaviour of a Palæochannel system under irrigation

Chris Vanags, Willem Vervoort and Diana Bennett

Hydrology Research Laboratory, Faculty of Agriculture, Food and Natural Resources, The University of Sydney and Cotton Catchment Communities CRC.

Water resource management and the age of uncertainty: Can science provide any answers?

Willem Vervoort and Floris van Ogtrop

Hydrology Research Laboratory, Faculty of Agriculture, Food and Natural Resources, The University of Sydney and Cotton Catchment Communities CRC.

Resistivity Imaging of Deep Drainage

Dr. Bryce Kelly and Prof. Ian Acworth

University of Technology Sydney & University of New South Wales

Cox's Ck - Coupled Surface Water and Ground Water Interactions and Modelling, for Improved Flow and Sustainable Yield Estimates

A. Prof Noel Merrick

University of Technology Sydney & Cotton Catchment Communities CRC

Birds on Cotton farms.

Greg Ford¹, Nicci Thomson², Stacey Spanswick^{3,5}, Greg Kauter^{4,5} and Guy Roth⁵

¹Qld Murray Darling Committee, ²Birds Australia, ³Namoi CMA, ⁴ACGRA, ⁵Cotton Catchment Communities CRC

Biodiversity of Tree Plantings on Cotton Farms in the Lower Namoi

Rhiannon Smith^{1,2}, Nick Reid^{1,2}, John Duggin¹, Guy Roth²

¹University of New England, ²Cotton Catchment Communities CRC

CROP PROTECTION

Proteomics reveals the adaptation ability of *Thielaviopsis basicola* to plants species

Coumans J.V.F., Adams M. and Pereg-Gerk L.

School of Biological, Biomedical and Molecular Sciences, University of New England

Delayed sowing as a best-bet approach to minimise the impacts of fusarium wilt

Chris Anderson and David Nehl

NSW Department of Primary Industries and Cotton CRC

Potential bio-control measures for the soil-borne fungal pathogen *Thielaviopsis basicola* in relation to cotton

Jason Moulynox and Lily Pereg-Gerk

School of Biological Biomedical and Molecular Sciences, The University of New England, Cotton Catchment Communities CRC.

Delayed sowing can decrease the severity of black root rot of cotton

David Nehl, Anowar Mondal, Chris Anderson

NSW Department of Primary Industries and Cotton CRC

Development of Bion[®] as a seed treatment for black root rot in cotton

Susanna Driessen^{1,3}, David Nehl^{1,3}, Stephen Allen^{2,3}

¹NSW Department of Primary Industries, ²Cotton Seed Distributors and ³Cotton CRC

Histological analysis of silicon induced defence responses in cotton infected with *Fusarium oxysporum* f.sp. *vasinfectum*

Jennifer Whan (PhD Candidate)¹, Dr Elizabeth Aitken¹, Linda Smith² and Dr Elizabeth Dann²

¹The University of Queensland and ²Queensland Department of Primary Industries and Fisheries

Investigating Fusarium genes preferentially expressed during initial infection on cotton: are they pathogenicity genes?

Joy Conroy, Peer Schenk and Elizabeth Aitken

School of Integrative Biology, The University of Queensland

Molecular analysis of *Thielaviopsis basicola*-cotton interactions leading to black root rot.

Lily Pereg-Gerk, Samiya Al-Jaaidi, Margaret Katz and David Backhouse,

School of Biological Biomedical and Molecular Sciences, University of New England.

Identification of *Fusarium oxysporum* f. sp. *vasinfectum* using vegetative compatibility group (VCG) analysis

Linda Smith and Dan Carrick

Queensland Department Primary Industries & Fisheries

Soil amendment with silicon and Fusarium wilt of cotton

L.J. Smith, D. Carrick, J. K. Kochman, J. Lehane and G. Salmond

Queensland Department Primary Industries & Fisheries

Fusarium Wilt and Rotation Options

Linda Swan^{1,2} Joe Kochman^{1,3,4} and Greg Salmond^{1,2}

¹Department of Primary Industries and Fisheries, ²Cotton Catchment Communities Cooperative Research Centre and ³Cooperative Research Centre for Tropical Plant Protection

Real-time PCR detection of Fusarium wilt of cotton.

S. Van Brunschot¹, W. T. O'Neill², J. Henderson¹, E. L. George², S. Bentley¹ and J. K. Kochman²

¹CRC for Tropical Plant Protection, The University of Queensland.

