

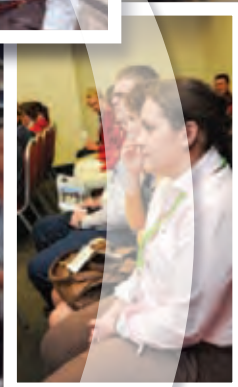
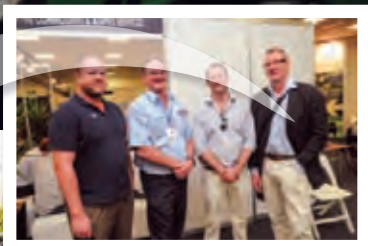
COTTON RESEARCH & DEVELOPMENT CORPORATION



Spotlight

SPRING 2012

on Cotton R&D



YEAR OF THE FARMER
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CONFERENCE EVER

Best Practice





FUTURE D&D IN GOOD HANDS	3
CRDC WELCOMES NEW TEAM MEMBERS	4
GOVERNMENT BACKS RURAL R&D	5
CRDC TO CONTINUE SUMMER SCHOLARSHIPS	5
CONTRIBUTING TO ENVIRONMENTAL CHANGE	6
FIVE COTTON COURSE SCHOLARSHIPS UP FOR GRABS	6
RESEARCH GAINS A GLOBAL CONTEXT	7
COME CLEAN. GO CLEAN. CAMPAIGN IN FULL SWING	8
HOW WOULD YOU RESPOND?	8
HYPHETICAL SCENARIO: TEXAS ROOT ROT INCURSION	9
WASHING DOWN TO KEEP WEEDS DOWN	10
IMPROVING COMMUNICATION THROUGH INDUSTRY PARTNERSHIP	11
NEW LOOK IRMS: FIRST PLACE TO GO WHEN SELECTING A SPRAY	12
CHANGING SEASONS MEANS CHANGING INFORMATION	13
BUYING IN BUGS	14
BEATING THE THREAT OF RESISTANT WEEDS	15
SIGN ON TO A WORLD OF INFORMATION AT WWW.COTTASSIST	16
READ UP BEFORE HEADING NORTH	17
UNDERSTANDING WORKFORCE NEEDS	18
FROM BELFAST TO "BRIGALOW" AND LOVING IT	19
STUDY PROMOTES BETTER UNDERSTANDING	20
WATER RESEARCH IN ONE PUBLICATION	20
QUAD BIKES THE BIGGEST KILLER ON AUSTRALIAN FARMS	21
FOR THE DIARY: CLOSE OF 2012 myBMP AUDIT PERIOD	22
THE FEW MINUTES THAT CHANGED MY MIND ABOUT myBMP	22
SAFETY RESPONSIBILITIES HAVE CHANGED:	23
HOW myBMP CAN HELP	23
GROWING BETTER ALL THE TIME	24
STRENGTH IN NUMBERS	25
WHERE TO NEXT WITH COTTON R&D?	28



IMAGES SHANNA ROWLANDS

The many faces of the 16th Australian Cotton Conference.

IN THE SPOTLIGHT



Congratulations to the organisers of the 16th Australian Cotton Conference, which attracted the largest crowd in its history. It was wonderful to catch up with so many of you there and this attendance stands as testament to the connection and confidence people have in the industry.

It was very pleasing to see so many first time conference attendees and the calibre of the presentations which depicted a progressive, responsible and resilient industry in which everyone is continually striving to improve.

Industry R&D continues to evolve as we transition to post Cotton CRC arrangements. A new partnership between CRDC, Cotton Australia and Cotton Seed Distributors for management and resourcing of the delivery of R&D was announced at the Cotton Conference and its implementation is underway. Further the CRDC has welcomed a number of new staff to its capable team to ensure it can continue to actively and responsibly manage a doubling of R&D investment for benefit to industry.

The formation of the International Cotton Research Association has put the industry in a better position globally, as we continue to compete with other textile and manufacturing to keep cotton as a fibre of choice. Fittingly Dr Greg Constable was appointed the inaugural chair of this association, an indication of the esteem he is held, not just in this country, but internationally.

As the season kicks off, our attention turns to crop management and in this issue we have a focus on biosecurity and the industry's *Come clean. Go clean.* campaign which is aimed at alleviating the spread of disease and pests both domestically and internationally. The quickest way to lose our competitive advantage is from an incursion of exotic pests. Please take note of the services and products available to growers and consultants in this regard,

which come in the form of publications, web based systems and the new avenue for disease queries, the PATHway system.

While protecting our crops from exotic pests, we should also be mindful of the way we approach current pests, and this season's Insect Resistance Management Strategy is a tool to achieve sustainable control methods. Renee Anderson's experience in the advantages of beneficial insects on pest control makes for interesting reading.

Protecting our most valuable resource, our people, has been made easier through the use of myBMP. The industry is very mindful of farm safety and has a history of being proactive in providing guidelines and information to growers in this regard. Keeping up to date with changes to Workplace Health and Safety are imperative and we have also outlined these in this issue and ways in which myBMP can help.

The importance of people and workforce issues is again highlighted with an update on Dr Ruth Nettles' CRDC-commissioned study, which will supply industry with invaluable information to better manage workforce needs into the future. We thank Cotton Australia and all those who have been part of the survey for their input, as the benefits of the information gained will assist the industry as a whole.

We also would like to thank those people involved in the industry Irrigation Benchmarking study. We appreciate that time is a valuable commodity, as is our water, so thanks go to those growers who participate, which once again, benefits all growers.

In this edition we have noted CRDC's progress with the preparation of its next Strategic Plan and an open invitation to contribute to planning the future direction of investment in cotton R&D.

In closing we wish you and the industry great success for the coming cotton season.

Bruce Finney



Australian Government Cotton Research and Development Corporation

Spotlight is brought to you by Australia's cotton producers and the Australian Government through the publisher Cotton Research & Development Corporation (CRDC). CRDC is a research and development partnership between the Australian cotton industry and the Australian Government. Cotton Research and Development Corporation ABN: 71 054 238 316
Our vision: A globally competitive and responsible cotton industry

Our mission: Invest and provide leadership in research, innovation, knowledge creation and transfer.
Our outcome: Adoption of innovation that leads to increased productivity, competitiveness and environmental sustainability through investment in research and development that benefits the Australian cotton industry and the wider community.
Corporate background: CRDC was established in 1990 under the Primary Industries and Energy Research and Development Act 1989 (PIERD Act.) which outlines its accountability to the Australian Government and to the cotton industry through the Cotton Australia. CRDC is responsible to the Australian Government through the Minister for Agriculture, Fisheries and Forestry, Joe Ludwig. CRDC is committed to fulfil its legislated charter to: Invest in and manage an extensive portfolio of research, development and extension projects to enhance the ecological, social

and economic values associated with cotton production systems and to benefit cotton industry participants, regional communities and the Australian community.
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FUTURE D&D IN GOOD HANDS

BUILDING ON THE LEGACY OF THE COTTON CRC, A COLLABORATION BETWEEN COTTON AUSTRALIA, COTTON SEED DISTRIBUTORS AND CRDC HAS FORMED TO RESOURCE AND MANAGE THE INDUSTRY'S R&D EXTENSION AND *myBMP* SERVICES.

These three leading cotton industry organisations have pledged funding for five years for a new Australian Cotton Industry Development and Delivery Team. This investment will see a significant expansion of specialist extension information and R&D information services across cotton growing regions in time for the 2012-13 crop.

Announcing the collaboration at the 16th Australian Cotton Conference, CRDC Executive Director Bruce Finney said \$4m has been pledged annually to resource and manage delivery of R&D information.

"This will see an expansion of regional services in many cotton districts to work with farmers looking to improve practices and adopt best practice. The cotton industry is committed to ensure that every grower is geared for success with every crop," he said.

"Improved communications of trusted advice and specialist technical knowledge is a vital ingredient of successful cotton production. Trusted information will be readily available due in part through local facilitators and enhanced communication



LEFT:
A way forward – Cotton Australia Chair Lyndon Mulligan, CSD Chair James Kahl and CRDC Chair Mike Logan at this year's Australian Cotton Conference where the new Development and Delivery partnership for R&D was announced.

BELOW LEFT:
Development and Delivery Team Manager Ian Taylor – ensuring the industry retains its competitive advantage.

between researchers, growers, consultants, agribusiness, natural resource management agencies and cotton industry organisations.

"Team members will apply high-level skills and experience to improve industry practices, R&D communications and industry responsiveness.

"We are happy to announce that leading this complex and important new service will be Dr Ian Taylor of Narrabri, NSW. Ian Taylor is widely regarded across all sectors of the cotton industry for his practical solutions-based approach.

"Ian has extensive experience having worked in cotton research, research program management and commercialisation of research for NSW DPI, CRDC and Monsanto. Ian and the D&D team will be working with industry researchers, agribusiness, crop consultants and NRM organisation partners to ensure they meet the evolving needs of growers and industry.

"In addition to the appointment and resourcing of new people in the field, innovative resources for online delivery of information that includes *myBMP*, information websites and mobile telephone applications (Apps) will result in improved responsiveness to grower needs as the season unfolds."

Ian Taylor said the aim of the D&D Team will be to help the Australian cotton industry retain its competitive advantage through the provision of the right information at the right time.

"I believe the cotton industry is the

most innovative and exciting industry in Australian agriculture," Ian said.

"It is an industry that from its inception recognised the value and importance of research and development. It is widely recognised that the reason Australian cotton growers are at forefront of cotton production is through their support of strong discipline and systems based research, coupled to a world leading breeding program.

"Throughout my career, I have been fortunate to work with many very talented and dedicated people and have seen research outcomes transpire into production systems, based on best management practice, underpinning our sustainability and competitiveness.

"As D&D manager, I see my role as being a facilitation role, helping to broker information and knowledge within the various industry sectors. We have a fantastic Delivery and Development team which will be further expanding in the coming months to better meet local needs thus ensuring growers in all cotton areas have access to the latest and most relevant information for their region. "The *myBMP* platform will form one of the key delivery mechanisms, with further enhancements, giving growers the ability to access and interrogate a wide range of information sources and links."

Bruce Finney
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email us



CRDC WELCOMES NEW TEAM MEMBERS

CRDC SEEKS TO PROACTIVELY MANAGE ITS RESEARCH INVESTMENT WITH RESEARCHERS TO MAXIMISE THE BENEFITS FROM THE RESULTS FOR GROWERS AND THE COMMUNITY.

“Having managed down during the drought, CRDC is responding to the better industry circumstances with the welcome opportunity and challenges of a doubling in R&D investments and implementing new collaborative arrangements for industry Development & Delivery,” Executive Director Bruce Finney says.

“In doing so CRDC is fortunate to have recruited three highly capable staff in Jane Trindall, Allan Williams and Susan Maas to join Bruce Pyke, Tracey Leven and Dallas Gibb in our R&D management team.”

Jane Trindall began as CRDC’s Program Manager – Natural Resource Management (NRM) in mid July and is responsible for leading the development of its NRM strategy and research activities.

“My role is to nurture strategic linkages and collaborations with natural resource management research providers and organisations and identify opportunities for new partnerships and co-investment,” Jane says.

Jane brings over 15 years’ experience of working in the field of natural resource management to this role. Her most recent role was Catchment Program Manager for the Cotton CRC. The Catchment Program included research projects to better understand groundwater, surface water, water quality, ecosystem services and projects to provide guidance for growers and natural resource management agencies. Prior to this role, Jane co-led a major Namoi Catchment Management Authority / Cotton CRC project to invest in NRM projects conducted with farmers to achieve significant NRM on-ground outcomes in line with the Namoi Catchment Action Plan.

Jane recently co-ordinated the production of *The Australian Cotton Water Story* – which brings together over 80 articles on cotton related water R&D undertaken over the past decade and launched at this year’s Australian Cotton Conference.

Allan Williams brings much experience to the CRDC Program Manager responsibilities for soils, climate change / greenhouse gas emissions and energy efficiency. In this new



ABOVE: Allan Williams is the CRDC Program Manager responsible for soils, climate change / greenhouse gas emissions and energy efficiency, while Jane Trindall has been appointed Program Manager for Natural Resource Management.



LEFT: Susan Maas has joined the CRDC team as the Disease, IPM and Biosecurity Specialist

role, Allan will represent the CRDC on relevant cross-sectoral committees that have been established by the Australian Government to drive collaboration and co-ordination on climate change, nutrition and soils related research. Allan will be able to bring a practical perspective to those committees on behalf of cotton farmers and will identify potential opportunities for collaboration and industry participation in government funding initiatives.

For the last seven years Allan has been working for the Better Cotton Initiative (BCI) as the Program Manager for Asia and has chaired the International Cotton Advisory Committee’s expert panel on the Social, Environmental and Economic Performance of cotton.

Susan Maas has joined CRDC as Senior Development and Delivery Team Specialist – Disease, IPM and Biosecurity. Susan will be based in Emerald and working with the Australian Cotton Industry D&D team headed by Ian Taylor. Susan will continue to lead the *Come Clean. Go Clean.* farm biosecurity campaign and expand her editorial work on industry publications and mobile APPs. Susan will lead production of the annual *Cotton Pest Management*

Guide and the *Australian Cotton Production Manual*.

Prior to taking on this role, Susan was working with Queensland Department of Agriculture, Fisheries and Forestry, and the Cotton CRC and her appointment with CRDC is a continuation and expansion of her Biosecurity Specialist role in the D&D Team.

