

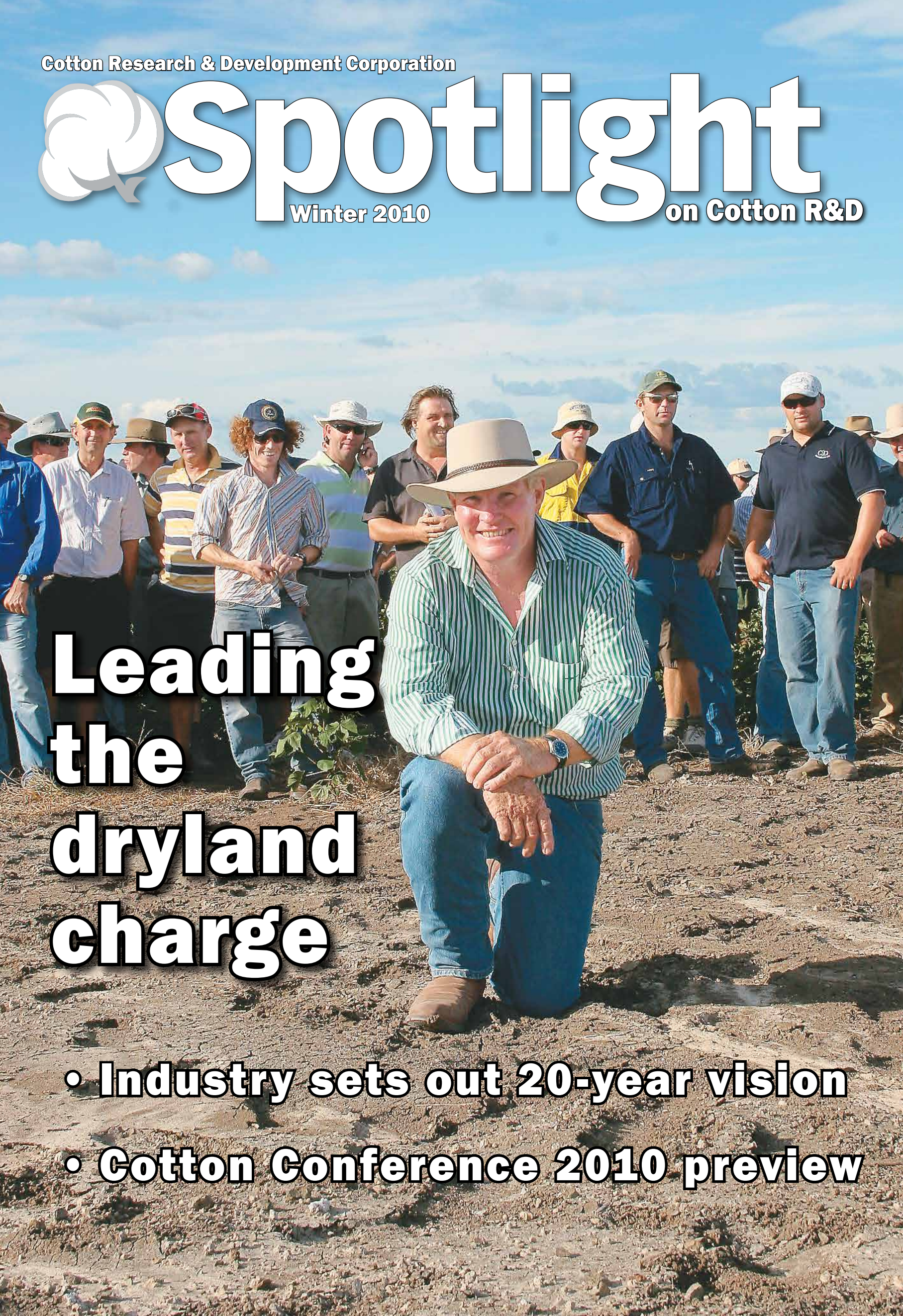
Cotton Research & Development Corporation



Spotlight

Winter 2010

on Cotton R&D



Leading the dryland charge

- **Industry sets out 20-year vision**
- **Cotton Conference 2010 preview**



Australian Government
**Cotton Research and
 Development Corporation**

Winter 2010,

Cotton Research & Development Corporation

Spotlight

on Cotton R&D

Bruce Finney Executive Director, CRDC



This edition of Spotlight begins with an important document for the cotton industry, how we see its future and how we can influence our future as an industry. I encourage all of our readers to consider what Vision 2029 means to them and is this where you also see the future? We are keen to hear your thoughts on how we can collectively make this vision become a reality, regardless of what sector of the industry you may come from.

A person with a vision is Dalby cotton farmer Jamie Grant, the 2009 Innovative Cotton Grower of the Year, who hosted the CRDC-Cotton CRC Big Day Out in March.

Jamie's low risk dryland cotton production system was a great point of interest for many growers, with a huge turnout of people coming to hear the key elements of the success of this operation. The interest in dryland cotton has increased in recent months with reduced allocations and falling grain prices. However many may have been reluctant to grow cotton, due to the risks (ie no or little in-crop rainfall) associated with it. However Jamie Grant has found a way to lower his risks while ensuring a return at the end of each season and his strategies are outlined in our Big Day Out feature.

Another successful event co-hosted by CRDC and the Cotton CRC recently was the Sustaining Rural Communities Conference here in Narrabri.

The conference provided an opportunity for delegates to come together and speak with passion and positivity about their communities. The conference program included an inspiring group of speakers and group sessions tackling key issues. It brought together a broad range of people, from primary industry, health and social services, community groups and business people, who took the opportunity to network and learn from each others' individual or community experiences.

Planning is already underway for another conference next year. We hope you enjoy reading about some of the key messages to come from this year's event.

The Australian Cotton Conference is once again on the horizon, with a preview of what is on offer in this edition. This conference, like the SRC conference in Narrabri, is a real opportunity to hear the latest research and network with people from all sectors of the industry.

The new look best management practice system, *myBMP* will also be launched at the conference.

This will herald a new way of looking at BMP, what it offers growers and how it works – which we have outlined in this issue. Meet the new team and Ken Flower, who has taken on a newly created role to focus on moving research into the hands of growers, to help them become 'the best they can be'.

With picking all but over for what has been a season of mixed fortunes we trust this edition of Spotlight is of strong interest as you prepare for the next. I look forward to seeing you at the Australian Cotton Conference.

in the spotlight ...

- 3–5 Vision 2029 what is it, what does it mean for industry
- 6–9 Big Day Out - low risk dryland cotton
- 10–13 Sustaining Rural Communities - it is possible?
- 14 Focus on target areas for adoption
- 15 Flower brings expertise
- 16–17 Unveiling *myBMP*
- 18–19 Annual disease surveys - mealybug and boll rots increase
- 20 R&D investment highlighted
- 21–29 Australian Cotton Conference preview
- 30–31 People in cotton - Dick Browne
- 32 Extending investment for future needs

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, Tony Burke MP.

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.

Postal: PO Box 282, Narrabri NSW 2390

Offices: 2 Lloyd Street, Narrabri NSW 2390

Tel: 02 6792 4088; Fax: 02 6792 4400

Email: <mailto:spotlight@crdc.com.au>

Web: <http://www.crdc.com.au>

Editor: Rohan Boehm

Editorial coordinator: Melanie Jenson

Layout, composition & print coordination: Courier Print, Narrabri

Cover Photo: Dalby dryland cotton farmer Jamie Grant with the crowd of more than 100 farmers at the Big Day Out.

Photo Melanie Jenson.

Further information: ? Where this symbol appears, readers are invited to access further information from the identified source.



What is the future of the Australian cotton industry?

By Bruce Finney

In 2009 leaders in the Australian cotton industry recognised the potential for improving industry performance, organisational collaboration and capacity through development of a shared view of the future. This shared vision would facilitate greater awareness of possible future challenges and opportunities for the cotton industry and most importantly enable alignment of thinking, planning and progress.

A 20-year timeframe was chosen in order to stretch thinking beyond the short-medium term and ensure a longer-term strategic focus. Cotton Australia Chair Joanne Grainger summarised our goal as “To develop a shared vision that inspires and unifies the Australian cotton industry”.

In August 2009 CRDC engaged the consulting group Emergent Futures to facilitate a project, titled *Cotton Industry Vision 2029*. The project started in September 2009 and finished in March.

The Vision 2029 project was a collaboration between CRDC, Cotton Australia and the Australian Cotton Industry Council (ACIC), with representatives from member organisations forming a Reference Group. The project scope covered the whole of the Australian cotton industry from input suppliers through to marketers.

In order to develop a shared vision, a scenario-based foresight approach was taken to help the industry first explore the range of possible futures it may face before identifying a preferred future for the industry. A series of workshops, stakeholder surveys and scanning activities were undertaken to identify trends, assumptions and driving forces that would influence the industry future. Opportunity to contribute to surveys was broadly available to industry and provided very useful criticisms and suggestions.

Four scenarios were developed which identified the range of possible futures that the Australian cotton industry might face: Boom, Bust, Food Replaces Fibre, and Present Day Projection. These were based on critical challenges and uncertainties identified at the beginning of the project. From these scenarios the draft Preferred Future and vision for the Australian cotton industry was developed.

What is the preferred industry future, representing the vision of how the industry might look in 20 years, having overcome challenges from its present situation?

The Journey

In years leading up to 2009, the industry experienced particularly hard conditions. Drought plagued many regions and government reforms ensured water security was at an all time low. The cotton labour force was being ‘mined’, while climate change and the carbon pollution reduction scheme were big challenges knocking on the door.

Industry rationalisation, public and political perceptions towards farming had all taken a toll. Industry confidence, profitability and resilience were waning. Some people felt the industry was in dire straits while others were cautiously optimistic that it would again rebound when conditions improved.

The industry needed to find a way past the current major challenges to create a preferred future. The leaders identified that the challenges could be overcome through a combination of repositioning the industry in the global marketplace and achieving superior industry performance underpinned by science, technology and the passion and innovative nature of people within the industry. Clearly this would involve every link in the industry from seed and chemical distributors, growers, consultants, researchers, pickers, truckers, ginners, classers, merchants, spinners and brand owners.

Key elements of the envisaged Preferred Future for 2029 are:

Vision: “Australian cotton, carefully grown, naturally world’s best”

By 2029 the Australian cotton industry will be:

- **Differentiated** - world leading supplier of an elite quality cotton that is highly sought in premium market segments
- **Responsible** - producer and supplier of the most environmentally and socially responsible cotton on the globe
- **Tough** - resilient and equipped for future challenges
- **Successful** - exciting new levels of performance that transform productivity and profitability of every sector of the industry
- **Respected** - an industry recognised and valued by the wider community for its contribution to fibre and food needs of the world
- **Capable** - an industry that retains, attracts and develops highly capable people

In achieving these elements, the industry would be well positioned to deal with foreseeable emerging challenges such as peak oil, competitiveness with food crops, bio-identical cotton substitutes and additional issues yet to be identified.

To have impact the vision will need to be owned by all participants in the industry. Peter Graham, Chair of ACIC, noted that “The Australian cotton industry is defined by the strength of its connections through input and service providers to the production, ginning, classing and marketing of Australian cotton to overseas customers”.

Further activities are planned to engage and consult industry more broadly to seek agreement on the final vision and work on strategies for achieving the vision.

ACIC will be responsible for managing, monitoring and reporting on progress of the vision and strategy. Options for strategy development and monitoring scenarios and emerging issues are to be considered by ACIC in 2010.

Early responses to the vision so far appear to be very positive. Organisations have indicated they are already starting to consider how their plans align with this vision for the future. The vision is informing the development of industry marketing initiatives with Australian and international brand owners. This signifies an excellent start to adoption of the vision which is the ultimate milestone for the success of this initiative. The Cotton Conference will be a great chance to report on further development of the vision and for people throughout the industry to discuss and share their thoughts about the future for the Australian cotton industry.