²Queensland Department Primary Industries & Fisheries

Managing cotton trash in Fusarium fields: less is best!

Chris Anderson¹, David Nehl¹ and Stephen Allen²

NSW Department of Primary Industries ²CSIRO and CSD and Cotton CRC

Nematodes in Australian Cotton

Oliver Knox¹ and Chris Anderson²

¹CSIRO Entomology and ²NSW Department of Primary Industries and Cotton CRC

Do 'food sprays' improve natural enemy performance?

Mark Wade¹, Jamie Hopkinson^{1,2}, and Myron Zalucki¹

The University of Queensland¹ and Queensland Department of Primary Industries and Fisheries² Australian Cotton CRC

Pheromones for mirids

Peter Gregg, Alice Del Socorro & Sam Lowor

University of New England and Cotton Catchment Communities CRC

Sniffer Dog Stalks Silent Enemy

Greg Horrocks, Floyd, Allison Crook, Dave Murray & Richard Lloyd

Queensland Department of Primary Industries and Fisheries.

Cluster caterpillar survives Bollgard II^(r) cotton"

Geoff Strickland, Helen Spafford Jacob and Justin Fairhead

Western Australia Department of Agriculture & Food, Cotton Catchment Communities CRC

Farmscaping

Dr Melina Miles

Queensland Department of Primary Industries and Fisheries.

Can Magnet® be used to control Heliothis on a regional scale?

Paul Grundy¹, Sherree Short¹, Anthony Hawes², Myron Zalucki³, and Peter Gregg⁴

¹Qld Dept Primary Industries & Fisheries, ²Ag Biotech, ³University of Queensland and ⁴University of New England

Weed Control in Roundup Ready Flex® cotton

Craig Dunn,

Monsanto Australia

Glyphosate resistance modeling in Roundup Ready® Cotton

Jeff Werth^{1,2,3,4}, Chris Preston³, Grant Roberts⁴, Ian Taylor⁵

¹Queensland Department of Primary Industries and Fisheries, ²Cotton Catchment Communities CRC, ³CRC for Australian Weed Management, ⁴CSIRO, ⁵CRDC

FARMING SYSTEMS

The use of Stem Diameter Sensors for Irrigation Scheduling in Cotton

Simon C White

National Centre for Engineering in Agriculture, University of Southern Queensland

Robust predictions of soil properties with uncertainty by diffuse reflectance spectroscopy and bagging-PLSR

R.A. Viscarra Rossel

Australian Centre for Precision Agriculture, The University of Sydney. Cotton Catchment Communities CRC

Determining the composition of mineral-organic mixes by UV-vis-NIR diffuse reflectance spectroscopy (DRS)

R.A. Viscarra Rossel, R.N. McGlynn & A.B. McBratney

Australian Centre for Precision Agriculture, The University of Sydney. Cotton Catchment Communities CRC

Soil biology in cotton farming systems

David Nehl, Oliver Knox

¹NSW Department of Primary Industries, ²CSIRO Entomology and ³Cotton CRC

Variation in microbial community and function within cotton fields

Oliver Knox and Gupta Vadakattu

CSIRO Entomology

Optimizing each irrigation in real time using reip

Kanya L Khatri and Rod J Smith

CRC Irrigation Futures and Faculty of Engineering and Surveying University of Southern Queensland

The impact of sodicity on the potassium nutrition of cotton

Kylie Dodd^{1,3}, Dr Chris Guppy¹, Dr Peter Lockwood¹, Dr Ian Rochester^{2,3},

¹University of New England, ²CSIRO Plant Industry & ³Cotton Catchment Communities CRC

A Cost Benefit Analysis of the Variable Rate Defoliation of Cotton in the Namoi Valley, NSW, from March to May 2006

Kim Townsend, John McKee and Joe Townsend

Belt-Wide Agriculture, Wee Waa, NSW.

How can we manage our irrigation knowledge?