While no longer having a direct regional role, Susan’s presence in the area will allow her to maintain close contact with the industry.

As the new CRDC representative to Plant Health Australia (PHA) Susan says part of her role entails building relationships within PHA and helping industry to further consider and manage its biosecurity risks.

“This will include building awareness within the industry of threats and ensuring there are contingencies in place,” she says.

“I’m also really looking forward to another aspect of my role which is to improve linkages between the D&D Team and Crop Consultants Australia (CCA). CCA are on the ground and the first to be aware of emerging issues, and are a key partner in the delivery of innovation and research.”

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DESPITE A RECENT PRODUCTIVITY COMMISSION RECOMMENDATION THAT THE FEDERAL GOVERNMENT CUT FUNDING TO RURAL R&D IN A BID TO DRIVE PRIVATE INVESTMENT, GOVERNMENT HAS PLEDGED TO CONTINUE TO MATCH INDUSTRY EXPENDITURE DOLLAR FOR DOLLAR.

GOVERNMENT BACKS RURAL R&D

The Productivity Commission reviewed the research and development corporations' (RDC) model, examining the rationale for government investment in RDCs. In addition to this the Rural Research and Development Council produced an investment plan outlining a rationale for balancing Australian Government investment in rural R&D. In July, government responded to the review in its *Rural Research and Development Policy Statement*.

The statement outlined the Australian Government's enduring commitment to world-class rural RD&E and its strong partnership with industry.

"Our rural research, development and extension system is unique and held in high regard both in Australia and internationally," Federal Minister for Agriculture, Fisheries and Forestry Joe Ludwig said.

"The RDCs provide a strong link between government, industry and the research community, and the government will continue to support them.

"A key pillar of the RDC model is the government's matching contributions, which again, we will continue."

The policy statement reflects four key themes for improvements to the RDC model: increased transparency and accountability in the RDC model; improved coordination and priority setting across the rural RD&E system; an increased range of mechanisms for pursuing productivity growth; and increased operational efficiencies and value for money



Federal Minister for Agriculture, Fisheries and Forestry Joe Ludwig (right) says R&D is central to our rural industries remaining internationally competitive. He is pictured with ABARES Chief Scientist Dr Kim Ritman and Rebecca Haling, who CRDC supported for the Science and Innovation Award for Young People in Agriculture, Fisheries and Forestry, which provides recipients with grants to undertake a project exploring an emerging scientific issue or innovation.

on RD&E investment.

"R&D is central to our rural industries remaining internationally competitive, environmentally sustainable and socially responsible. The importance of rural R&D to our

agriculture sector cannot be underestimated, nor should it be taken for granted," Minister Ludwig said.

The R&D policy statement can be found at www.daff.gov.au/rdpolicystatement

see our website

CRDC TO CONTINUE SUMMER SCHOLARSHIPS

The cotton industry Summer Scholarship Education Program has been supporting university students to work with researchers on projects since the inception of the first Cotton CRC, and with new support from CRDC the program will continue.

These scholarships are seen by CRDC as an important capacity building initiative, encouraging many to further their association with the cotton industry in a research capacity after university.

"Summer scholarships are intended to provide university students (not necessarily in their final years) with work experience in the R & D environment," CRDC General Manager R&D Investment Bruce Pyke said.

"This initiative aims to provide direct research linkages between industry, researchers and university students.

"The scholarships enable university students to conduct short research, extension or industry projects under the direct supervision of a researcher or extension officer from either the public or private sector.

"We aim for the student to benefit from the experience, while the applicant should benefit from the proposal and its outcome."

Any CRDC research partners, researchers or extension officers may apply and students can undertake their project at any location but must be under the direct supervision of the applicant.

Summer Scholarship projects will be considered in the context of the CRDC's three established programs and will be monitored by the respective program manager. Projects should meet the objectives of the CRDC's Strategic Plan 2008-2013 and applications from researchers supported by CRDC investment grants will be given priority, however other researchers may also apply. Applications from non-university organisations must have agreement from the student's university demonstrating the willingness of at least one member of the academic staff to co-supervise the project.

It is not necessary to have identified a student before submitting an application, but those appli-

cations where a suitable student has been identified are also likely to be given priority.

CRDC offers students a stipend of up to \$4000 (for eight weeks employment) and a total of \$1000 towards operating funds. If the student is based at the Australian Cotton Research Institute (ACRI) in Narrabri an onsite supervisor must be identified. ACRI may be able to assist with accommodation in Narrabri for projects based there.

All new applicants are encouraged to discuss applications with the relevant Program Manager before submission. Projects can also be discussed with the General Manager R&D Investment Bruce Pyke (02 6792 4088) e-mail bruce.pyke@crdc.com.au

Applications close October 10 and should be completed on the form available on the CRDC website (see below) and returned to the CRDC Project Administrator Manager at research@crdc.com.au See CRDC's Strategic Plan 2008-2013 at www.crdc.com.au

see our website

email us

CONTRIBUTING TO ENVIRONMENTAL CHANGE

WOMEN WORKING ON FARMS AND IN RURAL AREAS PLAY A PIVOTAL ROLE IN FACILITATING AND MANAGING CHANGE.

“Women’s views and involvement in their business is important,” says WinCott’s Helen Dugdale, who is overseeing a Natural Resource Management Survey on behalf of the group.

“Climate change and agricultural economic and environmental sustainability have been debated widely at various levels, but most importantly there is a need to recognise the practical on-farm and regional activities which have and continue to contribute to sustainable practices.

“Some of these practices include recycling in general, energy efficiency, tree planting, growing GM crops and reducing pesticide use, managing specific biodiversity areas, reducing livestock access to waterways, reduce tillage practices, water use efficiency and using bio-fuels, to name a few.

“Through the WinCott survey our aim



Through completion of the WinCott NRM survey, the industry’s achievements can be identified and any barriers can be understood.

is to assist women’s understanding and awareness of environmental and ethical stewardship to enhance/influence the uptake of positive practices which impact on the agricultural ‘footprint’.

“Through completion of this survey, the industry’s achievements can be identified and any barriers can be understood.”

Respondents’ answers are completely anonymous, and will be aggregated into a

report and disseminated to industry.

“Resources can then be applied to assist with the adoption of environmental practices in the workplace – which could include the farm, gin, warehouse or agribusiness,” Helen said. 

To be a part of the survey contact
Helen Dugdale
0417 064507
helen@helenwheels.com.au

 email us

FIVE COTTON COURSE SCHOLARSHIPS UP FOR GRABS

THE AUSTRALIAN COTTON INDUSTRY SUPPORTS AND ENDORSES THE UNE COTTON PRODUCTION COURSE AS A KEY BASE FOR TRAINING.

The course has been running since 1994 and is designed, written and conducted by experts in the cotton industry. CRDC is offering five part-scholarships to enroll in The University of New England (UNE) Cotton Production course to begin study in 2013. Scholarships can be undertaken at home over a one to two year period, depending on personal or time commitments.

“All people in the course share a passion for the industry and cite improving their knowledge and capacity to advance their own skills in a vibrant industry as reasons for applying for a CRDC part-scholarship,” CRDC Program Manager Bruce Pyke said.

“Furthermore the cotton industry has identified gaps in the availability of tertiary graduates in the cotton industry in coming years.

“A study recently commissioned by CRDC has alerted industry to this coming shortage, and the time to act in now in terms of attracting would-be graduates to the industry.

“This has seen us increase the number of scholarships offered by CRDC to five this year as a small step toward addressing the future shortage.”

While a large percentage of the current enrolments are applied agronomists looking to widen their knowledge-base relating to cotton production, the course is also attracting students from a range of other industry sectors including farm management and agribusiness.

Course co-ordinator and lecturer Brendan Griffiths has been a field cotton agronomist and consultant for 21 years.

“The two-year course is a production-based applied agronomy course with four subjects delivering content specific to cotton



Previous UNE cotton production course students at a CRDC Big Day Out at “Keytah”.

THIS COURSE IS IDEAL FOR:

- ■ Farmers
- ■ Advisors
- ■ Consultants
- ■ Cotton processors
- ■ Researchers
- ■ Existing students

production, the environment and the farming systems relevant to the cotton industry,” Brendan said.

“Since its inception it has been the only cotton industry specific, academic based course available.

“We offering a scientific based course, delivered in an applied manner to equip students with the knowledge and skills to hit the ground running, or generally broaden their knowledge of the cotton industry, and cotton production.”

To apply for one of five part-scholarships, download your application form from the CRDC website www.crdc.com.au CRDC will consider all scholarship application forms received by COB December 3, 2012. 

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RESEARCH GAINS A GLOBAL CONTEXT

A NEWLY FORMED INTERNATIONAL RESEARCH ASSOCIATION AIMS TO IMPROVE RESEARCH COLLABORATION AND PROMOTE COTTON GLOBALLY.

Discussion was initiated at the World Cotton Research Conference-5 (WCRC-5) in Mumbai 2011 for establishing an International Cotton Researchers Association (ICRA). The scientists attending the conference strongly endorsed the creation of ICRA to work with the International Cotton Advisory Committee's (ICAC) Secretariat to plan and promote the creation of a global cotton researcher's network.

Incorporation was formally completed in the US in Washington DC in April 2012. Australia's own CSIRO plant breeder Dr Greg Constable was chosen to chair an ICRA Executive Committee of 15 international scientists from India, China, Pakistan, Uzbekistan, Senegal, Kenya, South Africa, Brazil, Argentina, France, Germany, USA and Australia.

ICRA is a voluntary association open to cotton researchers of all disciplines and countries willing to contribute to global unity among cotton researchers. Membership is open to cotton researchers from all countries, regardless of ICAC membership and more than 1000 scientists have expressed interest in joining.

"The formation of the association is a huge step forward for the global cotton industry as it gives us a real opportunity to advance research and cotton as a fibre through the greater sharing and discussion of information, no matter how large or technically advanced a country is," Greg Constable says.

"It will allow more open and meaningful interaction among scientists from different countries to build on ideas and concepts, which was possible before the formation of this group, but happened in a more ad-hoc, unstructured way.

"We hope many barriers to research collaboration for the benefit of the industry globally will be removed through ICRA."

The initial tasks have been establishing the By-laws and Strategic Plan of the association.

"These documents will specify our management structure and objectives, but during this process, members of the new Executive Committee are becoming familiar with specifics of priorities and key activities around establishing and operating a global cotton research network," Greg said.

"ICRA will also support program planning for WCRC-6 in Brazil in 2015. At that event a new Executive Committee will be nominated and elected rather than appointed."

Greg said been chosen for this role as the leader of the world's researchers is a big challenge.

"I supported the original concept because of my belief that strong communication and collaboration are important components of innovative and successful research. Having expressed that opinion, I was invited by ICAC to chair the inaugural Executive Committee," he said.

"This was a surprise but I decided to accept the invitation as a measure of my enthusiasm for the concept.

"The cotton research community in Australia is relatively small, so we are used to relying on literature and communication with scientists across the world for discussion, ideas and advice. Research progress is usually achieved by many small steps by different scientists, so the more linked scientists are, the more they learn from each other.

"It will now be necessary to estab-



lish an Australian Cotton Research Scientists Association to be a point of contact by ICRA."

Greg said that over time ICRA is determined to ensure that all cotton research scientists have access to information, advice and collaboration to improve their research and its application in their country. "From the list of countries represented in the Executive Committee, it is obvious that scientists have different cultures, production systems and challenges – and many lack the structure to obtain support from national, let alone international scientists," he says.

"For many isolated scientists, access to help, advice and collaboration will substantially improve their research planning, conduct and its application.

"There are occasions where researchers will want specific information (eg with weed, pest and disease identification) but one large effect of this organisation will be the help to integrate their research results into the local production system.

"Researchers from more advanced countries will be able to use their experience to provide peer support to many other scientists and particularly to expand and enhance their own research base by participating in experiments in different countries.

"ICRA is about improving all research and promoting cotton globally."

For further information or to register contact Dr M. Rafiq Chaudhry, Head Technical Information Section, ICAC Washington DC USA rafiq@icac.org or Dr Greg Constable, CSIRO Plant Industry, Narrabri greg.constable@csiro.au

All papers presented at the World Cotton Research Conference-5 are available free at <http://tinyurl.com/dxuuswx>

ABOVE: Dr Greg Constable (foreground) at work at ACRI with fellow researcher Dr Warwick Stiller. Greg was chosen as the inaugural chair to the Executive Committee of the newly formed International Cotton Researchers Association.

BELOW LEFT: Dr M. Rafiq Chaudhry, Head Technical Information Section, ICAC.

THE INTERNATIONAL COTTON ADVISORY COMMITTEE (ICAC)



Dr M. Rafiq Chaudhry

The ICAC is an association of governments of cotton producing, consuming and trading countries. The Committee was formed in 1939 and the Secretariat was established in 1946 in the US in Washington DC. The annual budget is US\$1.8 million, of which about 85 percent come from government contributions and 15 percent from the sale of subscriptions and participant fees at meetings and seminars. One role of ICAC is to facilitate communications among researchers and bring them together for exchange of information. This is fulfilled through WCRC every four to five years, regional networks and publications. Establishing ICRA will expand that capability and give all cotton research scientists an opportunity to participate more directly.



email us

see our website

AgriRisk Services' John van der Vegt and Susan Maas, CRDC cement a new partnership at the recent Australian Cotton Conference.

HOW WOULD YOU RESPOND?