DIFFERENTIATED



- In 2010 the Australian cotton industry recognised the need to differentiate its product and build a brand and strong position in the global marketplace to support this. The industry's pre-existing reputation for quality, contaminant free and environmentally responsible production characteristics provided a good basis. A collaborative approach across the chain was developed to better understand future consumer and manufacturing needs and competitive forces. The combined effort and resources have led to the development of a uniquely Australian brand owned and supported by the whole industry.
- Over time unique varieties adapted to Australian conditions have been developed to meet the brand requirements.
- Improved productivity and returns have resulted in a dedicated cotton production sector committed to best management practices. Extensive effort has been put into developing people with the knowledge and skills to achieve quality standards and maintain production levels.
- New traceability technology helps ensure product integrity and has transformed supply chain logistics.
- A small onshore manufacturing capacity has been established, supporting a 100% Australian natural fibre product niche, as growth in local manufacturing became viable based on the emerging interest in 'on-shoring' (return to local manufacturing as transport costs escalate), new manufacturing technology and proper environmental accounting.
- The industry has new partnerships with leading global and Australian brand owners in developing and marketing new textile products.
- Personal success and recognition reignite a sense of belonging, identity and passion for the cotton industry. Community spirit and collaboration have helped the industry pull together to achieve stretching goals and to weather hard times.

RESPECTED



- Industry has gained recognition from government and community for the quality of its products, sustainable practices and contribution to the fibre and food needs of the world.
- As a leading industry in productivity growth through innovation, there are significant spillovers from the knowledge, practices and technology developed through cotton R&D being adapted and applied in the production of food crops.
- Australian consumers can now purchase and are proud to wear Australian cotton garments and textiles, confident in the quality and the story behind the product which supports their values and makes them feel good about supporting their local industry and the people in it.
- International consumers readily recognise the Australian cotton brand which enjoys a favourable reputation of similar standing to Egyptian cotton, Supima, French champagne or Belgian chocolate – elite quality.
- People recognise the long term value of the contribution made by industry to the community and the benefits that industry provides them in terms of social, emotional and financial wellbeing.

CAPABLE



- Industry continues to recognise the importance of people and their capacity to the future success of the industry.
- Cotton is an attractive industry to be a part of as it is progressive, profitable and ethical.
- The values and achievements of the industry and the resources available bring interest from new entrants, researchers and environmentalists.
- The cotton industry's mindset has always been at the forefront of agriculture in terms of forward thinking and nurturing people. This trait has paid off with cotton being a most attractive employer in the rural and research sectors, attracting talent from both Australia and overseas.
- This is reflected in the industry's adoption of best human resources practices and career development programs including scholarships.
- The industry is renowned for its culture of innovation and responsiveness to change.

The Destination – What industry looks like in 2029

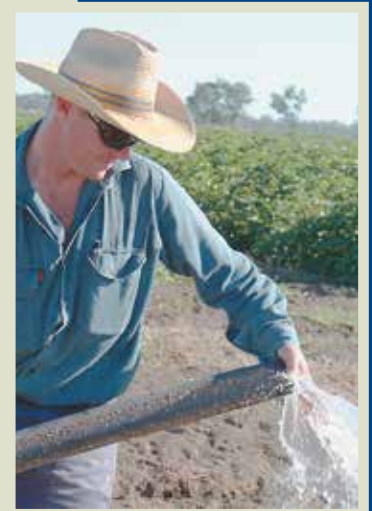
RESPONSIBLE

- Once perceived by those outside the industry as an environmental vandal and water waster, Australian cotton is now valued for its credentials as the most environmentally friendly cotton production system on the globe with the lowest water use, carbon footprint and chemical use of any cotton producing region.
- Australian cotton is the world's first cotton producer and first Australian agricultural sector to achieve international recognition for carbon neutrality. It is now the highest rating cotton producer on the international Corporate Social Responsibility Index (CSRI)¹.
- Environmentally friendly easy care cotton products have been developed and are increasing their share of apparel sales worldwide.
- The industry boasts the best health and safety record of any agricultural industry through its dedication to improved health and safety practices for employees and business owners.
- Working conditions surpass those of all other cotton producing nations.
- Through continuous improved performance on efficiency and responsibility of water use, cotton has a reputation as a valued and responsible water user.



SUCCESSFUL

- Industry enjoys improved profitability overall through successful positioning in a high value market segment and new levels of industry performance.
- High returns and improved productivity of elite cotton ensure production is competitive with food production.
- Australian cotton was a leader in the advancement of energy and water saving technology, soil bio-enhancement, varietal improvement and supply chain efficiency to create exciting new levels of industry performance.
- While water availability continues to be variable in 2029, innovation and new technology has enabled vastly increased water efficiency. Cotton's previously enviable productivity per litre of water has surpassed all expectations – returns are comparable to, and sometimes greater than, the highest value food crops. Successful advocacy has translated this into improved water access and security.
- Water efficiency improvements have been achieved not only through production and manufacturing practices but also due to new low and no water washing technology contributing to the overall lifecycle efficiency of cotton. Lowest environmental footprint of all fibres, ease of recycling and natural, wearable characteristics of cotton are its key selling points and help maintain its competitiveness with synthetic fibre choices.



TOUGH

- Industry has a capacity for strategic awareness and is responsive to emerging challenges and opportunities.
- The cotton production sector has developed business and financial management practices that make it resilient to the impacts of water scarcity. Some larger enterprises are spreading risk with operations in multiple growing regions while smaller operators have well established risk management systems, improved financial reserves and improved water security through new management systems and increased efficiency.
- Production risk is accurately measured and is part of financial institutions requirements for funding agricultural activities.
- Plant breeding has continued to deliver varieties of high quality and yield adapted to changing environments.
- Improved farming systems especially those employing the benefits of a range of technologies have allowed much higher water use efficiencies to be achieved as well as increasing the resilience of farming operations to climate volatility.
- The industry continues to invest in improving its productivity and market performance.



¹ Such an index does not exist at this time but we anticipate something of this nature into the future.



INNOVATION

WHAT

Big Day Out

featuring “low risk agriculture”

WHO

Jamie and Susie Grant

2009 Cotton Industry Innovative Cotton Growers of the Year

WHERE

“Kielli” Jimbour,

an aggregation of 4600 ac (1800 ha) consisting of seven separate farms on the Jimbour Plain, north of Dalby, Qld.



From left Moree cotton and broadacre farmers Henry Moses, Penny Blatchford, Big Day Out host Jamie Grant, Tony Bailey, Jo Robinson, Roly King and Rob Blatchford.

Innovation leads to successful low risk dryland cotton system

The words ‘low risk’ and ‘dryland agriculture’ are rarely used in the same sentence, where risks lie with a huge reliance on favourable seasons with timely and substantial in-crop rainfall.

Never one to say anything is impossible, Jimbour farmer and 2009 “Innovative Cotton Grower of The Year” Jamie Grant, along with wife Susie, has developed a progressive dryland cotton farming system he describes as low risk and sustainable, taking the guess work out of crop success and ensuring returns at the end of each season.

The 2010 CRDC/Cotton CRC Big Day Out was held at the Grant’s property in March. The day showcased the innovation behind this ‘low risk agriculture’ strategy and the keys to its success, with more than 130 farmers from the northern to the southern-most cotton growing regions attending.

The Grant’s yields and quality speak for themselves. In a less than brilliant season in terms of in-crop rainfall (2008-09), Jamie grew an 8.8 bale/hectare crop, of which every bale was above base grade.

Put simply, the Grant’s system is based on annually planting one third of the 1800 hectare farm to dryland cotton with Roundup Ready Flex, given there is a full profile of moisture at planting. The other two thirds are fallow and planted with millet cover crop at the start of each summer and then killed at different times depending on planting. A zero till approach is used, with Beeline and 60 inch row spacings.

“Using water efficiently in dryland is about knowing you have enough starting moisture, add a conservative amount of in-crop rainfall and ending up with a profitable result as the worst case scenario,” Jamie told the crowd.

“If I can’t see that happening I’ll save the moisture for next year.

“If I took a punt on it I’d end up with no moisture and an unprofitable result, which makes a year’s interest look cheap!”

It’s not just this farming system which has made this operation successful, being innovative is a mind set Jamie likes to cultivate and challenge constantly. He sees agriculture as having a bright future.

“It’s great to see so many young people here,” he said at the day out.

“There is a great future in farming and it will be interesting to see the industry in the next 20 years and we aim to pass on our knowledge and enthusiasm to the next generation, whether it be our children or others.

“We need to set challenges in farming and push limits, as it keeps you on the ball and keeps things interesting.

“At the end of the day we need challenges to get real satisfaction from the results.

“And the challenges for farm businesses just keep on coming.

“The small ones should be fixed and get on with your life and the bigger ones such as labour, climate, market trends and cost of production etc just have to be worked on over time with an optimistic outlook.”

This thinking has brought the Grants to where they are today.

“We were opportunity cropping but not really growing good cotton or grain and running the farms at 120-130 percent cropping frequency,” Jamie told the large crowd.

“We wanted to be sustainable, and grain prices ebbed away so we looked at growing dryland cotton. We realised then we would need good moisture, which meant going into fallow rotations.

“We knew we needed to do this right because we could go ‘out the back door’ fast.”

In dryland agriculture it’s all about getting moisture into your profile then getting it back out again, Jamie Grant says.

“We have to think of ourselves as moisture farmers,” he said.

“This is where the practices like zero-till, controlled traffic, well managed fallows and the use of cover crops really make the difference.”

Couple this with a clear understanding of his soil, its water holding capacity, nutrient levels and requirements and soil biology. Jamie has a real insight into the best farming system for his country.

“Knowing your soil” is one of his main mantras.

Innovation involves seeking out new research and putting it into practice.

The Grants have been constantly involved in trial work with private consultants, state departments, CSIRO on many commercial agribusinesses. The Grants are always keen to hear ideas and investigate new research.

“There are all sorts of opportunities that can come up for a business and they originate from communicating with people outside your farm operation,” Jamie says, with his final words at the end of the Big Day Out - “If we can all walk away from here today with just a snippet of information it’s been a bloody good day!”

Millet makes best sense at “Kielli”

The Grants have been growing white French millet cover crops in long fallows for four years now, and the practice has quickly become the ‘champion’ of the farming system.

Millet provides the “best bang for your buck” in regard to moisture and straw cover according to Jamie.

The millet plant and its stubble’s efficacy in holding in soil moisture, improving organic matter and general soil health was explained by Jamie to the curious crowd, who had just passed the sight of acre upon acre of millet crops to get to the “Kielli” homestead.

“The cover puts carbon back into the soil, sustains VAM populations and helps nutrient cycling while reducing evaporation, and trapping water,” he said.

“The cover also helps alleviate rain drop compaction during heavy rain (when it comes).”

But why millet and not a legume or more common cereal crop?

“We have found millet leaves better cover and doesn’t use too much moisture compared to other cereals like wheat and sorghum,” Jamie said.

The stubble becomes very brittle with age so there are no hassles with hair-pinning at cotton planting time.

“We didn’t go for legumes because our country here is not nitrogen starved and legumes are ‘lazy’ in this soil, also you don’t get left with any cover.”

Why in a two year fallow?

“It is simply to allow time to receive adequate rainfall and time for it to move down through the profile, so if this means fallowing for a second year, you need to plant a second millet crop as the stubble from the first crop does not last for two years,” Jamie told the crowd.

“After all we must view ourselves as moisture farmers, moisture is king.”

“The moisture the cover crop allows to be put back into the fields is quite surprising, often the paddocks with the cover crop will use less moisture than the evaporation that is lost from a bare fallow.

“The crop is usually planted around the end of Spring/early Summer and sprayed out around Christmas, but the timing is flexible.

“If the profile fills in one year, use it or the second year’s rainfall will run out the gate and down the road.”

Jamie says growing small seed crops in heavy black soil can be a problem, largely due to getting small seeds to germinate in clay soils.

“We seem to have improved this by using a planter that will start in fairly wet conditions and it needs to cover your country quickly before the top dries out as the deeper you go the more trouble you seem to have with germination,” he said.