David Wigginton

NSW DPI, Cotton CRC

OverSched - a Centre Pivot & Lateral Move irrigation management tool

Joseph Foley^{1,2,3}, David Wigginton¹, Simon White¹, Cheryl McCarthy² and Steven Raine^{1,2,3}

¹National Centre for Engineering in Agriculture, ²CRC for Irrigation Futures, ³Faculty of Engineering and Surveying, University of Southern Queensland

Irrigation water placement by Centre Pivots & Lateral Moves on cotton

Joseph Foley^{1,2,3}, David Wigginton¹ and Jochen Eberhard¹

¹National Centre for Engineering in Agriculture, ²CRC for Irrigation Futures, ³Faculty of Engineering and Surveying, University of Southern Queensland

Linking Farming Systems to Fibre Quality and Textile performance

R. Long¹, S. Gordon¹, M. Bange², R. van der Sluijs¹, G. Naylor¹

CSIRO Textile and Fibre Technology¹ and CSIRO Plant Industries², Cotton Catchment Communities CRC

Oxygation: enhanced yield and water use efficiency of aerated sdi cotton on heavy clay

Lance Pendergast and David J Midmore,

Plant Sciences Group, Central Queensland University, Rockhampton.

6. Conference proceedings

OUTPUTS

The conference proceedings highlight research undertaken in individual projects and across various sub-disciplines via co-authored papers. In 2006 there were some 84 papers submitted for the conference proceedings with some 224 authors and 668 pages in total.

OUTCOMES

The Conference proceedings are an important pathway for reporting project outputs and research outcomes to the industry. The electronic format gives the speaker presentations and virtual posters an 'extended' life and wider impact by their continued availability via CD-rom after the conference.

Papers address a number of CRDC Strategic plan strategies in People and Knowledge, Integrated NRM, Crop Protection, Farming Systems, Breeding and Biotechnology and Value Chain programs.

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.

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 Australian Cotton Conference is a major industry forum attended by a broad cross-section of growers, industry service sectors and government and non-government organisations. The conference program is developed as an important public 'showcase' through which the outputs and outcomes of industry research and development are presented and discussed.

The Conference provides a number of pathways to demonstrate these improved outcomes from R&D to participants and, as an important record for the industry, via the conference proceedings. This project aimed to underwrite a number of conference program components to ensure effective communication of R&D outputs contributing to improved economic, environmental and social outcomes to the whole industry through the adoption of CRDC funded R&D outcomes.

The Australian Cotton Growers Research Association Inc. believes the 2006 Australian Cotton Conference achieved these objectives in a particularly difficult time for the industry (with extreme drought and low prices).

The 2006 conference delegate evaluation (attached) highlights many of the outcomes for participants achieved by the Corporation's long term support of the Conference which enabled this critical and valuable industry activity to again take place in 2006.

Key 'comments' from the 2006 Delegate Evaluation

- The terms 'networking' or 'meeting people' were mentioned by 76 of the 126 respondents who attended the 2006 conference.
- The words 'research' and 'information' were mentioned by 79 respondents.
- Excellent, great, fantastic, best and 'very good' were mentioned 87 times in total.

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.

Conference Proceedings

Comprehensive cotton conference proceedings have been published on CD-rom for all conference delegates, numerous research institutions and libraries and for sale to individuals. The 2006 proceedings CD-rom included; speaker presentations (Powerpoints), 21 video/audio items (totalling 6hr.50min.), and the virtual poster presentations in addition to speaker and submitted papers totalling 620Mb of content.

Speaker and submitted papers have been published and distributed to individual subscribers and numerous research institutions and libraries. The 2006 Cotton Conference proceedings book contains 40 speaker papers and 44 submitted papers (668 pages).

In addition to the formal proceedings there was a program of media communication both prior to and during the conference.

Australian Cotton Outlook

Editorial: COTTON CONFERENCE COUNTDOWN
March, April, May, June, July and August 2006 editions

Australian Cotton Grower Magazine

Australian Cotton Conference – you can't afford not to go. Volume 27, No2. April-May, 2006
Cotton Conference offers something for everyone. Volume 27, No3. June-July, 2006

Media releases

Regular press releases were distributed to all cotton industry, rural and regional print and radio media organisations. A number of radio interviews were also conducted.

Pre-conference Media

February 27, 2006 COTTON CONFERENCE TO CONSOLIDATE INDUSTRY'S FUTURE
March 20, 2006 PROFITABILITY TAKES CENTRE STAGE AT COTTON CONFERENCE
March 31, 2006 BIOTECHNOLOGY AT THE ROOT OF COTTON PROGRESS
April 4, 2006 COTTON CONFERENCE REGISTRATION NOW OPEN
April 24, 2006 UNDERGROUND SEARCH FOR COTTON SOLUTIONS
May 1, 2006 SAVINGS OFFERED FOR COTTON CONFERENCE DELEGATES
May 19, 2006 COTTON GROWERS TAKE A BREAK
May 29, 2006 COTTON COMES TO GRIPS WITH WATER TORTURE
June 26, 2006 SECONDARY PESTS BECOME PRIMARY FOCUS IN COTTON
July 17, 2006 COTTON TRADE AND MARKETING ISSUES ON AGENDA