NSW DPI PATHOLOGIST DR KAREN KIRKBY RECENTLY VISITED THE US TO LEARN MORE ABOUT DIAGNOSIS OF TEXAS ROOT ROT, WHICH HAS DEVASTATING IMPACTS OVESEAS.

“A diagnosis of Texas root rot would be very serious for Australian agriculture,” Karen said.

“Texas root rot is an extremely damaging fungal disease with more than 2000 hosts, including a number of other economically important crops including some legumes, lucerne, grapes, fruit trees and many ornamentals.”

Karen found that in the US, cotton plants initially wilt and then die as the rotted roots are unable to take up enough water. Dead leaves usually remain attached to the plant. Roots are usually covered with a distinctive network of white to tan fungal strands. These dead plants usually appear in patches that may expand as the fungus spreads through the soil from plant to plant.

Growers are the eyes of the industry

Growers are at the frontline in reporting suspect pests and diseases in their crops and early detection gives the industry the best chance of eradicating a pest or disease and minimising its impact.

Growers have access to a free and confidential diagnostic service offered by NSW DPI and DAFF Queensland, and Karen has encouraged growers and consultants to familiarise themselves and their staff with the symptoms of diseases and disorders of Australian cotton.

“*The Cotton Symptoms Guide* is a great resource that is now available in hardcopy from industry agribusiness partners and as an electronic download that can be used on tablets from the *myBMP* website,” she said.

“A new mobile APP is also being developed for field use and release before the end of 2012 which growers and consultants testing this now, and it appears to be well received.”



“TEXAS ROOT ROT IS AN EXTREMELY DAMAGING FUNGAL DISEASE WITH MORE THAN 2000 HOSTS.”

COME CLEAN. GO CLEAN. CAMPAIGN IN FULL SWING

THE INDUSTRY'S “COME CLEAN GO CLEAN” SLOGAN WAS COINED AMID THE INITIAL FUSARIUM OUTBREAK IN THE 1990s.

The industry's specialist in disease and biosecurity information, CRDC's Susan Maas, says those who were growing cotton then would remember the intense campaign waged at the time. Industry understood then that a soil-borne pathogen had the potential to not only impact yield, it also risked property values and neighbourhood relations among farmers.

In advance of the 2012-13 season the industry's Development and Delivery Team (D&D Team) has reiterated the *Come clean. Go clean.* campaign and extended an invitation to insurance company AgriRisk to work with the D&D Team to communicate the importance of best practice farm biosecurity. As a result the *Come clean. Go clean.* campaign is back, and is a top-level priority for the cotton industry in 2012-13.

“The arguments as to why *Come clean. Go clean.* is still important are now broader, but equally clear,” Susan Mass says.

“*Come clean. Go clean.* is about preventing the spread of problems that already exist, such as known soil borne pathogens, and the hard to control weeds including herbicide-resistant weeds.

“Beyond that, it is also about managing the risk of future incursions bearing in mind that once a biosecurity breach occurs and a disease, pest or pathogen is in the country and being spread around, it is too late to suddenly introduce farm biosecurity measures.”

AgriRisk has agreed to produce signage for the farm gate and around the farm yard, and print machinery stickers to alert farmers and

visitors to observe best practice and always put *Come clean. Go clean.* into daily practice.

D&D Marketing Manager, Rohan Boehm worked with Susan Maas and AgriRisk to devise the current campaign.

“*Come clean. Go clean.* will become one of the core messages for the D&D Team in 2012-13,” Rohan said

“Like many successful campaigns and initiatives supported in the past two years, an agribusiness has become involved commercially and practically in supporting the activity.

“It is another great example of how we are working with agribusiness to reach common goals and to apply the leverage best provided by companies already well engaged on farm. Agribusinesses such as AgriRisk have the ‘legs’ that we find it very hard to replicate in the R&D services area.

“Over the next season, the AgriRisk *Come clean. Go clean.* stickers will be visible on tractors, and vehicles in the field.

“Farm gate signs will be reminding operators to stop and clean down before moving to another location. AgriRisk are also generously providing the *Come clean. Go clean.* farm signs to ensure all visitors are aware of the farm's commitment to good farm biosecurity and best practice.”

HOW TO PARTICIPATE

Go to agrisk.com.au to find out how you can get a farm sign or additional stickers. Signage stocks will be limited so get in early for this great opportunity.

For more information about how to come clean go to *myBMP* or www.crdc.com.au to get a copy of the new *Come clean. Go clean* factsheet.

Susan.maas@crdc.com.au



SCENARIO A: LIGHTNING



There were recent electrical storms, the affected area hasn't increased, symptoms haven't progressed and all samples sent away were negative. This was a lightning strike.

SCENARIO B: TEXAS ROOT ROT



The assumed "lightning-damaged" patch is growing larger. Soybeans in the neighbouring field also suddenly die in patches. Symptoms also include distinctive white to tan fungal strands on roots. This is confirmed as Texas root rot by a pathologist.

HYPTHETICAL SCENARIO: TEXAS ROOT ROT INCURSION

CROP CONSULTANTS AUSTRALIA INVITED BIOSECURITY SPECIALIST OFFICERS FROM QUEENSLAND AND NSW TO ADDRESS A BIOSECURITY SCENARIO AT THEIR JULY FORUM.

The scenario brought together the expertise of cotton industry pathologists Dr Linda Smith (DAFF Queensland) and Dr Karen Kirkby (NSW DPI) grains biosecurity officers, Kym McIntyre (DAFF Queensland) and Louise Rossiter (NSW DPI) to discuss with consultants the threats of biosecurity, using a practical example.

"CCA recognised that our members are likely to be first on the scene if there is a biosecurity problem, and so we felt this was an important topic to address," CCA President Matt Holding said.

"When we looked at addressing this topic at the tech update, we were concerned about how it would be received. Our feedback has been extremely positive and members have told us they found it both confronting and practical.

"We are now committed to revisiting this topic in the future.

"Biosecurity includes weeds diseases and insects, so it is as much a part our business as the growers, and we all have a lot to lose if something happens".

DAFF Queensland pathologist Dr Linda Smith gave *Spotlight* some tips on what to do if confronted with such scenario – "It's first thing in the morning. You're driving past one of your fields and you spot a patch of dead plants. How do you determine what it is and what to do?"

"It is important to investigate suspicious areas such as patches of wilting or dead plants. Look closely for unusual symptoms on the leaves and roots," Linda said.

"Resist the urge to immediately remove plants from the field as this may spread the problem. Take a photo and mark the location, so that you can return to sample the plants if required.

"Make a note of the distribution, incidence, and severity of the symptoms, as well

as the crop stage and contact your state cotton pathologist.

"We can advise of the best way to collect and send the samples, and will also ensure that there will be someone available to receive and diagnose the samples that you send.

"All inquiries will be handled confidentially, with results only released to the submitter and, in the case of an exotic pest, the relevant state authority.

"Of course don't forget that upon leaving the field, thoroughly clean down your boots and equipment such as shovels and restrict further access until results are confirmed."

Linda says it is important to remember that in almost all cases the problem will be either an endemic disease or disorder, however it is still important to continue to be vigilant and follow up where you are suspicious.

Emergency response

To ensure the cotton industry is as prepared for an incursion of a new plant pest, Plant Health Australia (PHA) and the cotton industry have developed and published an Industry Biosecurity Plan and a Farm Biosecurity Manual to empower growers with the knowledge and tools required to implement proactive on-farm biosecurity measures.

Brad Siebert of PHA said if Texas root rot was discovered in Australia, as a recognised Emergency Plant Pest (EPP), a response would be initiated under the Emergency Plant Pest Response Deed (EPPRD). EPPRD is a formal, legally binding agreement between PHA, the Australian Government, all state and territory governments and plant industry signatories, including Cotton Australia.

"This agreement commits industry and government to a formal incursion response that includes shared responsibility for deci-

sions and meeting costs of the response together with defined roles and responsibilities of the parties," Brad said.

"Under EPPRD, Cotton Australia has a seat at the decision-making table and will also contribute to the response costs."

Reimbursement to growers

Reimbursement of costs may be available to growers for direct costs incurred in an approved response.

"This financial protection should reduce growers' fears about being disadvantaged from response activities and give them the confidence to report suspicious pests and diseases," Brad said.

"On-ground activities may include setting up quarantine zones, undertaking surveillance and tracing and treatment or destruction of affected crops and equipment."

Brad encourages growers to make farm biosecurity part of their everyday activities.

"These basic practices which include 'Come clean. Go clean' hygiene measures, communicating with visitors and recording equipment movement between properties should be part of the farm routine."

In her new role as CRDC's Disease and Biosecurity Specialist Susan Maas is heading the industry's *Come clean. Go clean.* campaign and is the corporation's representative to PHA which entails building relationships within PHA and helping industry to further consider and manage its biosecurity risks.

To request a copy of the *Cotton Farm Biosecurity Manual*, go to www.cottonaustralia.com.au or Plant Health Australia www.phau.com.au. For information on farm biosecurity www.farmbiosecurity.com.au.

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WASHING DOWN TO KEEP WEEDS DOWN

COME CLEAN. GO CLEAN. IS A VITAL PART OF WEED MANAGEMENT AT ST GEORGE.

Come clean. Go clean. is an industry-wide campaign about managing risk surrounding farm hygiene. Its uptake farm-wide can have very clear and tangible benefits according to Cleave Rogan, a long-time cotton grower from St George.

Cleave said he has found that by applying the principles and practices of *Come clean. Go clean.* to manage not only disease but also stop spreading weeds has become an important part of his day-to-day management.

"We really embraced *Come clean. Go clean.* many years ago," Cleave said.

"I found an emerging weed problem on a farm we were developing on new country so it became clear that our equipment was the only potential source of infestation. With that realisation I decided to take action.

"Initially I implemented a wash-down process with FarmCleanse between fields. Before equipment went on to the next field, it would be blown down and then washed to remove all plant material, including weed seeds. Farm-Cleanse is used in the wash down for disease bio-security.

"This ensured that the management tactics I was using in one area to reduce the seed bank were not being negated by introduction of new seeds.

"We are now at the stage where we have fields divided into management units. We insist on clean downs between these management areas.

This, as part of a wider farm hygiene and weed management strategy, has enabled us to keep on top of any weed infestations.

Cleave recognises that *Come clean. Go clean.* is not always convenient.

"There is nothing like impending rain to really make you question your resolve about clean down, however the benefits speak for themselves," he said.

Good farm hygiene within a weed management strategy is promoted by Ian Taylor in his role as D&D Team Manager and as leader of industry's integrated weed management (IWM) campaigns.

"The industry spends a lot of time



WHAT'S BEST PRACTICE?

IN ADDITION TO THOROUGH WASH-DOWN OF VEHICLES AND EQUIPMENT, THE INDUSTRY'S INTEGRATED WEED MANAGEMENT BEST PRACTICE RECOMMENDS ADDITIONAL FARM HYGIENE TACTICS TO PREVENT WEED SPREAD.

- Familiarise, and note existing weed species on your farm. This will be the key first step in identifying anything different
- Encourage staff to stay alert. Staff should report any new infestations of weeds
- Regularly monitor the main risk areas. Typically, these are roadways, farmyards, wash down areas and river and channel banks
- Monitor the results from spray applications. New weed seeds introduced onto your farm may be herbicide resistant
- Request a written Weed Hygiene Declaration on any introduced equipment and vehicles. These units have great potential to be contaminated with weed seeds
- To obtain your *Come clean. Go clean.* farm signage kit and machinery stickers, go to the *myBMP* website www.mybmp.com.au or agririsk.com.au

and money on trying to reduce weed seed banks to prevent herbicide resistance. All this effort can be undone if *Come clean. Go clean.* is not part of everyday management," Ian said.

"Not only does the introduction of new weed seeds contribute to an existing problem, importantly, introduced weed seeds can be a hidden source of new and difficult-to-control weeds.

"Cotton seed purchased in the Australian cotton industry is certified to be free from disease. However cotton pests as well as weed seeds may be bought onto the property with seed from other crops.

"Ensure seed for alternate crops is

also from a reputable source, preferably with certification.

"Even introduction of existing weed species can introduce further problems.

"There have been a number of cases where herbicide resistance has been transported on to farms.

"Herbicide resistance can increase weed control costs dramatically. *Come clean. Go clean.* is essential in preventing additional weed problems".

More information

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St George grower and cotton industry advocate Cleave Rogan has seen first-hand the benefits of applying the *Come clean. Go clean.* protocol within his farm between paddocks.



IMPROVING COMMUNICATION THROUGH INDUSTRY PARTNERSHIP



Linda Smith (DAFF Queensland), Beth Cooper (NSW DPI), Karen Kirkby (NSW DPI), John Lehane (DAFF Queensland), Peter Lonergan (NSW DPI) and Stephen Allen (CSD) are experts in diseases and disorders of cotton in Australia.

NSW DPI COTTON PATHOLOGIST DR KAREN KIRKBY HAS A PARTICULAR INTEREST IN IMPROVING COMMUNICATION BETWEEN RESEARCHERS, GROWERS, EXTENSION AND STAKEHOLDERS.

Karen has developed “PathWAY” which enables disease enquiries to industry staff from growers and consultants to be captured and quantified as they occur within the cotton industry. The system facilitates a confidential and co-ordinated approach to grower concerns while at the same time quantifying disease issues and responses.

The system is already providing benefits, with many enquiries and replies already occurring.

“Currently within the industry, many different people receive enquiries about cotton diseases and unfortunately, sometimes this can cause confusion about who has responded to the query,” Karen said.