Jamie is using a Ground Hound planter with twin discs on 15” spacings at the moment but is planning to change to a wider machine in the future.



Millet comes up trumps in trials

In GRDC trials in the Goondiwindi region, white French millet was the most efficient species in generating cover with respect to water use, by producing a mass of surface roots creating channels to further aid infiltration.

The millet aids in protecting otherwise bare soil from erosion, and provides competition for weeds that are often problematic such as fleabane, leading to lower infestations.

In the Goondiwindi trials, winter cereal establishment was generally higher where a cover crop had been sown than in the fallow, with improvements in establishment most pronounced

under harsh planting conditions.

In 20 of the 23 cover crop trial sites, a sprayed out cover crop led to a subsequent winter crop yield increase of 0.33 tonnes/hectare.

Dr Nikki Seymour from Queensland Department of Employment, Economic Development and Innovation, has also found that a short term millet cover crop can also increase VAM – Vesicular-arbuscular mycorrhizae – fungi, which is likely to lead to better establishment and improved cereal growth.

An increase in free-living nematode numbers is also a sign of improved soil microbial biomass.

“This is most likely due to increased soil organic matter following the millet cover crop and is beneficial to crop production as organic matter decomposition and nutrient cycling in the soil will generally be enhanced,” Dr Seymour says.

“As well as the broader agronomic benefits, this VAM effect has implications for both crop rotation and crop uptake of nutrients like P and Zn after a long fallow.”

✉ <mailto:Nikki.seymour@deedi.qld.gov.au>
07 4639 8837



The farming system at a glance

- Three-year rotation, one-third planted annually to cotton, balance white French millet.
- Cotton planting dictated by available moisture profile – must be at least 200mm.
- Millet planting around September – October with a view to slash out around end December
- All fences have been removed and ground levelled to allow natural flow of water across the flood plain.
- Zero till (apart from pupae busting) for 16 years
- Controlled traffic using Beeline
- Cotton grown on 60-inch row spacing on solid configuration, 15-inch spacings for millet.
- All machinery is on three-metre centres (9.14m – 30 foot swaths)

Soil water holding capacity – know it

Knowing how much soil moisture is available drives this successful farming regime.

Unless there is a full moisture profile – which Jamie has quantified - planting does not proceed.

By doing several water saturation sites over the years, Jamie knows that the Jimbour Plain soil can hold about 280-300mm of water which is available to the cotton crop.

“By oven drying many soil samples over time we have a very good handle on judging our soil moisture,” he said.

“We realised with this cropping system we would need good moisture and that meant going into the fallow rotation we have today.”

Jamie said all farmers should look at themselves in terms of being moisture famers first and foremost, saying “Moisture is King,” therefore the farming system must be geared to preserve and conserve it.

This is the main impetus for the two year fallow regime with the millet cover crops.

“We fallow our country for two years because you need time and an adequate amount of rainfall to allow moisture to soak down through the profile and fill it,” said Jamie.

If the right rainfall events occur in association with good ground cover this can be brought forward by a year.



Young Darling Downs farmers Josh Connolly, Tolglow P/L Bongeen, Andrew Ruhle “Jalbirri” Bongeen and Scott McEwan “Carinya” Bongeen came to see what the keys to the Grant’s success are.

Farming system of the future?

While yields have been impressive in this dryland system, growing cotton for quality is paramount at “Kielli”.

“Quality is a consideration in all farming practices,” Jamie says.

The Grants use zero till, guidance and 60 inch row spacing to promote even plant growth, maximise the use of heat and light units and allow moisture to be metered to the plant. In-crop management aims to keep the crop very uniform and having their own picking gear means picking takes place at the optimal time to achieve the best quality.

Jamie prefers planting into the solid configuration as opposed to the more traditional skip row.

“It allows more light around the plant and we get a better result when spraying, as we can get right around the bush,” Jamie said.

Ultimately though, he says, row spacing must be matched to the soil-water holding capacity and in-crop rainfall.

“Cotton can be grown in a lot of places now but you have to match soil type and climatic conditions,” he said.

“Go to a row spacing because it is right for your country,” was his advice to the crowd.

Flexibility in this three-year rotation means cotton planting can be brought forward by a season if good rainfall fills the profile sooner and likewise planting may not occur at all in dry seasons.

Opportunity cropping – growing something other than cotton – would only be considered in exceptional circumstances.

That is, if cotton prices were very low, the price of another crop was particularly high and there was a full profile of moisture.

“We have decided that financially, cotton is our best option, so to grow something else just puts us further away from our next cotton crop,” Jamie said.

After picking, with the aim to leave the stumps in, cotton is mulched and sprayed out, which Jamie said had an 85 percent success rate.

“This gives initial control and we use the Weedseeker for volunteers.

“We have found though that our refuges can be a problem, as sometimes it doesn’t seem to want to die, so we do root cut those.”

Pupae busting and getting tram lines back in order are the only tillage operations between picking and planting the millet cover crop.

However Jamie is planning to combine these two operations next year, by attaching go-devils to the pupae busting rig in an effort to further streamline the operation.

The fertiliser program is determined by a comprehensive nutrient test prior to each crop.

Starter Z is applied to counter the long fallow effects.

“Because our soils are healthy despite the regular long fallows, we see natural mineralisation adding more available nitrogen than we need,” Jamie said.

“Even after a minimum of six years in this rotation, we usually end up with 250-300kgN/ha at the end of the fallow.”

Managing risk for glyphosate resistance



Attendees take a closer inspection of the Grant's very uniform cotton crop, grown using zero tillage methods which can lead to an increased risk of glyphosate resistant weeds if not managed appropriately.

Deliberate rotation of chemical groups, the use of Weedseeker technology and careful management of weeds to ensure they don't survive spraying are all tactics used in the integrated weed management plan at 'Kielli'.

According to DEEDI weed specialists Jeff Werth and David Thornby, glyphosate has allowed minimum and no-till farming systems to succeed, however resistance poses a threat to the success and sustainability of these practices.

Jeff said in his presentation that resistance is a major concern as it will make it difficult to continue using farming systems based on glyphosate.

After 16 years of zero-till farming, the last six of which have had regular long fallows and low cropping diversity, it could be presumed that the Grant's have a high risk of developing glyphosate resistance among weeds on the property.

In reality the Grants rate as low risk because of their careful farming practices.

Their risk was assessed using DEEDI's internet based glyphosate resistance risk assessment tool, developed by David Thornby, which allows growers to check current level of risk of developing resistance on their farm, paddock by paddock.

For the Grants, deliberate rotation of chemical groups, the use of Weedseeker technology and careful management of weeds to ensure they don't survive spraying are the main tactics used in their weed management system.

The use of the millet cover crop also hinders weed growth.

The Weedseeker's role in resistance management rates highly on Jamie's list of tools, telling the crowd it had turned into his main tool and had paid for itself in the two years since buying it.

"All along the decision to get a Weedseeker was to counter herbicide resistance," Jamie said.

"With it we can use expensive chemicals to achieve high rates of control because of the low percentage of area sprayed.

"In this way different chemical groups can be used without needing to use residuals.

"We are careful to kill all weeds so problems don't arise."

He said however the Weedseeker uses flat fan nozzles that were not ideal in mitigating drift, and should be used in only ideal conditions.

This means that the Weedseeker is limited to ideal spraying conditions and therefore can limit the area you can spray in a day when there are susceptible crops in the region.

Jamie recommends Yamaho nozzles as his preference for broad-acre application when using volatile chemicals in areas where there are susceptible crops.

Resistance on the Grant's farms was



Development of this tool was supported by CRDC, Cotton CRC, Monsanto and GRDC.

rated using the DEEDI on-line tool and Jamie said at the field day that he had been interested to know how he would rate, and was pleasantly surprised to see his 'low risk' rating.

Rating resistance risk contributes to best management practice in cotton and grains farming.

Growers and advisors enter information on current practices performed on a specific paddock, including crop rotation, crop density and weed control tactics, and identify which weed species they usually have to control. The tool will then calculate a glyphosate resistance score for each part of the rotation in that paddock, and a level of risk for each weed identified.

? The toolkit is available online at <http://www.dpi.qld.gov.au/asp/glyphosate-resistance-toolkit.htm> For more information and support about glyphosate resistance David Thornby David.thornby@deedi.qld.gov.au Southern Qld; Jeff Werth jeff.werth@deedi.qld.gov.au Central Qld; Vikki Osten Vikki.osten@deedi.qld.gov.au NSW; Graham Charles Graham.charles@dpi.nsw.gov.au

Want to know more about preventing glyphosate resistance?

CRDC and GRDC are joining forces with Crop Consultants Australia (CCA) to deliver a forum that answers all your questions relating to glyphosate resistance – in the one place, on the one day.

GLYCOM will address questions such as;

- how wide spread is the resistance problem,
- how do you assess your risk of glyphosate resistance,
- what tactics can be used in fallows to reduce the risk, and importantly,
- how much do these tactics cost.

CCA Cropping Solutions Seminar
28 July 2010

O'Shea's Royal Hotel, Goondiwindi

To Register:
www.cropconsultants.com.au

Sustaining Rural Communities

National Conference

Narrabri, NSW

19–21 April 2010



The final forum of the Sustaining Rural Communities Conference saw real outcomes for attendees to go forward and make a difference in their own communities. Facilitating the session was Ruralscope's Jo Eady (rear), with (from left) Murray Darling Basin Community Committee member Danielle Anderson, Wellington NSW, Mark Hickman Professional Development Manager (Cotton), Qld Department of Employment, Economic Development and Innovation and Namoi Valley resident Sally Knight.



CRDC's Manager - Communication & Capacity Investment and conference co-organiser Rohan Boehm with guest speaker, Rural Communications Consultant and President of Queensland Rural Women's Network Georgie Somerset, who said as an employer, be clear about what you want to achieve through the people you have - "the person is the critical investment".



CRDC Catchment and Communities Program Manager Paula Jones co-organised the conference. She is pictured with forum facilitator Jo Eady, who heads the Future Cotton Leaders Program, which has mentored some of the cotton industry's best and brightest.

Success in sustaining rural communities

Passion and leadership are the glue which holds together rural communities and is also what will rebuild those that are broken.

This was the major theme to come out of the Sustaining Rural Communities Conference held at Narrabri in April. The event was a joint project of CRDC and the Cotton Catchment Communities CRC and convened by Rohan Boehm, Human Capacity Investments manager, CRDC; and Paula Jones, Program Manager for the Cotton CRC.

Rohan said CRDC invested in the event to learn more about how industry would invest in the future to address its strategic goal of supporting sustainable rural communities.

"The Cotton CRC also has a key plank of investing in rural communities so it became a key opportunity to jointly investigate the relationships," he said.

"While the cotton industry has its own very strong internal networks, the industry is equally a key part of many rural communities. Leveraging that relationship so that industry's growth is assured in flexible and skilled workforces working from vibrant communities is fundamental to the industry's long term prospects.

"We began by inviting top speakers to produce evidence from their social research and professional backgrounds to describe the future of rural communities. Each day of the three day conference was extended by valuable

discussion in workgroups.

"The conference brought together an informative and inspiring group of speakers with in-depth knowledge of rural and remote issues, challenges and social structures which influence the health of these communities - physically, socially and economically.

"Three days of intensive inquiry across more than 200 delegates has demonstrated how much the cotton industry has to gain by engaging communities in its initiatives."

Co-convenor Paula Jones said we were overwhelmed by the the delegates' response, passion and commitment for their communities and their interest in finding ways to sustain them.

"We want to keep that momentum going and it became apparent even before the end of this conference that we would most likely run it again next year," Paula said.

"The passion these people have for their communities is what brought them to the conference - to find a way forward for our towns and communities amid changing environmental conditions and unstable world markets and other influences which ultimately shape the future of rural Australia."

An overarching theme of the conference was, as Cotton Australia Chair Joanne Grainger put it - industry and community have a symbiotic existence - neither can exist without people, people are the key.

Major questions arising from the discussions and presentations were how to attract and retain people in rural communities in the face of declining populations and adverse environmental conditions.