Conference Media

Hamish Millar - INNOVATIVE SCIENCE THE KEY TO COTTON'S FUTURE
Allan Williams - MAJOR BENEFITS FROM BRANDING AUSTRALIAN COTTON
Bob Dall'Alba - CHINA KEY MARKET FOR AUSTRALIAN COTTON
Bruce Pyke - BIOTECH BREAKTHROUGHS BENEFIT COTTON
Emma Carrigan and Sarah Hood - NO PLANS TO DITCH FURROW IRRIGATION
Dr Chris Dowling - COTTON NUTRIENT STRATEGY NEEDS REVISION
Dr Chris Mitchell - CLIMATE CHANGE TO IMPACT ON COTTON
Dr Fred Perlak - SLOW PROGRESS IN DEVELOPING DROUGHT TOLERANT COTTON
Dr Fred Perlak - COTTON BIOTECH PIPELINE LONG AND COSTLY
Graham Harris - APPETITES WHET FOR WATER USE EFFICIENCY
Vijayshankar M.N. - INDONESIA FAVOURS AUSTRALIAN COTTON
Prof. James Dale AO - EXTRA BENEFITS FROM NEXT GENERATION OF TRANSGENIC COTTON
Joe Nicosia - POSITIVE WORLD COTTON OUTLOOK
Marc Lewkowitz - PIMA COTTON PLOUGHS AHEAD IN USA
Neek Morawitz - RISING COSTS THREATEN COTTON GROWERS

Assoc. Prof. Nick Reid - COTTON FOCUS ON ECOSYSTEMS AND BIODIVERSITY
Richard Haire - OPPORTUNITIES FOR COTTON TO CONSOLIDATE ON WORLD MARKETS
Roberta Brazil - SMART R&D THE KEY TO COTTON PRODUCTIVITY
Dr Roy Powell - ECONOMIC TRENDS PRESSURE COTTON COMMUNITIES
Dr Stephen Allen - RESEARCH KEEPS COTTON DISEASES IN CHECK
Tony Pearson - ANZ SEES MIXED RURAL OUTLOOK

(b) for the future presentation and dissemination of the project outcomes.

The conference programme and proceedings will have provided many individual researchers with a focus for distilling the outcomes of their research over the last 2 years in particular into key take-home messages for growers and industry participants in general. This is expected to have an enduring effect through the 2006/07 season.

(c) for future research.

ACGRA believes the project has strongly contributed to a successful conference in 2006 and that this enhances the event as a major research extension activity for the industry in the future.

8. A. List the publications arising from the research project and/or a publication plan.
(NB: Where possible, please provide a copy of any publication/s)

The 2006 Australian Cotton Conference Proceedings (CD-rom) ISBN 1 92102 514 X
The 2006 Australian Cotton Conference Proceedings (Publication) ISBN 1 92102 513 1

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

Conference Media releases are on line at <http://www.acgra.net.au/13thACC.htm>

At the time of submission of this Final Report selected conference papers have yet to be posted online. In the past the conference papers have been placed on the Cotton CRC web site. ACGRA may seek to host the conference proceedings on the ACGRA web site in future. www.acgra.net.au

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 13th Australian Cotton Conference in August 2006 provided an excellent 'showcase' to enhance the outputs from CRDC funded research to the industry. The largest gathering of cotton growers in the industry calendar was presented with information in various formats during the conference program that demonstrated (and extends) improvements in outcomes for the industry and it's regional economies.

Growers and industry personnel were challenged to respond to (adopt) the findings of research and extension projects through 'less uncertainty and greater clarity' around maximising their profitability and sustainability through the adoption of home grown Research and Development.

The conference programme showcased improvements in the industry's 'Triple Bottom Line' from CRDC funded research. This was enhanced by the attendance of over 1,300 industry delegates and the discussion and networking opportunities over the 3 days.

The production of 'virtual posters' and the conference proceedings provides an on-going record of the challenges and opportunities facing the industry at this time. Research providing economic, environmental and social outcomes was deliberately incorporated and linked in the conference programme.

The conference programme targeted the major issues of cotton farm profitability, opportunities for our product along the value chain and our industry's contribution to the economic, environmental and social outcomes of regional communities.