“PathWAY is a transparent model, allowing the network to see what the latest issues are and who has responded.”

Data collected through PathWAY will be added to a database where the information is collated and made available to the wider cotton industry through extension, publications and new research initiated.

Linking networks

PathWAY works behind the scenes linking a network of cotton professionals across agencies, borders and funding bodies including representatives from NSW DPI, CSD, DAFF Queensland, CRDC, CSIRO and Cotton Australia.

Growers are still able and encouraged to forward their cotton disease enquiries to their preferred contact whether that is a consultant, pathologist, virologist or extension.

“This collaborative network facilitates a co-ordinated approach to grower concerns whilst at the same time quantifies disease issues and responses,” Karen said.

“This data can then be added to a database where the information is made available to the wider cotton industry through extension, publications and new research initiated.

“The involvement of pathologists, virologists, researchers, extension, consultants, and funding body representatives in PathWAY has been very positive.

“It is important that growers know that cotton professionals are continually looking to improve the way they respond to grower concerns. PathWAY is an example of how collaboration can make a difference.”

Future leaders inspiration

Karen is a participant in the Future Cotton Leaders Program, which she says has given her the inspiration and know-how to go ahead with this project.

“The skills I learned through the Future Cotton Leaders Program helped me to develop and implement PathWAY,” she said.

“I would whole-heartedly encour-

FARM BIOSECURITY – WHAT YOU NEED TO DO:

- Do not allow dirty vehicles carrying on or off your farm and be willing to get out and inspect. Clean means removal of ALL plant and soil material.
- Have clear signage to ensure that all visitors are aware the farm's requirement to *Come clean. Go clean.*
- Provide access to a wash-down pad with access to high pressure water and FarmCleanse. Also provide scrubbing brushes and footbaths for boots and in-field equipment such as shovels.
- Communicate requirements to contractors.
- Minimise driving in muddy conditions.
- Ensure seed including for rotation and refuge crops, is from a reputable source, preferably with certification.
- Come Clean Go Clean requires a whole of farm approach, apply the same efforts to equipment for other crops that you would do for cotton.

For more information – Farm biosecurity manual available from Cotton Australia or go to www.farmbiosecurity.com.au

age anyone in the industry to consider applying to become part of the next Future Cotton Leaders Program as it allowed me to make contacts, opening up doors and helped to build my profile within the cotton industry. You get out of this program what you are prepared to put into it.

“Tasking participants with a project that will ultimately benefit the cotton industry was an excellent way of ensuring that we as participants implemented the skills we learned through the course of the program.

“This was the inspiration behind PathWAY.”

For more information

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email us



NEW LOOK IRMS:

FIRST PLACE TO GO WHEN SELECTING A SPRAY

THE INSECTICIDE RESISTANCE MANAGEMENT STRATEGY (IRMS) HAS UNDERGONE SOME MAJOR CHANGES FOR THIS SEASON DUE TO INCREASING RESISTANCE THREAT AMONG PESTS TO INSECTICIDES.



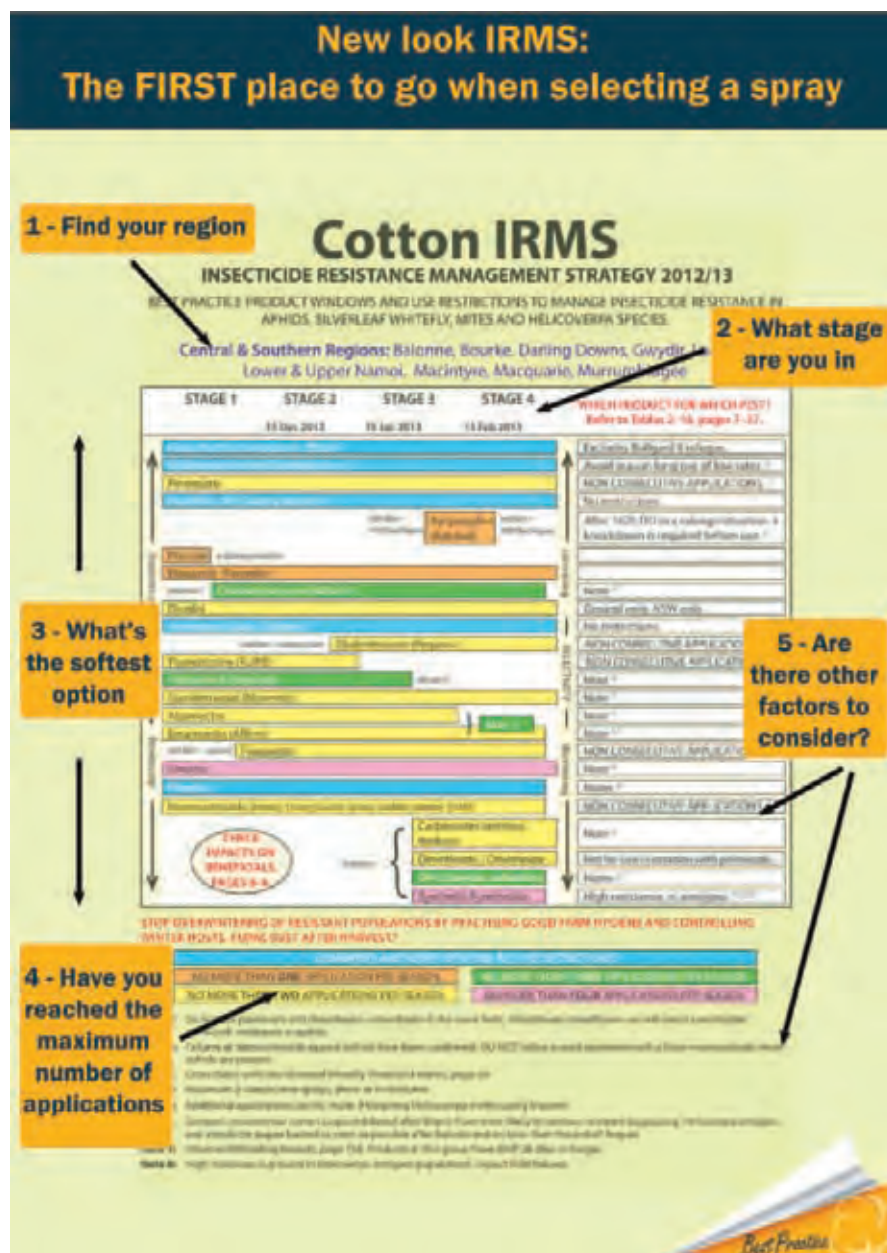
Sally Ceeney is the newly appointed Bt and Insecticide Stewardship Specialist for the Australian Cotton Industry D&D Team and has good advice for growers and consultants when using the new IRMS.

The principles underlying the IRMS are all about practising good Integrated Pest Management (IPM) across the whole farming system. The IRMS now includes all insecticides commercially available for use in cotton, and as such should be consulted for every insecticide/miticide decision by growers and consultants.

Sally Ceeney is the newly appointed Bt and Insecticide Stewardship Specialist for the Australian Cotton Industry D&D Team and says the changes have been made to address the risks of resistance in pests that are not the primary target of an insecticide application. As a result, the IRMS is highly relevant to insecticide use on Bollgard II cotton.

Sally said the IRMS aims to assist users to manage resistance in pest populations in three key ways.

"In addition to lowering the risk of inadvertent selection of resistance in pests that are not the primary target of the insecticide application the IRMS also works to delay the evolution of pest resistance to key chemical groups by minimising the survival of individuals with resistance; and managing entrenched resistance problems such as the now widespread resistance in cotton aphids to neonicotinoids," she said.



Key changes

In addition to a new layout, important changes to the IRMS include:

- Earlier Indoxacarb (Steward) window to Stages 1&2, which provides

an early season 'soft option' helio-cide to replace endosulfan.

"Please be aware that this results in a continuous window from chickpeas into cotton," Sally says. "The no use window at the end of the cotton season will be more effective if use in other summer crops (azuki beans, mung-beans and soybeans) is limited in late summer-autumn."

- Shortening of the synthetic pyrethroid (SP) window in southern NSW has resulted in combined Southern and Central IRMS.

"*Helicoverpa armigera* resistance frequencies to SPs have increased significantly from last season, with bifenthrin resistance increasing from eight to 39 percent and fenvalerate resistance now at 90 percent," Sally warns.

"Field failures should be expected with all SP products."

- There is now a season-long window

HOW TO USE THE 2012/13 IRMS

REGION. There are now two IRMS regions. Central and Southern Regions have been combined. The Northern Region covers Central Queensland and stage dates accounts for the early planting and quicker crop development.

STAGE. The dates shown on the strategy charts are for the start of each stage (eg 15 December 2012 start of Stage 2 for Central & Southern region IRMS). For those individual insecticides and miticides which start or end outside window boundaries, the start and/or end dates are listed.

SELECTIVITY. The products listed in the IRMS are listed in order of decreasing selectivity (or IPM 'friendliness'). For all pest species, aim to use the most selective option in the window first, delaying the use of broad spectrum insecticides for as long as possible.

USE RESTRICTIONS. Colours in the table now represent the maximum number of applications per crop per season for any given product.



IPM Monitoring pest and beneficial populations is the first step in a successful IPM strategy.

STEPS TO A SUCCESSFUL IPM STRATEGY

1. Monitor pest and beneficial populations.
2. Use recommended thresholds for all pests.
3. Monitor fruit retention.
4. Comply with all directions for use on product labels.
5. Avoid repeated applications of products from the same insecticide group, even when targeting different pests. Rotate between groups.
6. Do not respray an apparent failure with the same product or another product from the same insecticide group. Rotate to a different group.
7. For all pest species, aim to use the most selective insecticide options first, delaying the use of broad spectrum insecticides for as long as possible.
8. Control weeds and cotton volunteers in fields and around the farm all year to minimise pest hosts.
9. Pupae bust cotton as soon as possible after harvest.

for pirimicarb and further restriction of dimethoate. "Neonicotinoid resistance in cotton aphids remains at high levels and there are limited 'soft options' for aphid control," Sally said.

"Use of dimethoate selects for pirimicarb resistance in aphids (cross-resistance). To provide more flexibility for pirimicarb use, a season long window with exclusive use per field (i.e not in the same fields as dimethoate) has been allowed."

The maximum of two applications of pirimicarb per season continues.

- Removal of end dates for the emamectin (Affirm) and chlorantraniprole (Altacor) windows provides selective helioicide options late season. Note that the recommended number of applications per season for each product remains unchanged.

CHANGING SEASONS MEANS CHANGING INFORMATION

THE 2012/13 COTTON PEST MANAGEMENT GUIDE IS THE MOST UP-TO-DATE HANDBOOK FOR BEST PRACTICE FOR PESTS, WEEDS, DISEASES, BIOSECURITY AND SPRAY APPLICATION.

The issues facing growers and consultants are in a continuous state of flux and the guide reflects this, with new information relating to issues for the coming season.

"Increasing reliance on glyphosate is a concern, and the key tactics for resistance prevention/management are incorporated into this publication," editor Susan Maas said.

"The weed section has some incredibly useful new tables, that typifies the strong collaborations that goes into pulling this publication together."

If confused about the double knock tactic, ICAN has worked with a team of weed agronomists to produce a table with recommended double knock intervals for a range of combinations. If considering tillage to manage a growing fleabane problem, DAFF Queensland have summarised recent trial work on the effect of the tillage type on emergence of this notorious weed is outlined.

"It is also imperative that users know that any of the products listed as herbicides available for use in pigeon pea are under a permit due to expire on Oct 11 2012 and after this date go to www.apvma.gov.au to ensure usage is permitted.

"Key pest section updates include additional comparison photos



to help with identification, and the green vegetable bug section includes comparative damage for other less common stink bugs," Susan said.

"In addition to modifications to the silverleaf whitefly (SLW) threshold matrix, there is a new case study included to help inform decisions for mass immigrations of SLW not covered by the matrix."

With the recent wetter seasons, there has been a resurgence of some cotton diseases, which growers and consultants should be aware of and these are outlined in the 2011/12 pathology survey.

Insecticide Resistance Management Strategy (IRMS) has a completely new-look and now includes all commercially available insecticide and miticide products registered for use in cotton. It is now the first place to go when selecting a pest control spray. Go to the resistance section for each of the key pests to find out more about their resistance status.

The Resistance Management Plan section is a must-read as there are changes to the plan and an update on the current Bt resistance situation.

Neonicotinoid resistance in cotton aphids remains at high levels and there are limited 'soft options' for their control.



To obtain a copy go to www.crdc.com.au



BUYING IN BUGS

USING BENEFICIAL INSECTS INSTEAD OF CHEMICAL SPRAYS TO CONTROL COTTON PESTS SUCH AS THE MEALYBUG HAS PROVED TO BE A SUCCESS STORY FOR EMERALD AGRONOMIST AND GROWER RENEE ANDERSON.

Renee Anderson has purchased green lacewing larvae and *cryptolaemus* lady beetle larvae which are distributed in crops to attack mealybug.

To boost the predator to pest ratio on her 550-acre farm “Kerry Downs”, Renee trialled the use of beneficials (insects which predate cotton pest insects) over two years to control mealybugs and says she “hasn’t looked back”.

“As well as the benefits of a suppressed mealybug population, there is the added flow on benefits of controlling other pests including heliothis eggs, small caterpillars, mirid nymphs, whitefly, jassids, aphids and mites,” Renee said.