This ranged from how to keep young people and attract mature labour.

John Walkom, a successful self-made businessman from Dubbo, and chair of the Orana region's Regional Development Australia, said regional development is 'our' responsibility.

"But we've got to remember the glass is half full not half empty," he said.

"We don't have to re-invent the wheel, just do the simple things better."

Although organised by the cotton industry, the conference was designed to address issues facing all agricultural communities in general, with the delegates attending from the mining, cotton, broadacre, health, education and business sectors and all of them with one thing in common - they are citizens of rural communities.

"People are really wanting to do something to help their communities but not sure what to do," Paula said.

"The conference became a rallying point for people and ideas, with the value of forming networks affirmed.

"We went into this conference with the aim to promote skills, knowledge and partnerships. We already have skilled people so we delivered new knowledge and established partnerships which

can be used to achieve change and improvement, so we are really happy with the outcomes.

"Personally the greatest achievement was bringing to the surface the passion and hopefully we've captured it and can keep the fires burning."

These fires will continue to burn next April when the second Sustaining Rural Communities Conference is held. Next year however, it will take on a new appearance.

At the conclusion of this year's event, the organising committee offered 10 individual \$1000 bursaries to delegates willing to use the funds on a project to help sustain or rejuvenate their local community. The 10 bursary-holders will then come back and share their achievements with attendees at next year's conference.

All presentations from this year's conference are available on the Cotton CRC website, while a dedicated website for Sustaining Rural Communities is in development. A request of participants was also a means of communicating with each other post-conference. A blog has been set up as a forum for sharing evolving ideas and achievements.

? To download or listen to presentations, or post of comment on the blog, go to www.cottoncrc.org.au/.../Communities/.../Sustaining_Rural_Communities_Conference.aspx



Australian Government
Cotton Research and
Development Corporation



Co-organisers Phil Armytage, Cotton CRC CEO and Guy Roth



Narrabri Shire Council Community Development Officer Alice Freeman and Cotton CRC Communications Manager Yvette Cunningham



Don Tydd



Andrew Leslie and Kate Eather



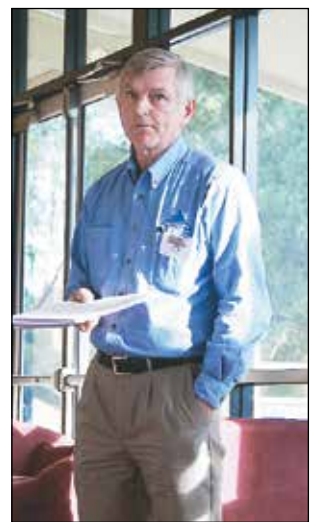
Speaker and Dubbo businessman John Walkom, Chair GoWest and Chair Regional Development Australia - Orana Region



Operations manager of UNE's remote study centre Frances Munro with Rosemary Maxwell



Wee Waa ladies Shawn Wales with Jenny Parish



Gerry McDonald, Whitehaven Coal



Judy Grills of Town and Country Nursing Services with Lucy Faithfull of Anglican Counselling Service



Wee Waa Chamber of Commerce's Pam Callachor with Cotton CRC Community Officer Kate Schwager



Councillor Andrew Lewis - Bourke Shire Mayor



Cr Ray Brown is a Moonie landholder and Mayor of the Western Downs Regional Council, with wife Lisa. He spoke about the impact of mining on communities in his electorate

Sustaining Rural Communities

National Conference

Narrabri, NSW

19–21 April 2010



Leadership vital to sustain rural communities

Professor Peter Shergold is the Macquarie Group Foundation Professor, Centre for Social Impact, University of NSW and Chair of the Australian Rural Leadership Foundation. Peter was CEO of the Australian public service for two decades, directly serving three prime ministers and eight ministers in both Coalition and Labor governments.

In his enlightening presentation he shared his view of the essential qualities of rural leadership

1 Collegiality – (Shared power and authority vested among colleagues)

- ◆ Getting things done is often impeded by organisational territoriality and turf protection
- ◆ Chimney stacks or silos, within or across organisations are divisive
- ◆ A good leader brings together different people, different organisations, creates consensus and gains collective ownership of decisions
- ◆ Not leadership by authority, leadership of consensus by hard work
- ◆ Need to be able to empathise – stand in the shoes of those we are working with

- ◆ Leaders must understand a diversity of views is positive- create a team bound by a shared vision
- ◆ Beware consultation and negotiation becoming a means to delay and procrastinate
- ◆ Convince all participants that by working together they can engender a cooperative creativity that gets outcomes that are far better than any single participant would have achieved on their own.

2 Execution

- ◆ Implementation and delivery - big ideas are nothing without a path to delivery
- ◆ Attention to detail necessary in order to get things done well – “sweat the small stuff if you are serious about delivery”
- ◆ You cannot be a leader without the management skills and knowledge of how to get things done – ideas are nothing without a path to delivery

3 Persistence

- ◆ The inspiration is good but perspiration is vital
- ◆ This is called resilience, but Peter prefers the term doggedness, “It’s dogged that

does it not thinking about it”

- ◆ Aim to learn from mistakes and keep on keeping on

4 Authenticity

- ◆ In rural life family work and community are inextricably linked moreso than in metro centres
- ◆ Don’t want leaders who don’t value what people can contribute from the wholeness of their life
- ◆ Need leaders who can harness this authenticity to get better informed outcomes driven by higher levels of commitment
- ◆ Don’t make decision based on anecdotes but informed decisions by experience

5 Pride

- ◆ Leaders often fail to exhibit why they are committed and care about issues
- ◆ Some people aren’t comfortable with exhibiting enthusiasm – need to find a different style
- ◆ Can’t be a rural leader unless you are able to convey from your leadership a pride in community and where you live and what you do and those who support you.



“Leadership needs to think global and act local.”

Want more inspiration?

All presentations from the Sustaining Rural Communities Conference are available for free download from the Cotton CRC website – go to www.cotoncrc.org.au and follow the links, or order the free CD compilation.

The organising committee also has a limited number of \$1000 start-up bursaries yet to be awarded. These incentive investments are targeted to support people seeking to make a difference in their communities with ideas and inspirations gleaned from the three-day event. While being limited in their availability, the purpose is to support people and groups who have an idea or concept aimed at strengthening, rejuvenating or promoting their community.

For more information contact Paula Jones

or Kate Schwager at Cotton CRC – paula.jones@csiro.au or kate.schwager@csiro.au
CRDC’s Rohan Boehm has also offered free use of an e-newsletter content management system which is highly versatile and proven as an effective online communication system. It will be made available to community groups looking to promote and inform others of their activities and aims.

Applicants must have attended the conference and would be expected to manage the e-newsletter system and content from their own resources after an initial training period. Contact Rohan on 02 6792 4088 or rohan.boehm@crdc.com.au

There are many opportunities for those in the cotton industry to upskill and strengthen

their workforce. Both the NSW and Qld governments have provided subsidies for growers keen to take part in certain training initiatives. For growers looking to training, skilling, vocational education or for themselves or their employees, contact Mark Hickman, DEEDI on 07 46 881 206, 0407 113 096 or mark.hickman@deedi.qld.gov.au

The cotton industry also promotes fostering future leaders, championing such programs as the Future Cotton Leaders Program and the Australian Rural Leadership Program. Limited bursaries are available for participation in these programs. Contact Helen Dugdale at CRDC 02 6792 4088 for information.



Speaker Georgie Somerset with young rural entrepreneurs Lara Wilde and Fleur Anderson.

Georgie Somerset's three challenges

- 1 Have courage to invest in people
- 2 Mentor those brighter and wiser
- 3 Invest in human capacity

Industry's role in a bright future

Industry's role

- Collaborate with other industries and stakeholders – adopt a strategic approach
- Quantify and articulate needs and concerns and share information on goals and activities
- Support communities to understand, contribute and influence policy and regulatory world impacting on them
- Quantify salary packages and communicate
- Address the poor image and low prestige around agriculture
- Develop and communicate career pathways and opportunities
- Promote the advantages of rural lifestyles



Cotton Australia Chair Joanne Grainger outlined industry's role in supporting rural and remote communities.

“Industry and community have a symbiotic relationship – both need each other to exist and flourish and naturally neither would exist without people,” Mungindi cotton farmer and Cotton Australia Chair Joanne Grainger told the conference

In terms of the importance of investing in people to sustain our communities well into the future, Joanne summed it up perfectly with a quote from Confucius - “If you think in terms of a year, plant a seed; If in terms of ten years, plant trees; If in terms of one hundred years, teach the people”.

“Industry needs healthy strong communities – to support it to secure labour and attract services,” Joanne said.

“Now there is a greater role for industry to play needs to contribute to empowering of these communities.

“In short industry takes a leadership role to identify requirements and develop and drive solutions.

“We need a greater level of capacity in our workforce and at the same time need to create an environment where people can take control of their circumstances.

What are those requirements to attract strong, capable people to our industry and communities?

“It requires a paradigm shift in the attitude from industry around building capacity and the training model,” Joanne said.

To achieve this, she said it was needed

for growers to:

- understand benefits of training
- understand ROI of training
- awareness of the training environment
- opportunities available for training
- how training can be delivered
- pathways available to staff

“When heaps of people are pushing you forward you can't go backwards,” said speaker Georgie Somerset, Queensland Rural Women's Network President.

“We need to invest more in people, not things,” she said.

“As an employer you must be clear about what you want to achieve through the people you have – the person is the critical investment.

“We seem to invest more in things like a new header, ute etc than in training, which is seen as an ‘extra’.

“But if we don't invest in people it has a significant impact – they must be encouraged, mentored and valued.”

Georgie said investing in people was a way of leaving a legacy to a community or industry.

“A legacy is an opportunity to impact today and into the future,” she told the crowd.

“People are our legacy, if we invest in them they might be our legacy - but one of the challenges is that you can't put a plaque on people.

“It takes courage and skill to implement these things.”



A new coordinated approach for implementing R&D

By Chrissy Brown



Cotton CRC Program Director Paula Jones.

In a combined effort to deliver research and development outcomes in a more targeted, efficient, coordinated and transparent manner, the Cotton CRC, CRDC and Cotton Australia (CA) have put their heads together and developed a new R&D Adoption Framework.

With reduced funding for research and extension activities in the current climate, it has become necessary to change the industry's approach to delivering research.

Cotton CRC's Program Director Paula Jones, developed the new framework and says that the industry wants to make sure that the knowledge from our research investment is used by growers and the broader community to improve their businesses and environmental performance.

"The framework and the targets within it gives the industry a way to measure its performance and will help the industry communicate all of the great changes it has already made and those changes it intends to achieve in the future," Paula says.

Through the three organisations, the industry currently invests in 15 key research areas ranging from production related issues such as pest management, water use and crop nutrition to the broader environmental and social issues impacting on the industry and its regions.

The framework "identifies areas where it is most efficient for all the three organisations to work collaboratively"

explains CRDC's Manager of Farming Systems Investment, Tracey Leven.

"Within each of the 15 areas, specific targets have been set by the Cotton CRC, CRDC and CA. The targets relate to actual practices which research suggests should become more commonly used by the industry."

Each of these targets will be delivered by Target Leads and at the farm level there will not be any noticeable change to personnel in the current extension team.

The Target Leads will work with the new General Manager of Best Practice and Research Implementation, Ken Flower who has been appointed by the three organisations.

Ken says the Target Lead's role is to support the industry to achieve their target.

"They must lead and prioritise the activities to achieve the target change needed, develop products that will deliver the research messages required to deliver change and monitor the progress of this change over time," he said.

"Everyone will act regionally but think nationally."

A key strength of the new framework is its seamless integration with the release of the new online *myBMP* program, scheduled to commence this year.

Ken says *myBMP* will "be the foundation for all research implementation, although it will not be the only way to access latest research and best practices".

The website is much more than a means of identifying the practices that are recognised as 'best' by the industry. It is a complete management tool for cotton business, offering users the ability to access information from a broad range of sources, to manage farm records, to benchmark farm performance against the rest of the industry and to directly access expertise to assist with specific inquiries. One of the advantages of the web-based system for industry is that it will be easily updated to best practice as it changes.

The industry's use of knowledge generated by research will be assessed against the new R&D Adoption Framework.

It will be used to check progress and report on the targets reached.

Paula Jones explains that "the framework is a way to capture what the industry has already achieved, what the industry is planning to do and who is responsible for making sure that target is achieved.

"This framework is a novel approach to delivering research directly to the grower and as usual the cotton industry is at the forefront of this innovation."

The R&D Adoption framework will be constantly evolving as issues, priorities and resources change. Implementation of the Framework has already begun to direct the work plans of extension staff.

Ken Flower, 0457 811627
mailto:kenneth.flower@csiro.au

“There will be more focused implementation with a group of people across the three organisations to get more critical mass.”

Newly appointed General Manager of Best Practice & Research Implementation Ken Flower (right) catching up with Namoi CMA Director Dr Hugh Barrett and Boggabri grower John Watson at the Sustaining Rural Communities Conference in Narrabri recently.



Leading the quest to increased adoption

“Deliver more, better and faster” is the primary aim of Ken Flower, recently appointed General Manager of Best Practice & Research Implementation of the Cotton Catchment Communities CRC, CRDC and Cotton Australia (CA).

With the three organisations’ new strategy to more effectively target R&D adoption, there was a need to find the right person to lead this new direction that will cover a wide range of issues from production and ginning through to supply chain and policies.

Cotton CRC CEO Philip Armytage said Ken has had extensive experience encompassing civil engineering, business development, strategic restructure, finance operations and research and technology management.

Ken began his career as a civil engineer in Victoria progressing to shire engineer and then later became the first general manager of Narrabri Shire.

With the prospect of transgenic cotton entering the Australian cotton industry Ken lead Deltapine Australia from 1996 through to 2000.

“This was a very exciting time in Australian cotton with increasing area planted and many exciting challenges with the introduction of this new and impressive Bt technology in the cotton planting seed,” says Ken.

Ken recently returned to Narrabri after working internationally with Syngenta Seeds firstly in Malaysia in 2000 then in Switzerland where he managed Syngenta’s global cotton seed and cotton biotechnology business at their head office.

In 2004, as Seeds Lead for Syngenta Sub-Sahara

Africa, Ken spent three years based in Johannesburg, South Africa, with the main business being corn and vegetable seeds. Returning in 2007 to head office in Switzerland he then carried out the role of Marketing Specialist for the design of a new company management system.

“We have had an experience of a lifetime in the positions and locations we have been part of and there are many things to learn on this great planet we live on, but it is good to be back in the cotton industry in Australia,” he says.

Ken accepted the role of managing the new strategy for delivering cotton R&D outcomes, which is based on the coordinated framework for R&D adoption developed by the Cotton CRC, CRDC and CA. He is very clear on the need for research outcomes to be driven by the industry’s priorities and that the findings of research are made into a product that can really drive change on the ground.

“The greatest value comes from working out what product or production changes will best deliver the results of research,” he said.

“There is so much very good research done with some very clear benefits to growers and communities.

“It is exciting to be able to package this for the wider grower and community use.”

An integral part of Ken’s role will be overseeing the roll-out and ongoing use of the cotton industry’s powerful new online cotton production, ginning and classing tool *myBMP*, which he says will be extensively trialled in June and July with 15 growers until the 2010 Australian Cotton Conference, after

which time the *myBMP* team expects to have the program fully up and running.

With the drought causing a reduction in funding and resources available for R&D extension, the need for a highly efficient implementation strategy was needed. Ken says that the industry is changing its approach to extension.

“There will be more focused implementation with a group of people across the three organisations to get more critical mass.”

He also explains that he will be leading this team which will focus more on how the R&D outcomes are delivered by having Target Leads focusing on their target issue for an industry-wide program that will generate on the ground change rather than an extension person focusing on all the programs for their particular regional area.

“The cotton industry extension team is much smaller than in the past but they are energised to work together in our new structure to deliver more positive outcomes, better, and faster. There is a real sense of breakthrough change for the better,” he said.

This challenging new role will be an interesting new direction for someone who has worked in agriculture internationally but Ken explained his interest, saying that the Australian cotton industry is indeed a world leader in technology and best practices due to the innovative growers here and the world leading research which they fund, and “I look forward to contributing my experience to the success of the cotton industry in Australia”.



A myBMP team has recently been established to prepare for the August 2010 launch and to roll out the initiative to the broader Australian Cotton Industry, which includes Rohan Boehm, Bruce Pyke, James Houlahan, Jim Wark, Ken Flower and Stu Higgins, pictured recently at a myBMP meeting

Cotton conference launch of *myBMP*



Allison Davis

Industry has heeded a clear message from growers that any new BMP system must be flexible to allow for the many and varied farming operations across the industry.

While the name *myBMP* may give the impression that it is just a new version of the old BMP system, nothing could be further from the truth.

The Best Management Practices program has undergone a complete metamorphosis with the result being an innovative, flexible, web-based system, structured to offer cotton growers extensive access to cutting edge research and management tools while allowing growers to choose how they wish to incorporate *myBMP* into their farming operations.

myBMP is the result of industry-wide consultation with growers, researchers and industry bodies taking into consideration the requirements of the cotton industry now and into the future. A clear message from growers was that any new BMP system must be flexible to allow for the many and varied farming operations across the industry.

This has certainly been achieved with a completely new structure, content and a more streamlined process. With this in mind the name change to *myBMP* was designed to reflect the more personalised, tailor made system.

Another clear message from growers was that the practices in the program should be supported by further information and resources. All of the identified best practices

in the *myBMP* system are linked to the latest industry research as well as explanations, resources, tools and templates to assist growers in understanding the how, what, why and when behind each practice and making the process of becoming “the best growers they can be” as simple as possible.

Prior to its launch in August 2010, *myBMP* will undergo an extensive testing and training phase with a cross section of cotton growers from across the industry. This is to ensure that the system is reliable, efficient, simple to use and ultimately offers real value for the grower.

A *myBMP* team has recently been established to prepare for the August 2010 launch and to roll out the initiative to the broader Australian cotton industry.

This team consists of six core members and is led by Ken Flower, the General Manager for Best Practice & Research Implementation.

“I am excited that *myBMP* is a quality product, supported by an enthusiastic team and is fully backed by the three key industry bodies,” Ken said.

Working alongside Ken on the transition of *myBMP* from development to launch and implementation is former grower and previous *myBMP* Steering Committee Chair, Stuart Higgins. Stuart said it was the perfect time to

have Ken on board after the past few years of effort by so many stakeholders in the industry.

“Developing *myBMP* has been a true industry collaboration and we are all looking forward to seeing it bring great value to Australian cotton growers and the wider industry,” he said.

The rest of the *myBMP* team includes Allison Davis, the *myBMP* Service Manager, who is responsible for the management and operations of the site and for ensuring growers receive quality, timely support.

Sandra Deutscher is managing the partnership between *myBMP* and the industry’s research community and Rohan Boehm is leading marketing and communications support.

Jim Wark, as Business Lead, is responsible for grower relations and will focus on training and testing and the structured roll out of the initiative.

Jim said “Being new to the team, I am greatly impressed with the *myBMP* system and look forward to working closely with growers to optimise the value *myBMP* brings to their businesses.”

There will be a staged rollout of *myBMP* following the August 2010 launch, so stay tuned for updates from the team.



Growers testing out the *myBMP* system in the early stages of development at Warren last year.

How is *myBMP* different, what makes it better and what's in it for you?

A system for all

– from the seasoned BMP user to growers who have never grown cotton or used BMP before

myBMP practices provide guidelines

– and practical advice on how to comply with legal requirements ranging from the storage and use of chemicals to human resource requirements

A personalised system

– tailored by the industry for the industry - *myBMP* allows users to work through the program modules in the order that suits their own business priorities

Simplified content and delivery

– being web based, *myBMP* has done away with clunky manuals and paper based assessments. All information is lodged electronically and stored in a confidential farm online filing cabinet – *myBMP* allows the user to upload documents relevant to their *myBMP* practices in one easy to manage place

A new system of levels

– Level 1 is the entry level that covers off legal requirements and Level 2 contains what is considered industry best practice. Together these two levels comprise the content required to complete *myBMP* certification. Levels 3 and 4 are aspirational levels that cover those practices that will be considered best practice in the next five and 10 years respectively

Extensive resources

– every practice is linked to its own mini reference source, with a pop up box that provides definitions, explanations, templates, calculators and links to further information. No more need for Google searches because *myBMP* provides access to all the latest information and research results in one easy to access place

A new and streamlined auditing process

– those growers who choose to seek accreditation, will find the process easier to manage

No doubling up

– with the introduction of a web-based Grains BMP in Queensland, cotton's *myBMP* has the ability to cross reference *myBMP* practices against one another, automatically populating completed practices from one system to the other

Need Help

– *myBMP* offers a whole range of assistance options – users who are having issues with the site or just need some advice on *myBMP* can contact the *myBMP* service desk either by phone on 1800COTTON or emailing us at admin@mybmp.com.au



Volunteers are a critical management challenge for the industry. Volunteer cotton was very evident to the researchers on many farms – in fields, adjacent to roads and around dams and irrigation channels.

Late season disease survey

The industry's disease risk report card for the 2009/10 season is in.

The results are mixed, as that the industry appears to be winning the battle against some disease risks such as Fusarium wilt, however boll rots have caused significant yield losses. Further risks associated with cotton volunteers and Verticillium wilt are posing greater risks than ever before to future production.

This information is collected through detailed surveys by cotton pathologists from Queensland Department of Employment, Economic Development & Innovation; Industry and Investment NSW and in conjunction with CSD.

Volunteer cotton must go

Growers are again being urged to manage volunteer cotton, with recent disease surveys showing a high incidence of these plants around farms.

The fact that 21 of the 28 Queensland farms surveyed had volunteer cotton present led Queensland's senior cotton pathologist, Linda Smith to emphasise the importance of being vigilant in removing volunteers this winter.

"It is extremely important to remove these unwanted plants as they can harbour both pests and diseases, carrying them from season to season providing an inoculum source for earlier re-infection of next year's crops," Linda said.

"Volunteers have become an even more significant issue with the recent introduction of the Solenopsis mealy bug."

Volunteer cotton was commonly observed during the NSW survey of 82 crops between Griffith and the northern border. While exotic Solenopsis mealybug was not observed and at this stage has not been detected in NSW, these volunteers are also hosts for other secondary pests such as silverleaf whitefly and aphids.

NSW cotton pathologist, Chris Anderson, said volunteer cotton was very evident on many farms – in fields, adjacent to roads and around dams and irrigation channels.

His advice echoed that of Linda Smith, "I encourage growers to control volunteers to minimise early season pest problems in 2010/11".

"Farm hygiene is an important part of this, but so too is making sure that crop destruction after picking is executed with precision. Regrowth from stubs is a high risk for diseases and pests," Chris said.

Highest boll rots ever recorded

The incidence of late season boll rots in Queensland was higher this year than in any of the last six seasons, with rises recorded in all districts, but particularly in

the Macintyre Valley and in Emerald.

In NSW the statistics were more startling, with this season recording the highest incidence of late season boll rots since surveying began in the early 1980s.

The highest levels were recorded in the Macintyre Valley, where on average 17 percent of all bolls in surveyed fields had been lost to boll rot. Emerald had an incidence of 11.9 percent of bolls lost to boll rots and St George 9.8 percent. In contrast the lowest levels were recorded in the Darling Downs at 1.3 percent.

Based on these survey results, the estimated loss of yield to boll rots across the industry this season was approximately 180,000 bales.

Chris explained that risk from boll rots isn't simply a function of the amount of summer rain received.

"There were also more rainy days in 2009/10 indicating that with the rain came prolonged periods with lower radiation and milder temperatures.

"Boll rot fungi, like Phytophthora, thrive during prolonged wet conditions, infecting bolls when soil is splashed up into the canopy.