“This generally results in a reduction of sprays for these other pests too, which can only be good for pest management and the environment.”

Last season Kerry Downs had only one application of pesticides to two fields. The remainder of the farm was unsprayed.

This approach has given Renee the courage to use higher insect pest thresholds, for example, the decision to delay a spray for mirids that are above threshold is also influenced by whether plant damage is occurring.

Renee has largely used green

lacewing larvae and *cryptolaemus* lady beetle larvae distributed in crops to attack mealybug, which produce large amounts of honeydew on which sooty moulds grow, in large numbers they can also suck the plant so that only a stalk remains. They take about three weeks to reach maturity in summer, producing up to 500 eggs in a white woolly egg mass. Mealybugs are difficult to control with pesticides, due to their waxy covering and their habit of infesting sheltered plant parts. They also readily develop resistance to pesticides.

Targeting hotspots

“Our strategy is to target an initial mealybug hot spot, to try to slow the pest population growth. This hopefully delays or prevents the pest from flaring and creating yield damage,” Renee explained.

Renee started trials on her farm after *Solenopsis* mealybug became a problem in the Central Highlands in November 2009.

“Insecticides were found to be generally ineffective on this pest, and in fact flared the pest populations,” Renee said.

“Where ‘harder’ chemistry was used on other properties, fields required multiple applications regularly just to keep the population in check, this can become a very costly exercise and puts a lot of pressure on those growers to continue their spray regime.

“The answer for our farm was to continue to use and monitor the beneficials, which were found to be the most effective control against this pest and increase numbers where hotspots were occurring.”

Initial setbacks

Renee did have some initial setbacks, as there was a lag period from when the pest population peaked to when the

beneficial population was able to catch up. Apart from the costs, and some of the logistics, there are added problems such as delays in the post or issues with the breeding cycle.

“The method can be a little costly and time consuming as I need to walk through the crop for at least four to five hours and gently place the larvae in the crop to make sure they will work effectively.

“Once we have committed to this process, it affects any future decisions to spray other pests, as insecticides will impact on the survival of the beneficials.

“We buy lacewing in larval form and they feed on juvenile mealy bugs, while the *cryptolaemus* in larval form attacks the adult mealy bugs.

Renee sources the thousands of green lacewing larvae and *cryptolaemus* they use through the company Bugs for Bugs at Munduberra. Female lacewings live for approximately three or four weeks and lay up to 600 eggs.

“Lacewings are dispatched as eggs and hatch into the larval stage during transit. For large areas, we need a minimum of 2000 to 5000 lacewings per hectare and a minimum 1000 *cryptolaemus* beetles per hectare,” Renee said.

So despite some drawbacks, Renee is very happy with the success of the trials.

“Although we have done these trials for two years, this is relatively new in the cotton industry, though it has been widely used in other areas particularly in horticulture. We have found using beneficials is an important part of pest management and now it is very rare that we apply chemistry.”

Renee Anderson
renee@cotton.org.au

email us

Green lacewing larvae camouflage themselves with the bodies of dead prey which they place on their backs – in this case mealybugs, but they are general predators and feed on other insects such as aphids, thrips and mites to name a few.



PAUL GRUNDY

BEATING THE THREAT OF RESISTANT WEEDS

According to D&D Team Manager, CRDC's Ian Taylor, one of the most concerning aspects of resistance development in the north is the rate at which populations are developing resistance to glyphosate.

Recent surveys undertaken by Tony Cook from NSW DPI indicate that 44 percent of randomly sampled awnless barnyard grass (*Echinochloa colona*) is resistant to glyphosate with 57 populations being confirmed as resistant to glyphosate in Northern NSW and South East Queensland. Five weed species are now known to be resistant to glyphosate throughout the northern growing region including flaxleaf fleabane (43 populations), windmill grass (three populations), liverseed grass (three populations), awnless barnyard grass (57 populations) and annual ryegrass with numerous populations known to exist.

"Associate Professor Chris Preston who chairs the Australian Glyphosate Sustainability Working Group has graphed the development of glyphosate resistance in summer weed species from 2007 to 2012 (Fig. 1)," Ian said.

"In addition to this concerning trend, in his presentation at the recent Cotton Conference, Professor Stephen Powles from Australian Herbicide Resistance Initiative (AHRI) stated that 'glyphosate is the world's most valuable herbicide with sales from glyphosate being greater than the combined sales of the next 10 most widely used herbicides'.

"Protecting this herbicide therefore should be one of our most important aims as we are unlikely to see another herbicide as effective as glyphosate in our lifetimes."

Calculating risk

To delay the likely evolution of resistance growers should evaluate their current farming practices to understand whether weed management systems in place are exacerbating resistance risk then implement a sound Integrated Weed Management (IWM) plan to mitigate these risks.

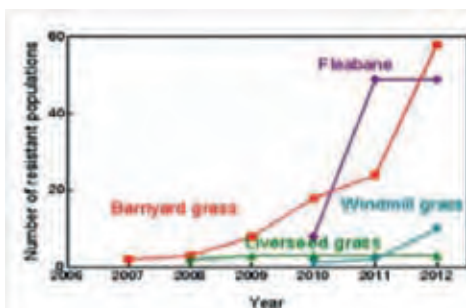


Figure 1. Rate of development of glyphosate resistance in key summer weeds demonstrates the rapid changes in glyphosate susceptibility in key weeds within our region and is cause for concern as the sustainability of our farming systems, particularly zero till, is highly reliant on glyphosate for weed management. (Graph courtesy C Preston, Australian Glyphosate Sustainability Working Group 2012)

GLYPHOSATE RESISTANCE IS A RAPIDLY EVOLVING ISSUE FOR FARMERS IN THE NORTHERN COTTON AND GRAIN PRODUCTION REGIONS.

The most concerning aspects of resistance development in Northern NSW and South East Queensland is the rate at which populations are developing resistance to glyphosate.

David Thornby and Jeff Werth, from Queensland Department of Agriculture, Fisheries and Forestry developed the Glyphosate Resistance Risk Assessment Tool which enables growers to rate their fields in terms of risk. This tool is available at www.daff.qld.gov.au/- Online Glyphosate Resistance Toolkit.

Think today for the future

IWM aims to manage today's weed problems in a manner that reduces the potential for weed problems in the future. An IWM program uses a range of methods of weed control in combination, so that all weeds are controlled by at least one tactic in the weed management system. In short, IWM is about not relying on only one or two methods of weed control alone, and in particular it does not involve relying only on herbicides. There are five key principles in developing an IWM plan:

- Know the weed spectrum and aim for maximum weed control
- Stop seed set, actively manage the seed-bank and control survivors to prevent replenishment
- Monitor and respond to the success of your control tactics
- Treat weed flushes with a diversity of in-crop and fallow management tactics
- Don't automatically reach for glyphosate – think longer term

Effectively managing weeds using an inte-

grated program for the entirety of the cropping rotation will reduce:

- Rate of shift in weed spectrum towards more herbicide tolerant weeds
- Risk of selecting herbicide resistant weeds and so prolong the useful life of each herbicide
- Future weed control costs by reducing the number of weed seeds in the soil seed bank
- Competitiveness of weeds and improve crop productivity each year.

Managing resistant populations

"It would be fair to say that many growers in Australia, particularly those in southern and western farming systems in SA and WA, are successfully managing herbicide resistance and rarely would herbicide resistance be the main cause of a farm going out of business," Ian said.

"However, growers having to manage resistance would in the majority of cases prefer not to have had resistance on their farms in the first place and the complexity of management increases substantially.

"Herbicide resistance is not a death sentence and can be managed, but increases the cost and complexity of weed management inputs. Preventing herbicide resistance emerging is a sound management strategy."

Ian Taylor D&D Team Manager – ian.taylor@crdc.com.au

email us

HELP IS AT HAND FOR GROWERS AND CONSULTANTS TO BETTER MANAGE THEIR CROPS.

SIGN ON TO A WORLD OF INFORMATION AT WWW.COTTASSIST

Growing cotton can often involve making many difficult and complex decisions. To help with these decisions, crop managers across Australia have free access to a continually-updated set of web tools.

The CottASSIST tools were developed by CSIRO Plant Industry, the Cotton Catchment Communities CRC and CRDC. These tools can help growers and consultants refine their management decisions by analysing specific crop information using the latest climate data and knowledge generated through research.

In keeping with the changing face of information technology CottASSIST is now available to use on all internet browsers such as Google Chrome, Safari, Firefox and Internet Explorer. This means that CottASSIST can now be used on a larger range of mobile devices.

The first step to using the CottASSIST tools is to register for a free account, which enables the user to access all CottASSIST tools and their features and also provides the ability to save and retrieve their own data.

CottASSIST will soon be integrated with *myBMP* to develop a seamless connection between the two systems. In future a *myBMP* user who uses CottASSIST may be automatically credited for many of the *myBMP* practices.

Crop Development Tool (CDT)

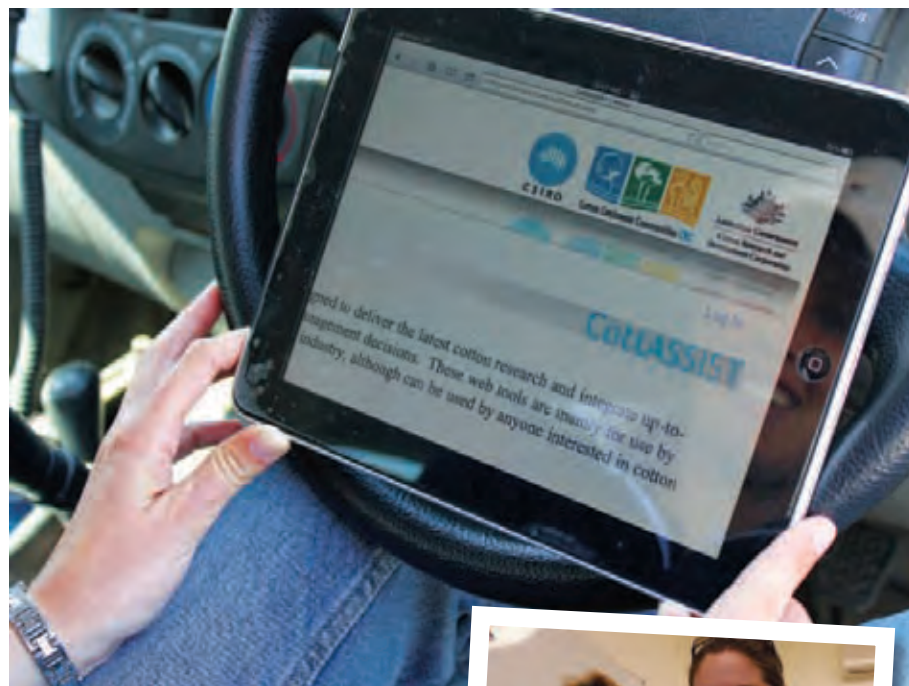
Cotton development can be predicted using daily temperature data (day degrees). The CDT uses this to enable crop managers to check the vegetative and reproductive growth of crops compared to expected rates of growth and development under those conditions. This information can be used to further explore why the crop may or may not be on track and then manage accordingly.

Day Degree Report

Keeping track of day degree accumulation is widely used to identify the progress towards a cotton development stage (eg first square (a flower bud), first flower). The Day Degree Report predicts crop progress through the season using local weather data and sowing time and compares progress with other years using historical climate data.

Last Effective Flower Tool (LEFT)

This tool predicts the date after which a flower is no longer likely to have suf-



RIGHT: System developer Loretta Clancy and Sandra Williams of CSIRO.

ficient time to complete development into an open boll. Predicting this date can be used to manage a cotton crop to ensure harvest timeliness to avoid wet and cool weather which is important for picking good quality cotton.

Helicoverpa Diapause Induction and Emergence Tool (DIET)

Using local daylength and temperature data, the DIET can predict the percentage of *Helicoverpa armigera* pupae going into diapause and also when these are likely to emerge as moths. This information can be used to refine decisions for effective pupae busting.

Aphid and Mite Yield Loss Estimators

These tools allow the user to enter current Aphid or Mite samples to estimate a rate of pest increase and the potential effect on yield. This allows crop managers to 'look ahead' to decide if these pests require control or if natural enemy populations are providing sufficient control.

NutriLOGIC

NutriLOGIC uses information collected from soil, petiole, and leaf tests to interpret levels of major nutrients needed for production to generate optimal fertiliser recommendations. This tool can help interpret the in-crop N status from petiole tests and the status of all major and minor nutrients from leaf tests.



Seasonal Climate Analysis

This tool can help analyse seasonal variability or regional influences on crop performance by comparing rainfall, day degrees, number of cold and hot days with long term averages and probabilities.

Silverleaf Whitefly (SLW) Threshold tool

This tool allows users to enter regular sampling information to track the development of SLW populations over time. The tool then compares these populations with the control thresholds, which are based on the pest population size, day degrees and crop stage.

Water Quality Calculator

A potential impact on cotton yield is poor quality water. This tool helps calculate the water quality resulting from mixing water from different sources and highlights the potential impact that this water quality may have on cotton yield.

To use CottASSIST go to www.cottassist.cottoncrc.org.au or for more information contact Loretta.Clancy@csiro.au 02 6799 1547 Sandra.Williams@csiro.au 02 6799 1585

see our website

email us

READ UP BEFORE HEADING NORTH

The Burdekin is Australia's largest tropical irrigation region and is home to a vibrant agricultural industry – it also becoming an additional home of the cotton industry, thanks to a commitment to local research combined with trials by the region's farmers.