"Bolls damaged by insects will also fall prone to secondary invaders like Fusarium and Alternaria during these wet periods."

The total loss of value to the Australian crop this season due to wet weather, could exceed \$80 million.

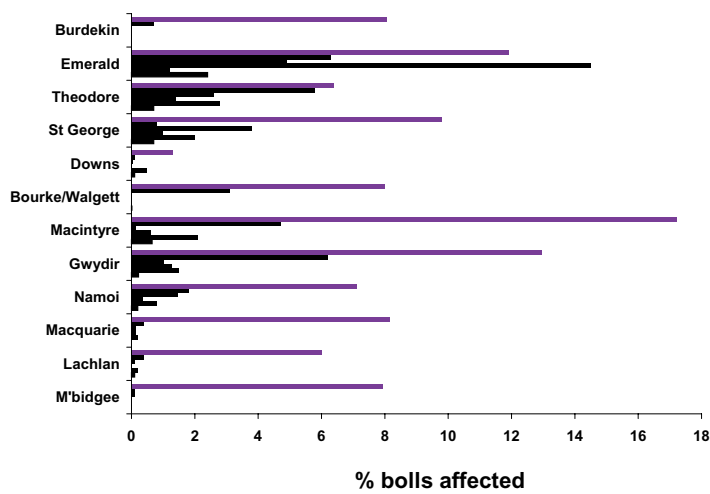
In addition to yield loss from boll rots, the impact of prolonged wet weather on quality was profound in Emerald this season.

Rick Jones, Queensland Cotton, said in Emerald, the average discount would be around \$45/bale, mostly due to colour and spot downgrades.

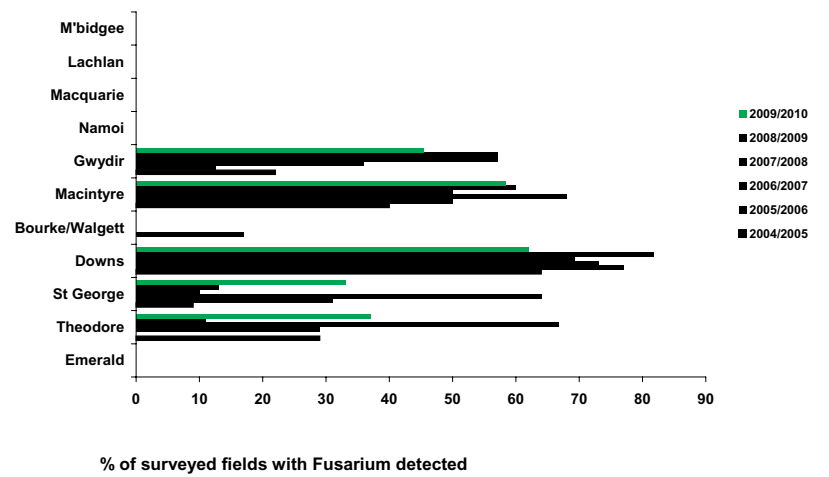
So what can be done to prevent yield losses from boll rots and wet weather?

Cotton varieties do not express appreciable differences in their tolerances to boll rots, and there are currently no fungicide options.

Boll rots - 2009/10 versus the previous 5 seasons



Fusarium wilt - 2009/10 versus the previous 5 seasons



Industry research suggests that the best tactics are to try to spread planting dates and encourage open architecture in the crop canopy.

CSIRO senior research agronomist, Steve Yeates, reflects on the learnings from the cotton agronomy work being undertaken in the Burdekin in recent seasons.

“Where the timing of summer rainfall is more consistent as it is here, planting dates can be set to ensure the fruit setting period occurred after the worst of the rain,” Steve said.

“However, for most cotton growing areas, the timing and quantity of summer rainfall is highly variable between seasons. The narrower the window in which crops are planted, the higher the risk of big losses if rainfall occurs at the wrong time.”

Steve explained the ways in which growers can encourage open architecture in the crop canopy.

“The canopy can be influenced by both varietal choice and management practices.

“This has been an important consideration in the Burdekin cotton agronomy research being undertaken by Paul Grundy and myself, as in this environment we need to capture the maximum amount of sunlight possible. Establishing only five to six plants per metre is one management option used here.”

“The less determinant a variety is, the greater the tendency of open canopy. Okra leaf types also encourage openness in the canopy, but variety is only part of the story. Decisions on insects, nutrition and water are also critical.

“Growers need to work with their consultants to tailor early season management. The lowest bolls are at the highest risk of loss, so perhaps in more humid areas crop management should not be aiming to retain them in the first place.”

When it comes to management practices, the industry’s trend towards the use of wide rows in limited water situations has shown that an added benefit of this is lower risk of boll rots.

Chris Anderson noted that while only a few crops in the survey were in wide row configurations all of these had notably less loss to boll rots than fields planted to one metre rows in the same valley.

“Wide rows appear to be an effective way of maximising airflow through the crop canopy. However growers need to weigh up whether the use of wide rows would enforce greater yield penalties than would the occurrence of boll rots.”

Fusarium wilt halted, while Verticillium spikes in the Namoi.

It’s good news where Fusarium wilt is concerned, with its incidence significantly reduced on the Darling Downs in the last two seasons, compared to the period between 2002/03 and 2007/08. According to Linda Smith, three factors are likely to have contributed to this trend: resistant varieties, delayed planting and Bion seed treatment.

“Later plantings assist rapid germination and good seedling growth and contribute to a reduction in the development of Fusarium wilt and seedling disease,” Linda said.

On the Darling Downs, many growers now delay planting by two to four weeks so that cold stress doesn’t exacerbate disease risks during seedling emergence and crop establishment. On the Downs six out of 13 fields in the disease survey were planted after October 15, 2009 and the other six were planted in November.

“While spring rainfall has a strong influence on planting, these planting dates suggest growers are responding to the disease risks associated with planting early,” Linda said.

“The use of Bion treated seed may also have contributed to the reduction in the incidence of Fusarium wilt – over 1000 tonnes of planting seed carrying the Bion seed treatment sold in Australia in 2009.”

In the Macintyre and Gwydir valleys Fusarium was observed in the majority of surveyed fields, but at low levels which were similar to last season. Importantly no new detections of Fusarium wilt were made in the 2009/10 season.

Chris Anderson surmised that this is probably explained by both improvements in varietal F rank and the dry warm conditions in November that were unfavourable for infection of plants by the Fusarium wilt fungus.”

While the news from recent surveys is good, growers and consultants are reminded to keep sending diseased cotton samples to the industry’s pathology group in Queensland for confirmation of Fusarium.

“Even though the incidence of Fusarium wilt has declined, it is important that monitoring continues,” explained Linda.

“Monitoring assists in the detection of newly emerging strains of the pathogen and exotic strains if they arise. It is important feedback to the cotton industry’s breeding program.”

The other wilt disease, Verticillium wilt, was again common in the Namoi Valley. The average incidence of detection was 13 percent of plants in 80 percent of fields, much higher than the NSW average of 2.4

percent of plants in only 36 percent of fields.

This is an above average detection for Verticillium wilt and reflects the wet conditions in December, January and February.

“Yield loss from Verticillium wilt tends to be underestimated. Where there is a long history of cotton production, growers should carefully consider disease tolerances as part of varietal selection and be growing cotton in rotation with other crops,” the pathologists suggest.

Herbicide damage trends downward

Phenoxy hormone damage has been a major problem for the industry in recent years, The 2009/10 season saw the Cotton Map service introduced to all valleys in the industry. The late season survey results support anecdotes that the service is having a positive impact.

Last season, damage was evident in all cotton growing regions with highest incidence in the Namoi Valley where 21 percent of fields were affected.

While hormone damage was again detected this season in crops in the Bourke/Walgett region, Gwydir, Namoi and Lachlan valleys, it was nowhere near as widespread as in previous years and damage was mild.

For example, only one percent of fields surveyed in the Namoi were affected. This is excellent news for the industry.

Surveillance for exotic pathogens

Texas root rot, cotton leaf curl virus, blue disease, defoliating Verticillium, hypervirulent bacterial blight and exotic Fusarium wilt are exotic pathogens listed by the Australian cotton industry as serious potential threats to the future of the industry. Absence data was collected for all six pathogens this season.

Acknowledgements

Queensland surveys are undertaken by Linda Smith, Linda Scheikowski and John Lehane, Queensland DEEDI, in collaboration with Stephen Allen, CSD, as part of the Cotton Fusarium Wilt Management project, funded by CRDC. NSW surveys are undertaken by I&I NSW’s Chris Anderson and Peter Lonergan, with assistance from Alison Seyb and Bethany Cooper, as part of the Diseases of Cotton project, funded by CRDC and the Cotton CRC.

📧 Linda Smith, <mailto:linda.smith@deedi.qld.gov.au>
 Stephen Allen, <mailto:stephen.allen@csiro.au>
 Chris Anderson, <mailto:chris.anderson@industry.nsw.gov.au>



Bruce Pyke, General Manager
R&D Investment CRDC

Production performance and value for quality high on CRDC 2010-11 agenda

By Mary Ann Day

CRDC is planning to invest \$9.68 million in the coming year into research and development that will continue to drive industry performance improvements and seek new opportunities to add value to its premium end products.

CRDC General Manager for R&D Investment, Bruce Pyke, explained that even though the Australian cotton industry is already at world's best in many areas of performance, CRDC believes there is a need to continue to improve if we are to achieve 'the quest for sustainable competitive advantage'.

"The 2009/10 Australian cotton crop is expected to be between 1.5 and 1.6 million bales. This will be the fourth crop in succession below two million bales as a result of drought and associated reduced availability of irrigation water," Bruce said.

"Reduced capacity to achieve full production not only affects farm businesses, but it also impacts on the level of funding available to CRDC for investing in R&D and sustaining research capacity.

"Despite the major challenge drought has created, the industry has continued to improve performance in many areas over the last five years, which is a trend that informs CRDC of the direction for future R&D investments which will continue to help the industry achieve further gains."

Bruce stressed that water use efficiency continues to be a major issue for CRDC to tackle through R&D investment.

"Water use efficiency has improved by an average of four to five percent per year over the last decade as a result of improved yields and the adoption of more efficient irrigation technology and management practices," he explained.

"The Rural R&D Corporations (RDCs), including CRDC, play an important role in planning, investing in and managing research and development for their respective industries. In addition, many of the RDCs work in collaboration to address critical areas where a national approach is also needed such as irrigation and climate variability and change.

"With the closure of Land and Water Australia in 2009, CRDC took on the role of Managing Agent for the National Program for Sustainable Irrigation (NPSI).

"NPSI will be extended in 2010-11 and will work with irrigation industry stakeholders to create a vision for the future direction for irrigation R&D.

"NPSI's work will complement, and hopefully inform, government driven developments currently underway, including the Council of Australian Government's National Water Knowledge and Research Strategy and the Primary Industries Standing Committee cross-sector Water Use in Agriculture initiative.

"CRDC believes that a long-term plan and commitment to irrigation R&D that services the broad needs of agriculture is of national significance and will continue to work with others in the irrigation sector to achieve this challenging goal."

Another key focus in the coming year will be investing in R&D to improve the productivity performance of Australian cotton.

"Cotton operates in an environment where there is an ever-increasing demand for land, water, food, energy and labour," he said.

"Previous research has helped the Australian cotton industry to increase productivity and make better

use of scarce resources. Productivity has risen by an average of four per cent per year over the past decade which is at the high end of cotton performance world-wide. (See graph)

"CRDC's investments in the coming year will seek to sustain this excellent productivity growth as well as improve routes to market for premium Australian cotton."

Improving the rate of adoption of R&D knowledge is an important contributor to maintaining high productivity growth, Bruce said.

He said during the last year, CRDC, the Cotton CRC and Cotton Australia had collaborated in devising a range of new and innovative methods to deliver knowledge and information to the industry.

These will specifically address newly defined grower and industry needs through online options and greater engagement with agribusiness.

In 2010-11, a new model for supporting adoption of industry R&D linked to *myBMP*, a new web-based replacement system for industry's very successful Best Management Practices Program will be implemented.

The *myBMP* system will allow cotton growers to self-assess their performance and practices in a more flexible way than ever before and with access to resources that previously were time consuming to find and not able to be tailored to their business.

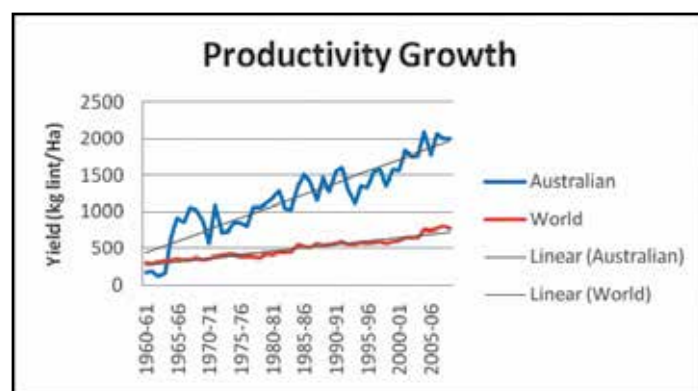
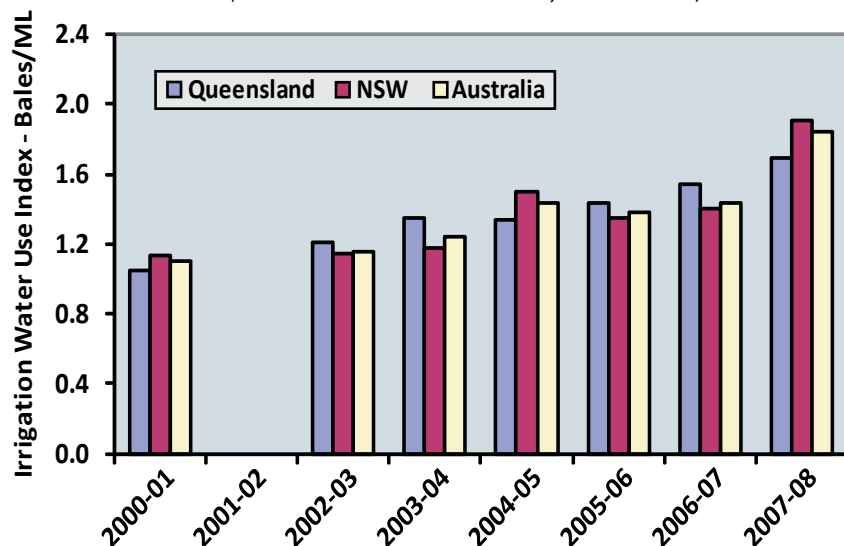
"So, 2010-11 will be an exciting time for improving support for R and D adoption," Bruce says.

"In addition we have a number of new developments in the pipeline."

Continued page 32 (back page) ...

Estimated Irrigation Water Use Index (IWUI) for Australian Cotton 2001 to 2008

(*based on ABS water data and Industry Production data)



Source: CRDC – from International Cotton Advisory Committee data



The 2010 Australian Cotton Conference is being held at the state of the art Gold Coast Convention and Exhibition Centre from August 10-12



Register now for the 2010 Australian Cotton Conference

Registrations for the 2010 Australian Cotton Conference, to be held on the Gold Coast from August 10-12 are now open. Delegate costs have once again been kept to a minimum, and if

you register before July 1, you'll save a further \$25. If you're a grower or a general delegate and you register three or more people, you'll receive a further 10% reduction – so get in quick!

Delegate Type	Rate	Change from 2008	Discounts
Grower	\$375	Increase of \$25	Early bird (-\$25), 3 or more regos: -10%
Spousal	\$200	Increase of \$25	Early bird (-\$25), 3 or more regos: -10%
General	\$520	Increase of \$25	Early bird (-\$25), 3 or more regos: -10%
Student	\$220	Unchanged	Early bird (-\$25), 3 or more regos: -10%
Day pass	\$300	Reduced by \$30	Early bird (-\$25), 3 or more regos: -10%
Day exhibitor	\$85	Increase of \$10	No discounts



Past, Present, Future:

Three researchers give their perspectives on their roles in cotton research and the Australian Cotton Conference



Past Researcher

Dave Murray

Entomologist, Queensland Department of Employment, Economic Development and Innovation

Dave Murray has been at the forefront of cotton entomology for 30 years, and remembers well his first presentation to the inaugural Cotton Conference in Goondiwindi in 1982.

Since then, Dave hasn't missed one, although 2010 could be his final year as he transitions to a well-earned retirement.

Dave started with the Queensland Department of Primary Industries at Nambour in 1972 working in entomology for the horticulture industry. In 1980 he transferred to Emerald where he was responsible for field crop entomology. His first mission was to test the SIRATAC system in Central Queensland, which was in those days at the cutting edge of IPM technology.

"SIRATAC was a computerised pest management decision making tool, the first of its kind in cotton. There were no PCs in those days, but we had funding for a computer terminal in Emerald through which we'd communicate with the main



Three researchers give their perspectives on their roles in cotton research and the Australian Cotton Conference

... from page 20,

Past Researcher

Dave Murray, Entomologist, Queensland Department of Employment, Economic Development and Innovation

frame in Narrabri and it would churn out the results and send them back to us. It gave recommendations on what to do for a particular scenario and took a softer approach to pest management," he said.

"The terminal we had was a massive thing that looked like a large printer that spewed out a lot of paper.

"To be honest, I wanted to work on this project because I didn't know that much about cotton and it was a way to help me make better decisions and to build my cotton knowledge – if something went wrong, I could always blame the computer!" Dave jokingly recalls.

Following three years evaluating SIRATAC in the Emerald Irrigation Area, in 1983 pyrethroid resistance was detected, and was subsequently found in all other cotton valleys. Dave played a key role in managing this issue.

"This was a great disappointment to the industry because our wonder group of chemicals suddenly were not working properly anymore, and after only five years of use. But the cloud had a silver lining because it forced us to reassess the use of this group of chemicals. We recognised that pyrethroids pretty much killed all insects – good and bad - in the paddock.

"Spider mites and aphids became terrible secondary pests, mainly because the pyrethroids killed the beneficial insects that would naturally control them. We took a closer look at IPM and it was another trigger for a change in practices," he said.

In 1985, Dave moved to the Toowoomba Office of the Queensland DPI to complete his PhD, which is where he is still currently based.

His PhD looked at the "overwintering" of heliothis, or the mechanisms the pest uses to survive the winter. This work gave the industry fundamental knowledge on its biggest pest and ultimately led to the now standard practice of pupae busting.

"I looked at the timing of when the grubs entered and emerged from dormancy and their survival rates under various conditions. This research together with that of Angus Wilson, showed that they did survive from one season to the next and therefore needed to be dealt with prior to planting by pupae busting," Dave said.

Dave's next big project was in studying the population dynamics of heliothis – the two major cotton pests: the Cotton Bollworm found locally and the Native Budworm that largely originated in Central Australia during favourable seasons.

"We looked at the roles of different crops in the farming system and how they influenced the population dynamics of these two pests. I was also involved in the Heliothis Inland Research Group where we set pheromone traps throughout Central Australia to monitor populations and look for potential movement of moths into cotton-growing regions," Dave said.

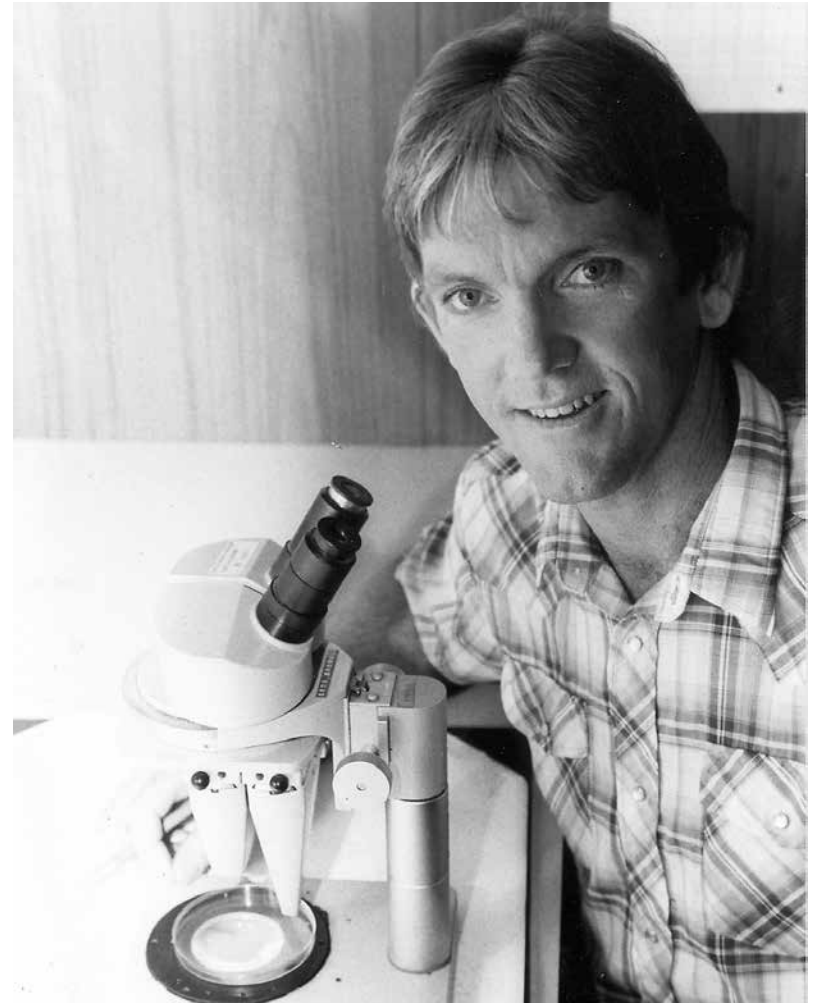
In the late 1990s, Dave was at the forefront of Area Wide Management, which was another big step forward in managing pests on a much broader scale.

"It took IPM on the farm to the next level, and looked at how we could reduce populations of pests by looking at all the potential host plants on the farm and neighbouring farms, not just cotton.

"At the same time we had major problems with high pest pressure and the overuse of chemicals that in turn caused social and environmental issues for the industry. Not to mention the enormous cost to growers who were spending up to \$1000 per hectare on chemicals, compared to about \$350 now.

"Area Wide Management brought together groups of growers and there was lots of interaction and knowledge exchanged which united the industry. The Cotton Conference at this time was still very much focussed on pest management and dealing with the crises of the day," Dave said.

Over the next decade, Dave led the Entomology team in Toowoomba, dealt with numerous outbreaks of new pests such as silverleaf whitefly, conducted pest management research across other cropping systems such as grains and introduced an egg parasite and a virus to successfully help control heliothis on the Darling Downs.



Dave Murray as a young scientist, Emerald 1982

"My team's work in introducing an egg parasite from Kununurra as a bio-control agent for heliothis was a highlight of my research work - levels of egg parasitism are now more than 90 percent on the Downs," he said.

When asked about his 30 years of participation in Cotton Conferences, Dave reflects on the many challenges the industry has faced and how we need to remain vigilant.

"My first talk at the first conference was about 'pinkies' or Pink Spotted Bollworms which were a major pest in Central Queensland at the time. We'd done some work in trapping and monitoring populations and so could provide advice on how to manage them. Avoiding ratoon cotton was the answer because they survived the winter in the crop residue on the soil surface, so this needed to be managed by crop destruction and incorporation.

"I remember the first conference was very informal, more like a grower meeting, and a far cry from where we are today. We didn't have research bodies at the time like the CRDC or the Cotton CRC, so most of the research work was done by Universities or Departments of Ag.

"I think we need to be very aware of the generational change occurring in the industry and to make sure the children of growers who went through the tough industry times are educated in what was experienced. They need to understand the background to why we need such sound pest management practices so that they remain vigilant and we don't return to the 'bad old days'.

"We need to preserve the technologies we have, like Bollgard II, by making sure we continue to pupae bust and plant the correct refuges and do all the activities that need to be done to ensure our future.