Cotton has the potential to be highly profitable although it requires a high degree of management skill as this system is intensive with short turnaround times at the end of each crop cycle.

Growing cotton in the Burdekin region has its benefits. A significant proportion of the bales produced in the region have been of a premium grade. The climate is warm enough to allow cotton production as part of a continuous cropping program with other rotation crops.

Cotton can be grown in between sugarcane crops during the usual summer bare fallow period which is every four to five years. The geographic spread of the catchment ensures the high reliability of the region's irrigation infrastructure with an estimated supply of full irrigation allocation in 95 percent of seasons.

While grower interest, land and water resources and transgenic varieties are key ingredients for a future cotton industry, historical experience from northern Australia has shown that new industries have a high likelihood of failure, particularly if not preceded by R&D that seeks to understand local factors and tailor produc-



tion systems accordingly.

The publication of *NORpak Cotton production and management guidelines for the Burdekin and north Queensland coastal dry tropics region 2012* stands as testament to the industry's R&D in this new region.

NORpak documents the knowledge derived from the collaborative work undertaken by the Cotton CRC, CRDC, CSIRO, DAFF Queensland, pioneer growers and agribusiness in the Burdekin. It also serves as a testament to the diverse research, development and extension skills of Dr Paul Grundy of DAFF Queensland and Dr Stephen Yeates of CSIRO.

"For the Burdekin where pests and weeds have historically been problematic, and the region's extensive coastal

wetlands and the Great Barrier Reef, preclude high pesticide input conventional production systems, the advent of transgenic varieties allow cotton production to be considered," Stephen said.

The biggest challenge for Burdekin cotton growers is wetter than average seasons.

"Because the lack of sunshine can limit potential yields, tailoring management techniques to local conditions becomes critical in maximising the success of your crop," he said.

"The research in the last five years has focused on understanding the growth of the crop and then developing management options to minimise the impact of cloud during boll growth.

"This research shows the region can indeed produce good cotton yields and exceptional fibre quality, particularly when autumn conditions are dry and sunny.

"NORpak distils the knowledge obtained to date into a 'how to' guide for new growers."

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At the launch of NORpak in the Burdekin were farmers Layton and Sheree McDonald, former Cotton CRC CEO Philip Armytage, farmer Lyndsay Hall, Paul Grundy, Steve Yeates, Cotton Australia Director Andrew Parkes, local farmers Wayne Dalsanto, Jeff Marson and Barry Bredsall.



"EXCELLENT FIBRE QUALITY IS A CONSISTENT CHARACTERISTIC OF THE COTTON AND THIS 'HOW-TO-GROW' GUIDE HAS BEEN PRODUCED TO CAPITALISE ON THIS."

TOOLS OF THE TRADE ARE TAILOR-MADE

Cotton Industry Development and Delivery Team publications and resources are tailor-made tools for growers and consultants. New publications in 2012 include the *Australian Cotton Production Manual 2012* and the *Pest Management Guide 2012-13* – which are comprehensively updated on an annual basis by industry's R&D knowledge specialists. *NORpak Cotton production and management guidelines for the Burdekin and north Queensland coastal dry tropics region 2012* and the *Australian Cotton Water Story* are also new this year.

Last year's release of the *Cotton Symptoms Guide* and *Pests and Beneficials in Australian Cotton Landscapes* were very well

received across the industry and have become staple reading for all growers, regardless of experience levels, consultants and students. All these publications are available in hard copy or can be downloaded electronically, free of charge to industry people (Spotlight readers) and are compatible with mobile tablets. The Cotton CRC website will remain active for around two years offering access to a plethora of information, older publications, fact sheets and research. For all current publications and fact sheets visit CRDC's website for links to information and research. To order hard copies of these industry publications contact David Larsen 02 6799 1534 david.larsen@dpi.nsw.gov.au

UNDERSTANDING WORKFORCE NEEDS



A RECENTLY INITIATED CRDC PROJECT IS ALREADY PROVIDING INSIGHT INTO WORKFORCE ISSUES IN THE COTTON INDUSTRY.

The aim of the “Innovative Work: cotton workforce development for sustained competitive advantage” research project is to help the cotton industry better understand and address its workforce needs over time. The initial phase of the work is examining how people are currently attracted, retained and developed in the sector and what is working and why.

The industry steering group, established to ensure the research and development efforts in this project match with industry needs, has provided substantial support and well-received advice. This has led to the selection of two case study cotton production valleys (Emerald and Gwydir) for intensive data collection and exploration of the link between local labour markets and cotton workforce issues.

The research team, led by Associate Professor Ruth Nettle, were recently in Emerald conducting interviews with

a range of people, including growers, processors and contractors as well employees, farm advisors, educators, labour hire firms and key community groups with an interest in addressing cotton workforce issues. Ruth said addressing cotton workforce issues

requires an understanding of the issues in a local context.

“In Emerald, we understand the minerals development boom has a strong influence on the local labour market,” Ruth said.

“However the flooding in early 2012 followed by years of drought and the large increase in cotton production has also impacted cotton workforce demand creating a ‘perfect storm’ in a workforce availability sense.

“Although it is early days in the research, the current trap we identify is for the industry to think ‘it’ll be right’ once this critical time has passed or when next season comes.”

The recent past has created a ‘missing middle’ of younger, semi-skilled and experienced people available for agricultural work in general and for cotton growers and the entire production chain there is a shortage of skilled, experienced workers and assistant managers. Consequently there is reliance on a limited number of experienced and skilled workers, some near retirement, but predominantly on unskilled casual labour, typically backpackers.

The researchers have identified labour shortages across the supply chain in cotton, from farms through to support industries including ginning and also found that labour shortages are not just in cotton – it is a regional problem.

“Grazing, the largest agricultural industry in the (Emerald) area is also experiencing labour shortages, as are industries such as engineering and mechanical maintenance, but it extends also to difficulties in attracting retail staff,” Ruth said.

“Flow-on effects from the rapid minerals development that create additional barriers for recruitment are the shortage and high cost of town accommodation and poor access to basic services such as health and child care.”

A key challenge with recruitment is the comparatively high salaries paid by mines or mining contrac-

ABOVE: Will Kirkby with son George and Warren Smyth, from Ireland, who has been working with the Kirkbys north of Moree.

RIGHT: The University of Melbourne’s Ruth Nettle, along with Sally Wright (The Sydney University) and Jennifer Moffat (The University of Melbourne) have already surveyed cotton industry sectors in the Emerald district in QLD and Gwydir Valley NSW.



tors, which agricultural industries are unable to match, despite the majority being able to offer on-farm accommodation as part of a package. The study found this has meant many employers have shifted their focus to retaining current employees, and encouraging seasonal workforces to return.

While backpackers fill a gap they are not considered to be a long term solution. Some farmers have sponsored people from overseas, however the many challenges including costs, a lengthy process and much paperwork, have made this an appealing solution for small numbers of people.

Furthermore, some farmers have found themselves to be 'stepping stones' for young men who initially move to the area with agricultural employment, but when sufficiently skilled move on to mine/mine contractor employment. However there were reports of people returning to agriculture after having found mining employment.

"Due to these short and longer term challenges in what is a very tight employment market with approximately two percent unemployment, we found evidence of stress, fatigue and burn out across the sector (farming, services, ginning) and among owners, managers and employees," Ruth said.

"This has been exacerbated by the long season due to flooding earlier in 2012 which created a longer growing season and extended harvest period. A prime concern for cotton growers is the decreased productivity resulting from these workforce issues."

The study has found that regional workforce issues are not new for Emerald, and there have been attempts to address the issue at the regional level and local government is currently working in the area. There is continuing energy and interest in seeking a solution to the issue.

"Being part of a regional approach to workforce development is an important consideration for the cotton industry," Ruth said.

"Our project methodology will explore what a co-ordinated approach between the cotton industry, other agricultural industries and the community could look like to address workforce development priorities."

The next stage of the project include conducting a similar study in the Gwydir Valley; a workforce survey of cotton producers in both Emerald and Gwydir; and labour market analysis for all cotton production valleys using available Census data. Following this stage, industry workforce strategies will be considered.

Further information
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Warren Smyth – from Belfast to Brigalow and happy to be here.

FROM BELFAST TO “BRIGALOW”: AND LOVING IT

OFTEN BACKPACKERS ARE CONSIDERED BY EMPLOYERS AS UNEDUCATED, FOOTLOOSE AND “THROW AWAY” OR SHORT-TERM LABOUR OPTIONS WHO ARE NOT REALLY WORTH TRAINING, HOWEVER IF THEY MADE TO FEEL VALUED, IT CAN REAP REWARDS FOR THEIR EMPLOYERS, AS MELANIE JENSON FOUND OUT.

Warren Smyth is a 30-year-old personal trainer from, Belfast, Ireland who is working at Will and Sarah Kirkby's "Brigalow" north of Moree. He's one of many backpackers working in the district and is travelling with a friend Paddy Weatherup who is a qualified electrician.

Previous to coming to Moree the lads were working near Bundaberg in QLD and said they don't mind hard work but often backpackers are treated like slave labour, with few rewards, so they don't stay in those jobs very long. They have found working for the Kirkbys a lot different and have been preparing cotton country for planting.

"We are doing something entirely different working on a cotton farm. We're learning new skills here, we're paid well and we are getting the hours up – so we are happy," Warren said.

"The best thing is here we feel like an employee not a backpacker.

"We've got a good place to stay and feel like we are making a real contribution.

"Some places you wouldn't get to know the owner at all. They just hand out the orders. Here we know the owner and his family, the kids – it makes you feel part of a family."

Even better for the Kirkbys their investment in the travellers may pay off next year as the Warren is keen to come back Brigalow after travelling over the Christmas period.

This is the first time they have employed backpackers and Will says the situation sits well with him for his operation as a largely dryland

farmer and opportunity irrigator, so would not be practical to have on-farm, full time, permanent staff.

"My situation as a cotton grower is different to a full-time irrigator as I can't really ensure long-term employment because I don't have the water security.

"You wouldn't want to, for example, have a family move out here to only to have the work run out after a season, so the backpacker option has been a good one for us."

Will said while the lads had no previous experience in cotton they have a willingness to learn.

"You probably wouldn't put them on a spray rig or planting cotton, but on the other hand in the month they've been here they've (for example) mastered the guidance system in the tractors and understand more about broad acre farming and cotton.

"You've got to take into account that everything they do is new to them, so when I ask them to do something I tell them 'why' we are doing it and why doing it a certain way."

Warren said this approach is a welcome one.

"As opposed to being given orders, if you know your purpose and what you are doing a particular job for you put everything into it."

"I think this does make them feel more part of the team and more valued because they feel included," Will says.

"If people feel valued and part of a team they are more productive."

STUDY PROMOTES BETTER UNDERSTANDING

INDUSTRY IS CALLING ON GROWERS TO PARTICIPATE IN THE 2012/13 IRRIGATION STUDY.

The largest benchmarking study for water use in the cotton industry since 2009 will get underway this season, giving the industry an up-to-date snapshot of efficiency.

The industry has funded the collection of irrigation benchmarking data in various studies since 1997, however, it wasn't until the development of Watertrack Rapid, that defined and standardised benchmarks have been obtained for meaningful comparison between farms, regions and seasons. The on-line benchmarking program not only calculates a range of standardised performance indicators, but evaluates crop water use and estimates on farm water losses.

NSW Department of Primary Industries (NSW DPI) first used Watertrack Rapid to obtain irrigation benchmarks for the Australian cotton industry for the 2006/07 cotton season. The data collected showed a significant increase in Gross Production Water Use Index at the farm scale (GPWUIfarm) of around 40 percent since the last collection of irrigation data 10 years previously. This survey was repeated in 2008/09 confirming the 40 percent increase in GPWUIfarm.

NSW DPI's Janelle Montgomery was part of the team who undertook the surveys and again involved in the current study.

"The previous surveys took place in years when water availability was low along with relatively low cotton prices," Janelle said.



NSW DPI's Janelle Montgomery has much experience benchmarking water use in the cotton industry and is helping steer the current study.

"As a result the area planted to cotton was significantly smaller.

"There has been a significant turn-around in recent years with full storage dams and record plantings.

"The 2012/13 benchmarks are important to also see how efficiently Australian cotton irrigators are managing water when their farms are in full production."

The 2012/13 benchmarking study is part of NSW DPI's CRDC-funded project Promoting Water Smart Infrastructure Investment, where irrigation water use efficiency benchmarks, in terms of bales per megalitre will be established for the Australian cotton industry.

CRDC and industry know too well the importance of this information.

"The irrigation benchmarks obtained are very useful at all levels," Janelle said.

"They are crucial in showing how water use efficiency has improved over time. Continued collection of this data enables irrigators to compare their water use efficiency and also identify potential performance targets."

Irrigation data from the 2012-13 season will be collected from cotton irrigation farms from Central Queensland through to Southern NSW.

"Increased participation can only provide a

better picture of water use practices in the cotton industry," Janelle said.

"Watertrack Rapid requires a variety of inputs of which are easily extracted from farm records. This data includes yield, crop area, sowing date, irrigation dates and soil type along with daily rainfall, storage volumes at start and end of season, irrigation water pumped and harvested, soil moisture reserves.

"Participants are provided with two reports generated by Watertrack Rapid, including a water summary report and performance indicators report.

"The results from all participating irrigators are collated anonymously so irrigators can compare their performance to industry and regional averages. Comparisons of their yield, total water used, irrigation water used and total farm water losses can be made.

"Cotton irrigators are urged to take part in the 2012/13 benchmarking survey which will help to improve individual performance and provide the industry with valuable benchmarks."

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WATER RESEARCH IN ONE PUBLICATION



The Australian Cotton Water Story was launched at the 16th Australian Cotton Conference by Philip Armytage, former CEO of the Cotton CRC, CRDC Chair Mike Logan, Cotton Australia CEO Adam Kay, and CRDC's Jane Trindall (inset).

The Australian Cotton Water Story documents a decade of progress in irrigation research and implementation.

"Nearly \$30 million has been invested in cotton water research in the past 10 years in collaboration with more than 30 organisations, so readers will get a picture of the breadth of cotton research and the innovation and effort undertaken to better understand and manage this critical resource," CRDC Natural Resource Manager Jane Trindall said.

"Farmers, whose future viability relies on making good daily decisions about water use will have quick and easy access to the science behind the industry's best management practices.

"Water resource managers will have at their fingertips access to best science which can inform the decisions to manage this complex issue.

"For students and those new to this industry, this publication provides a platform from which

they can build their understanding of managing water on cotton farms and in catchments where it is grown".

The magazine-style publication, published in conjunction with Greenmount Press, provides a snapshot of just over 80 water research projects from more than 100 researchers and quantifies the improvements in water use over the past decade.

"We have been able to document a 40 percent improvement in cotton water productivity, tied to cotton yields that are two-and-a-half times the world average for quality cotton," Jane said.

Go to www.crdc.com.au to order a copy.

Listen to the interview with Jane Trindall at <http://tinyurl.com/c2e4mno>





QUAD BIKES THE BIGGEST KILLER ON AUSTRALIAN FARMS

QUADS NOW KILL TWICE AS MANY PEOPLE ON FARMS AS TRACTORS AND ARE THE MAIN CAUSE OF DEATH OF CHILDREN AGED FIVE TO 14 ON FARMS.

Last year 23 people died in quad bike accidents and 10 have been lost so far this year. In 2011 almost 80 percent of all quad bike fatalities occurred on farms. Half of the fatalities are caused by the 300-odd kilogram bike rolling over and crushing someone; the other half when people are flung off the bike and hit their head or another part of their body.

Sadly, the bikes do not need to conform to design standards, while helmets are recommended by all organisations they are not compulsory. Similarly, those under 16 should not be riding quads, yet they are easily operated by even very young children, leaving much responsibility on farm owners to police the safety issue.

Tony Lower is the director of the Australian Centre for Agricultural Health and Safety and says while they look nice and stable, quads are notoriously unstable and are prone to roll over. Since 2001 over 160 Australians have died in quad bike incidents.

"Improving quad bike safety is vital to ensuring the health and wellbeing of all people working and living on farms," Tony said.

"Farmers need to think about whether quads are the best option for their farm and the jobs they have to do. Often other vehicles like a side-by-side, ute or two wheel motorcycle will actually be a better choice. Increasingly, farmers are moving away from using quad bikes because of the dangers associated with their use.

"If still choosing to use a quad then a crush protection device should be fitted, passengers should not be carried, load limits maintained and a helmet worn."

Australia has had outstanding success in reducing tractor rollover deaths by 70 percent through an engineering approach placing rollover frames on tractors, and installation of similar devices on quads is one the cotton industry endorses.

"Cotton Australia has maintained a close and serious interest in the issue of quad bike safety," CA's James Houlahan says.

"We seem to be continually confronted by shocking news stories of fatalities associated with the use of quad bikes.

"The findings and recommendations of Farmsafe Australia should not be ignored. While quad bikes have been a popular and useful vehicle on cotton farms, the facts are that



Fitting roll over protection or complete removal of quad bikes is being put forward as the best way to minimise harm and death from quad bike accidents on farms.

they have been demonstrated to be extremely unstable under various situations and the potential for serious or fatal injury is simply too high.

"The wider adoption of head protection and anti-crush protection devices in association with the use of quad bikes is a proven safety control that Cotton Australia strongly endorses.

"We have also seen an increased interest among cotton growers and move towards replacing quad bikes with the side by side all terrain type vehicles. This is an inherently safer option and one which also has the support of Cotton Australia."

As a result of the continuing fatality rate, the federal government announced the QuadWatch initiative in July which is a community based network bringing together farmers, community groups, emergency services and local government. To support these local networks there

will be a QuadWatch webpage established and maintained by Safe Work Australia.

The webpage will provide information and links on how to reduce quad bike incidents, quad bike safety research, work health and safety information and contact details for state and territory regulatory bodies all on the one site. Community groups, academic researchers and state and territory regulatory bodies will be encouraged to provide content to this website ensuring Australian farmers have the most up to date information to protect themselves, their families and their workers from quad bike fatalities.

In addition to QuadWatch, Safe Work Australia will release an issues paper seeking submissions on potential improvements to quad bike safety including crush protection devices. A forum between all stakeholder groups will be held to discuss submissions on quad bike safety improvement coming out of the paper.



"SINCE 2001 MORE THAN 160 AUSTRALIANS HAVE DIED IN QUAD BIKE INCIDENTS."

The QuadWatch website can be found at:
<http://tinyurl.com/979ehgt>
Tony Lower – tony.lower@sydney.edu.au





THE FEW MINUTES THAT CHANGED MY MIND ABOUT

myBMP

A CLOSE INSPECTION OF THE NEW SYSTEM BROUGHT A VERY UNEXPECTED OUTCOME FOR JIM WARK.

TIn 2010 when I was offered the myBMP Business Manager role my initial response was I was flattered to be asked however I wasn't sure it was the best option for me – basically because I didn't understand why a grower would want to voluntarily get involved in a program that (I thought) required a lot of work for no real reward.

I was asked if I could at least take the time to review the new program and then make some recommendations on how the program could be improved and a basic strategy on how to best implement the program once it was complete, which I was more than happy to do.

The next five minutes completely changed my perspective of myBMP.

I opened up the program and the first module that I saw covered HR, focusing on managing staff. The very first practice was a "Level 1" which meant that it is a legal requirements and it stated "Management is aware of the requirements of the National Pastoral Award 2010 that apply to the enterprise" which surprised me as I have been in the industry for many years and yet I didn't even know that there was a 2010 Pastoral Award or that it was relevant to the cotton industry.

This got me intrigued and so wanting to know a bit more I clicked on the little blue question mark at the end of the sentence and a whole new information page sprang up with a lot more information explaining why the award is important, who it refers to and a broad overview of what it means and a link that allowed me to download a copy of the whole document so that I could read the details.

Inside two minutes I had learned something new – something that I was not even aware was important and yet if I was employing staff would have been a legal requirement. In the same location I had access to concise information that explained the details and a copy of the actual document.

I then tried to achieve the same result by using an internet

search which is how I would normally search for information and spent two hours searching and eventually gave up because I couldn't even find a copy of the 2010 Pastoral Award let alone getting a clear understand on how it could have impacted my business.

Within a few minutes my perspective of myBMP had changed completely and I now understood what a fantastic tool this was. I had learned something new, had instant access to

resources that allowed me to understand why it was important and how it might impact on a farming operation and then download a copy of the actual document.

Suddenly it all made sense as to why someone would become part of myBMP, it has so much to offer the user in managing all aspects of their operation.

Why not give it a try? I did and my eyes were opened.

myBMP Business Manager Jim Wark saw for himself the benefits of the system.



FOR THE DIARY: CLOSE OF 2012 myBMP AUDIT PERIOD

FOR ANY COTTON BUSINESS OR FARM CONSIDERING REQUESTING A myBMP CERTIFICATION AUDIT, SEPTEMBER 30 IS AN IMPORTANT DATE.

This is the final day of the 2012 myBMP audit period and any audit requested on or before this date will be assessed using the current farm self-assessment. Audits requested after this date will include the new practices which have been added to each module as part of the module review process, with changes made to update and make

myBMP more relevant to growers.

"The ability to make changes and keep myBMP current is one of the major benefits of the new web-based system however it means that at some point during the year any required changes have to be implemented," myBMP Manager Jim Wark said.

"The most logical time is at the end of the defined audit period running from April 1 to September 30 each year."

In early October all myBMP participants will receive information outlining how each module has changed so users with an open farm self-assessment can determine any additional work required if a farm certification is

going to be requested.

"It is important to reiterate that participation in myBMP is voluntary and an audit is only an option in the situation where farm/business wants to become myBMP certified," Jim said.

"The underlying principle of myBMP is that participation is the primary focus not certification."

If you have any questions on this important update and how it might affect your business please do not hesitate to contact Jim (0427 050 832) or the myBMP administration office (1800 268866).

Jim Wark – jwark@cotton.org.au





It is important for growers, managers and contractors to be aware of their new obligations to workplace safety.

SAFETY RESPONSIBILITIES HAVE CHANGED: HOW *myBMP* CAN HELP

WORKPLACE HEALTH AND SAFETY LEGISLATION INTRODUCED THIS YEAR MEANS FARM OWNERS AND MANAGERS ARE RESPONSIBLE FOR THE SAFETY OF EVERYONE WORKING ON THEIR FARM, INCLUDING CONTRACTORS AND VOLUNTEERS.

“Harmonisation” is an attempt to standardise all Workplace Health and Safety (WHS) rules and legislation across the country. While it will help employers understand their legal obligations better and ensure worker’s rights are protected, the major change affecting farm owners, managers and contractors is safety responsibility. Queensland, New South Wales and the ACT are currently operating under the new harmonised WHS system.

“Part of this legislation means farm owners (family and corporate) are responsible for the safety of anyone who comes to work on their farm, whether they be contractors, students or consultants,” says John Temperley, the Farm Safety Program Leader from the Australian Centre for Agricultural Health and Safety.

“This will mean firstly starting with a safe workplace which means identifying potential hazards and then controlling them.

“Secondly farm owners/managers should conduct safety inductions for all contractors’ staff and any other workers, and contractors themselves should induct their own employees as well.

“In identifying the risks involved with any situation, it is worth asking yourself ‘what are the risks?’ and ‘what can I do that is reasonably practical to address it?’”

myBMP is a great starting point if you are not sure what’s required in employing staff on farm and a great way to help keep up to date on managing staff in an ever changing environment.

The Human Resource Management (HR) module in *myBMP* will also be significantly expanded and supported by extensive tools resources and information at the start of October, to reflect recent law changes, and also to keep pace with evolving needs of growers.

“This improved module will include whatever documents, links to webpages PDFs are needed to allow users to understand what each practice stands for and additionally the resources to help comply with the practice,” *myBMP* Manager Jim Wark said.

“With our seemingly ever-increasing level of competition for employees and changing laws this module is the guidance to help firstly meet legal obligations around employing staff, and

FARM SAFETY LEADER URGES VIGILANCE

John Temperley is the Farm Safety Program Leader from the Australian Centre for Agricultural Health and Safety says farmers are at high risk of fatal and serious injury associated with life and work in agriculture. He says *myBMP* is a valuable resource for the industry to lower this risk.

“The safety of people living and working should be a priority on all farms as it is helping to protect the most valuable assets of a farming business, its people,” John said.

“A practical approach to health and safety management is very effective in helping to reduce these farm safety risks and the HR module of *myBMP* is currently being updated to offer growers an easy to use system that offers a step by step guide by managing farm staff and potential safety hazards.

“The *myBMP* program can be used as a mentoring tool giving suggestions, recommendations and ideas on how to manage staff all the way through to templates for writing job ads, job descriptions or conducting an interview following a probationary period.”

John Temperley

02 6752 8210 / 0419 248 399

www.safeatwork.org.au/rights-and-obligations/legislation

see our
website

secondly, put in place procedures to help you optimise employee productivity and safety.

“This module focuses on all aspects of employee relations, whether they are family members, employees or contractors. It offers practical ways to improve one’s ability to attract, retain and manage their team.”

Jim Wark

jwark@cotton.org.au

email us

GROWING BETTER ALL THE TIME

COTTON AUSTRALIA'S ANGELA BRADBURN REFLECTS ON THE MESSAGES OF THE INDUSTRY'S 16TH CONFERENCE.

A strong belief in the future sustainability of the Australian agricultural industry was articulated by economists at the Conference. While the breaking of the drought has seen a rapid resurgence in the industry, the cotton industry is conscious of not resting on its laurels (the Conference was aptly tagged 'Growing Better all the Time'). Like other industries in the agriculture sector, the economics of cotton growing is under pressure, with rising input prices and declining terms of trade.

The cotton industry has almost completed its third independent assessment of the industry's environmental performance, which is setting the focus for continued improvement in RD&E (research, development and extension) in regard to the industry's environmental programs. The initial findings were outlined at the Conference in the context of major achievements but also future challenges which acknowledge that the future operating environment will be more complex and demanding in terms of improving business productivity and profitability. It explored global competitiveness and market expectations of environmental stewardship; the policies, programs and regulatory requirements of governments relating to the environment, the long-term pressures on Murray Darling Basin water resources and the prospective introduc-

tion of a Murray Darling Basin Plan; and public expectations for good environmental and social stewardship.

The Cotton Conference certainly set the scene for how the industry can manage and move forward. Competitiveness and success will continue to depend on effective RD&E strategies, innovation, adaptation and smart businesses.

The cotton industry is moving forward from a strong base, with the industry having delivered major gains in water use efficiency, significant advances in land and water management on-farm and active engagement in landscape and catchment wide natural resource management. Achievements in water R&D were celebrated at the Conference with the launch of *The Australian Cotton Water Story* – a documentation of a decade of progress in irrigation research and implementation, which has seen a 40 percent improvement in cotton water productivity tied to cotton yields that are two-and-a-half times the world average for quality cotton.

More than ever though, farmers need to be able to be as efficient as possible, and cotton growers recognise that efficiency in the management of inputs and resources (water, fuel, and nutrients) are top priorities. Policies, programs and continued industry RD&E for managing carbon, water and energy in farming systems are a core part of this. Current industry farming systems RD&E strategies have a focus on equipping the industry to respond to escalating energy

costs due to world fuel prices, the changing environment of climate change and a carbon economy.

The overall take-home message from the speakers reinforced that optimising inputs and managing cotton farming systems for productivity present win-win solutions for growers, in terms of cost savings, productivity and profitability, and potential benefits from the government's new Clean Energy Package and voluntary Carbon Farming Initiative (CFI). It is clear that more work is needed here though, particularly in providing information on the economics around changing practices, to help growers and industry decide on the potential for incorporating carbon farming into their systems.

As reiterated by Cotton Australia director Hamish McIntyre, who chaired the *Carbon And Energy Costs – A Better Bottom Line*, "the industry looks forward to future farming systems that incorporate carbon and energy management, and provide farmers with an ability to offset the cost of production and get recognition for good land stewardship". In the meantime, some practical and effective solutions are available that farmers can consider to improve energy use efficiency, and best management practices for improving soil health, and managing inputs.

This will build on existing development which has seen cotton farmers already make advances on farm, for example by placing nitrogen at depth in cooler times in wet soils to maximize nitrogen efficiency, upgrading tractors and machinery to newer, lower emissions models and reducing tillage requirements.

The industry's well -recognised *myBMP* will continue to be a key framework for growers and the industry to use to achieve further gains and help address further developments in carbon farming. *myBMP* is a framework that delivers priority industry R&D and extends this to growers through an on-line program and extension activities. Industry research focused on input and energy costs, emissions and carbon sequestration is channelled into *myBMP* modules on Water, Energy and Input Efficiency, Soil Health, and Natural Assets, making it a pertinent tool for growers in this ever-competitive industry.

For further information on the Cotton Conference, including speaker presentations, go to <http://tinyurl.com/8audgox>



High Achiever Matt Stott, Young Achiever Jamie Iker, Grower of the Year Nigel Corish and Service to Industry award winner Jeff Bidstrup.





The view of the trade hall, where the 1600 delegates meet to dine and talk with the 75 exhibitors at the 16th Australian Cotton Conference.

STRENGTH IN NUMBERS

THE 16TH AUSTRALIAN COTTON CONFERENCE HAS YIELDED WELL IN THE YEAR OF THE FARMER.

Confidence in the cotton industry has returned to its heights if attendance numbers at the Australian Cotton Conference in August are anything to go by; 1600 delegates attended, and they heard from 80 speakers, reviewed 50 research posters and quizzed 75 exhibitors.

Organising committee chair, Lyndon Mulligan was full of praise.

"Speakers, presenters, sponsors, poster authors, delegates and exhibitors all combined to make the 16th Conference a huge success," he said.

"I have been very lucky to lead such a great team, who really seem to know what the cotton industry expects in the way of a conference, and then gets on to deliver it. "The program really had something for everyone. No matter if you have a real scientific/technical bent, or if you are more interested in some of the social issues that face our industry, there were sessions that appealed to an enthusiastic and an all-time record audience."

Over three days, sessions ranged from the latest in weed control and resistance management, to the economics of cotton production. There were sessions on the impact of mining and coal seam gas, connecting young aboriginal people into the industry, the supply logistics challenges of record crops, a cotton growing "masterclass", and a very well attended session on dryland cotton.

Initiatives launched

The 16th Conference proved an important launching point for new industry partnerships, new publications and initiatives.

The timely announcement of a new development and delivery model for industry's knowhow has CRDC, Cotton Australia and Cotton Seed Distributors co-investing \$4m annually.

This will result in the Australian Cotton Industry Development & Delivery Team (D&D Team) extended to meet new levels of demand for information and production support spanning the next five years. (See report page 3)

Two new publications were launched at the Conference. The Australian Cotton Water Story aggregated a decade of research into the one publication that was co-produced by the Australian Cottongrower Magazine. This report is to be a useful resource for researchers and irrigators, while also being a testament to the industry's continued improvement in natural resource management. On hand to launch the publication were Mike Logan, Jane Trindall, Philip Armytage and Adam Kay representing CRDC, Cotton CRC and Cotton Australia.

The culmination of research into agro-

nomic best practice for cotton production in the dry tropics written and compiled by CSIRO's Steve Yeates and Paul Grundy and Tonia Grundy of Queensland DAFF. NorPAK provides cotton production and management guidelines for the Burdekin and north Queensland dry tropics region. NorPAK is published to be the key information for growers and advisors working in this new production region.

Two annual publications of the D&D Team were also launched: the 2012-13 Cotton Production Manual, and the 2012-13 Cotton Pest Management Guide. Both publications contain significant reviews of content and both reflect changes to best practice that have been recorded and re-written to suit the next season. These will be distributed to growers and agribusinesses in September.

Grower of the Year

The much-anticipated annual awards recognising success and outstanding performance was the highlight of the Australian Cotton Industry Awards Dinner held on the last night of the Conference.

The Monsanto Grower of the Year went to Nigel Corish of "Yambocully" Goondiwindi.

Nigel runs the 4800ha farm for the Corish Family Partnership and impressed the judges with his constant achievement of high yields and ever-improving water use efficiency. Attributing much of his success to the team environment at "Yambocully", Nigel paid tribute to his employees, and said whatever the task at hand, they all got stuck into getting the job done.

The convener of judging panel Geoff McIntyre said it was a well-integrated and co-ordinated dryland and irrigation farming and grazing system.

"Nigel has extensive community involvement both through the Gateway to Agribusiness program and the CRDC funded



Researcher of the Year
Paula Jones.

schools project,” he said.

“He is also well advanced with *myBMP*, having achieved level two *myBMP* across all categories.”

High achiever

The AgriRisk High Achiever Award, presented by Dee McCallum, went to southern NSW grower, Mat Stott, “Point Farms”, Darlington Point. With just two cotton crops under their belts, the Stotts impressed the judges with their passion for the industry and their capacity and determination to rapidly adopt best practice. Notable achievements included water efficiency and farm hygiene.

Best in research

Dr Paula Jones, Operations Manager and program manager at the Cotton CRC based at Myall Vale was named the Cotton Seed Distributors Researcher of the Year. Paula was recognised for her work in bringing together the widespread community research component of the Cotton Catchment Communities CRC. Among her key achievements was the coordination of the Stubbs Report which played a pivotal role in the understanding of the social and economic impacts of the proposed Murray-Darling Basin Plan, and the Wee Waa Drought study, which highlighted the economic devastation long-term drought can have on irrigation dependent communities.

Industry advocate

The Chris Lehmann Trust Young Achiever of the Year Award, sponsored by Bayer CropScience, went to Emerald based consultant Jamie Iker. Jamie’s research into recovery options for flood damaged cotton crops after the 2010-11 floods in Emerald has attracted a lot of positive industry attention. He has also been an active promoter of agricultural careers, regularly speaking to students at schools in Toowoomba and Emerald. He’ll use his bursary to develop an industry video advocating careers in the cotton industry.

Service acknowledged

Queensland Agriculture Minister John McVeigh presented Darling Downs grower Jeff Bidstrup with the Cotton Australia Service to Industry Award for his contribution to the industry at local, regional, state, national and international levels.

Jeff has served on the CRDC Board, Darling Downs Cotton Growers Association for 25 years and in more recent years has focused on finding ways to protect quality farming land from the potential impacts of the energy sector.

Category finalists

Cotton Grower of the Year: Scott Brimblecome, “Ashwood Farms”, St George and Steve Porter, “Cleveland”, Mungindi.

Researcher of the Year: Dr Stuart Gordon, Research Group Leader, CSIRO Materials and Science Engineering, Geelong and Dr Jeff Werth, Senior Research Scientist, Queensland DAFF, Toowoomba.

Innovative Grower of the Year: Ian and Marilyn Carter, “Connamara Partnership”, Quirindi and Scott Armstrong and Richard Ross, “Cooinda”, St George.

Chris Lehmann Trust – Rod Smith, “Milchengowrie”, Boggabri and Andrew O’Connor, “Strathguyle Farms”, Mungindi.



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- [1] WinCott members at the launch of the NRM survey – Sally Hunter, Sally Knight, Jane Trindall, Heike Watson, Rhiannon Smith and Leanne Eather.
- [2] Students from Calrossy Anglican School, Tamworth: Natalie Aquilina, Bulladela; Emily Grellman, Wee Waa and Emily Nott of Narrabri.
- [3] Geoff Webb and Bede O'Mara.
- [4] Emma Twine of Dow Agrosiences, Dianne Kummerow, Georgie Kummerow, Clinton Kummerow and Meg Kummerow all of Bonwin Farming, Bongeen, QLD.
- [5] Trade hall organiser Brian O'Connell and Australian Cotton Shippers Association secretariat Tracey Byrne-Morrison.
- [6] St George grower Glenn Rogan promoting the industry's premium cotton at the dri.glo stand.
- [7] Ian Macdonald and Simone James of Moree.
- [8] The Sunrise Resources fashion parade theme was "workwear inspired" and students from the Gold Coast Academy of Design were tasked with creating garments using cotton sheeting.
- [9] Phillip Morgan, Morgan Farms Gunnedah with Peter Verwey, NSW DPI.
- [10] Steph Smart, Michael Jones, Ben Smart.
- [11] Sunrise Resources Fashion Parade.
- [12] Rabobank's Adrian Pirie, Michael Webber and Gen McAulay, State Marketing Manager Qld/NT.
- [13] Roberto Southwell, Duncan Ball, Kevin Schwager and Tim Whan.
- [14] Bec Fing Cotton Australia, Kyleigh Black Agrichem and Megan Hamilton of B&W Rural.
- [15] Cotton Australia stand and photography competition.

CRDC directors Richard Haire, Chairman Mike Logan, Dr Michael Robinson, Dr Mary Corbett, Hamish Millar, Cleave Rogan, Dr Lorraine Stephenson and Executive Director Bruce Finney will oversee the formation of CRDC's Strategic Plan, however input from the cotton industry is an integral aspect of the Plan and input is being sought.



WHERE TO NEXT WITH COTTON R&D?

CRDC IS PROGRESSING WITH THE DEVELOPMENT OF ITS NEXT FIVE-YEAR STRATEGIC R&D PLAN WHICH WILL ESTABLISH GOALS AND PRIORITIES FOR COTTON R&D FROM JULY 2013, AS **BRUCE FINNEY** EXPLAINS.

There is an open invitation to growers, researchers, industry participants and the Australian Government to contribute to CRDC's future direction for research in the cotton industry.

The initial step of situational analysis has included a review of progress with the current CRDC strategic plan, workshoping of key issues with external experts, industry and researchers as well as scanning of the industry's ever-changing operating environment to identify trends, emerging issues and key drivers which will influence the future of the Australian cotton industry.

History shows that there will be challenges and opportunities that R&D will enable industry to respond to quickly as well as where the results may not be available or important to use for another 10 to 20 years. CRDC, industry organisations and research partners are all utilising the industry vision, Vision 2029, as a valuable guide to the longer term future directions. CRDC has mapped its strategic role responsibility against Vision 2029.

The Australian Cotton Conference during August 2012 highlighted global changes that are underway in digital reality, data capacity, personalisation and social networks – these influences have implications for the

Australian cotton industry and its research investments.

At the industry level, the issues of profitability, workforce availability, production and price volatility were front and centre in an increasingly complex and uncertain operating environment. That these issues are occurring at a time of record production underscores their critical significance. It is predictable that even stronger relationships and better knowledge sharing along the industry supply chain will be key factors in effectively understanding and addressing these issues.

CRDC is evaluating the potential for new R&D strategies to improve profitability, workforce and industry performance.

What more can be done to improve yield, cost of production and risk management? Could more importance be given to quality, marketing or product transformation to improve

the value of Australian cotton?

Quantifying the industry's requirements for people is work in progress but putting in place new strategies that connect the supply and demand for labour is a planning consideration. The Australian cotton industry has a record of ongoing improvement in environmental performance. But what areas are most important to improve next? The recommendations of the most recent industry environmental assessment will be important guidance. Looking outwards the ability of an industry to be able to explain its contribution to society is increasingly of importance and CRDC is considering the need for supporting research.

With the situation analysis phase concluding the CRDC will be identifying R&D focus areas and drafting a proposed strategic direction in consultation with stakeholders in coming months. Once the feedback has been considered CRDC will consult with Cotton Australia before a plan is finalised in early 2013 and submitted to the Minister for Agriculture, Fisheries and Forestry for approval.

INVITATION: BE A PART IN DIRECTING THE FUTURE OF YOUR INDUSTRY



CRDC invites ongoing input from growers, researchers, industry participants and the Australian Government in the development of the next five-year strategic R&D Plan which will take effect after Ministerial approval before July 2013

If you would like to have your strategic input into the 2013-2018 Plan, contact CRDC Executive Director Bruce Finney on 02 6792 4088 or bruce.finney@crdc.com.au