"The conference is a great opportunity for the exchange of knowledge. In the past they were talk-fests, but now all sectors of the industry are there and so it provides a valuable networking opportunity. My only disappointment is that it's always the leading growers and the innovators that attend, and I'd like to see more of the rank and file growers get along too," he said.



Present Researcher

Dr Greg Constable

Leader of the Plant Breeding Program, CSIRO and Stream Leader, CSIRO Cotton

Dr Greg Constable attended and presented at the first official Cotton Conference in Goondiwindi in 1982 and has attended every one since. He recalls that there had been smaller meetings at Narrabri in 1969 and Manly in 1974 as precursors to the first formal gathering.

With almost 40 years experience as first a research agronomist with the NSW Department of Agriculture, and then a plant breeder with CSIRO Plant Industry, Greg has seen many challenges in the industry come and go.

Currently involved in the coordination of about 20 cotton scientists in Canberra, Narrabri and Geelong, Greg also manages his own plant breeding program for fibre quality and yield, particularly for full season regions. He's seen the cotton breeding program almost treble in size and resources over the last 20 years.

"I was first based in Tamworth in 1970 because the Department of Agriculture were uncertain about the future cotton industry. I've been based at the ACRI in Narrabri since 1972, apart from three years in Canberra from 1978 to 1981. My role currently embraces plant breeding, biotechnology, agronomy, crop management and processing," he said.

Greg's memories of the first Cotton Conference were of a drafty venue in Goondiwindi with most presentations focussed on agronomy and pest management.

"The conference was held in the CWA Hall, a bit less salubrious than today's conference venues, and was attended by lots of growers who were hungry for information as the industry was under rapid growth at that time.

"There were lots of presentations on entomology and pest management and my talk was on crop agronomy. The conference was a very constructive exercise in reviewing the research and technology available at the time.

"Conference technology was a little less advanced. I well remember John Barber, now a cotton consultant in St George, using his lunch wrapper, still with butter all over it, as an overhead during his presentation!

Greg's current research is focussed on fibre quality, maximising yield and breeding varieties suitable for longer seasons.

"We also spend a lot of time matching new biotech traits with varieties and how to get the best fit in different cotton growing regions.

"After eight years of research and trial work, with CSD we should be launching two new high yielding varieties for the 2010-11 season, both Bollgard II/RRFlex varieties. It'll be great to see all that work come to fruition," he said.

As for the industry's present challenges, Greg sees many of these stemming from the public's misconceptions about cotton production.

"Our greatest resource challenge is water, and the reductions in water availability we've seen over the last decade are a result of drought and new policy," he said.

"This means that one aspect of our research is to develop high value cotton that may maintain producer viability with less water, at the same time making sure that our cotton varieties are disease and insect resistant," Greg said.

Future Researcher

Dr Nicola Cottee

Post Doctoral Fellow, CSIRO Plant Industry, Narrabri

After completing her PhD, Nicola Cottee started in July 2009 as a Post Doctoral Fellow based at ACRI Narrabri, funded by Cotton Breeding Australia, the Joint Venture between CSIRO Plant Industry and Cotton Seed Distributors.

Part of a group of upcoming cotton scientists, Nicola's project is focused on developing methods for screening breeding lines for heat tolerance. This is a natural follow-on from her PhD work.

The project involves screening breeding lines from warm and hot climates like Australia, USA, India and Pakistan.

The aim is to find a simple way to test tolerance to high temperatures so that plant breeders can use these screens to breed varieties most suitable for the hotter cotton growing regions here in Australia.

"At the end of the day I want to find a way to determine heat tolerance in plants and the results will apply to all types of plants and any type of stress, for example salt, cold or drought," Nicola said.

"One of the interesting things about my project is that it's not just looking at one particular protein or one particular part of the production system. I am testing for tolerance from the whole crop level, right down to the individual genes.

"We look at yield in a whole field or on a plant, how the gasses move in and out of the leaf, enzymes, cell walls and finally how genes are turned up or down by exposure to temperature. It's very complicated because we look at the scales of heat tolerance for all these levels, for plants grown in the field and in the glasshouse.

"We're about to harvest the current cotton crop which looked at 12 cotton lines in the field and 30 in the glasshouse. I have already found differences between the lines and now I have to see if they are the same for the field level right down to the gene level," she said.

Nicola sees communication as one of the industry's future challenges, as well as job security for young researchers due to project funding having short life cycles.

"One of our challenges is to be able to turn our research work into positive messages for the community, which can make a difference in changing negative public perceptions.

"We can do this by collaborating with other agricultural industries and the research community both here and overseas. There is so much to learn from the experiences of others and I think this is an opportunity for the future.

"I have enjoyed incredible support from the cotton industry ever since I was an undergrad student and would also say that the uncertainty around the future of agricultural research at the moment is a difficulty for young researchers wanting to make a career in cotton."

Nicola's first cotton conference was in 2008 where she presented the findings of her PhD to a large crowd of interested growers and industry.

"I see the cotton conference as an important way of facilitating communication between researchers, growers and other sectors of the industry," she said.

"It was great to hear different people's perspectives on the same issues and to realise that they can come from different places. It also helped me to see the broader perspective of where the industry's going because sometimes it's hard to place the work you do in the bigger picture," Nicola said.



Young cotton scientist Nicola Cottee is looking at heat tolerance in cotton



“Fashioning the Future”

Program Summary

Day 1: 10 August 2010

Session 1: Fashioning the Future

- Welcome Address: Fashioning the Future, the Way Forward
- The Global Future: food, carbon, water, population
- 2029 Australian Cotton Industry Vision
- Water for the Future, implications for the Australian cotton industry

Session 2:

Water Sharing for the Future – Industry, Environment, Communities

- The Murray Darling Basin Plan
- Water sharing for the environment
- Water scarcity: socio economic implications on a rural community
- Priority issues and how do we respond?

Session 3: Farming Systems for the Future

- Cotton yield: king or queen
- Soil Carbon - crop and soil values
- Nutrition - building a long term picture
- Energy - implications and industry case studies
- Irrigation systems
- Managing for high cotton yields and risks of pushing the future farming system
- A new R&D knowledge landscape for the future

Evening

Welcome Reception

Please note: This program summary is subject to change. For program updates, please visit <http://www.australiancottonconference.com.au>

Day 2: 11 August 2010

Session 4:

- **Trade and Markets** Australian Cotton Shippers Association
- Commodities, interest rates, Aussie dollar, economic outlook
- Managing risk for growers
- World cotton outlook
- Australian cotton outlook
- What ICA does for Australia - Integrity in World Trade

Session 6a and 6b: Concurrent

6a: Branding Australian Cotton Value Chain Forum

- CRDC value chain and premium cotton initiative
- Textile and yarn market overview/trends
- Textile, clothing and footwear sector trends and opportunities
- What brand owners want

6b: Transgenic Farming Landscapes

- Pest management in the future
- What's changed in pest and weed management since the introduction of biotech traits
- Bt cotton as part of the ecosystem in farm landscapes
- Farm health statistics - are cotton farms safer places to work?

Session 5: Positioning Australian Cotton for the Future

- Generic commodity to premium product
- Macro view of global cotton movements and how Australia fits with the competition
- Sustainable cotton
- Branding Australian Cotton

Session 7a and 7b: Concurrent

7a: Branding Australian Cotton Value Chain cont.

- Supply chain management - the Izumiya experience
- New spinning technologies & opportunities for Australian cotton
- Advancing our fibre from dirt to shirt
- Australia's Environmental footprint - organic versus BMP

7b: Transgenic Farming Landscapes cont.

- Managing transgenic versus conventional cotton systems - a consultants perspective
- Testing the strength of the resistance management plan for Bollgard II
- Managing cotton volunteers - farm case studies
- Herbicide resistance - prevention is better than cure

Day 3: 12 August 2010

Session 8a and 8b: Concurrent

8a: Sustaining the Farm Future

- Sustainability and the future
- myBMP - get online and do it
- Future tools for farmers
- New picking systems: how technology is changing the industry
- Our family farms and the second generation of cotton growing
- Climate change - where to from here for cotton

8b: Fashioning the Future of Farm Business

- Workforce trends
- Leadership in my business
- my BMP
- Business ethics
- Agriculture and mining: human resource needs and working together
- Placing city students in rural business
- Future opportunities for the indigenous workforce

Session 9a and 9b: Concurrent

Session 9a: Rain grown cotton and optimising limited irrigation water

- Putting it all into practice
- Fitting cotton into the dryland farming system rotation
- Farming limited water in dryland and irrigation systems
- Cotton varieties for limited water
- Managing production risks

Session 9b: Cotton People: Our Future

- Future capacity: cotton leaders
- Future capacity: our schools
- Future capacity: research
- Blended learning opportunities for cotton people
- Sustainable cotton farm families

Evening

2010 Australian Cotton Industry Awards Dinner and Presentation



Murray Darling Basin Authority Chair to address conference

Chair of the Murray Darling Basin Authority, Mike Taylor has been confirmed as a key note speaker for the conference session on *Water Sharing for the Future: Industry, Environment, Communities*, to be held on the first day.

At conference time the Basin Plan will be in its final stages of consultation and so it will be an extremely timely address for industry. Here's what Mike had to say about his involvement.

Q. What will your topic be at the Australian Cotton Conference?

A. The Challenges for Irrigation in the Murray-Darling Basin

Q. Why do you think it's important to address the cotton industry on this topic?

A. The Basin Plan will be a critical input to the cotton industry's future planning

Q. What do you hope to achieve by addressing the conference?

A. Better information exchange and understanding of the cotton industry's issues

Q. Where is the Basin Plan development likely to be up to at conference time and will there be any further opportunity for the cotton industry to provide input during the Conference?

A. Once the Basin Plan has been released, there will be a 16 week consultation period for regions to provide feedback

The following provides a brief run-down on Mike's address to the conference.

The Murray Darling Basin is front page news on a regular basis. The extended drought over the past decade has highlighted many major challenges confronting the Australian community if it is to effectively and properly manage this critical national resource for the future.

Mike Taylor was appointed to be the inaugural Chair of the Murray Darling Basin Authority in May 2009. His cotton conference address will cover the development of the Basin Plan's historical and legislative frameworks.

He will comment on how the MDBA is moving to ensure The Basin is better managed so as to ensure that the environment is improved significantly from its current state, while addressing critical human water needs and the economic and social wellbeing of people and communities dependant on the Basin for their livelihoods.

Scientific, technical and engineering expertise and initiatives will be fundamental to improving the environmental management of the Basin, and the address will specifically address these matters.



Mike Taylor, Chair of the Murray Darling Basin Authority, will address the Cotton Conference on the challenges for irrigation in the Basin

Speaker Profile: Mr Michael Taylor AO

Mike is the Chair of the Murray Darling Basin Authority, and took up his appointment in May 2009.

Previously he was the Secretary of the Department of Infrastructure, Transport, Regional Services and Local Government (2004-2009). Prior to that Mike was the Secretary of the Department of Agriculture, Fisheries and Forestry (2000-2004) and prior to that the Secretary for various Victorian Government Departments.

Mike has a long association with rural and regional issues. He has been extensively involved in preparing and negotiating international, commonwealth and state agreements and legislation, and in advising governments and commonwealth/state ministerial councils on a wide range of agricultural, food, forestry, fisheries, energy, minerals, regional, water, environmental and sustainable natural resource management, policy, regulatory and operational issues.

In recent years, Mike has played a national leadership role in improving quarantine policy arrangements to increase Australia's protection from pests and diseases, the development of the National Food Industry Strategy, the establishment and implementation of the National Action Plan for Dryland Salinity and Water Quality, and the National Water Initiative.

Earlier in his career, Mike held the position of Chief Executive with the Australian Dairy Industry Council (1990 – 1992), representing Australia's largest processed food export industry.

Mike has been a member of the Australian Public Service Management Advisory Committee (APS-MAC) and chaired the APS-MAC Senior Executive Service Performance Management Sub-Committee. He is President of the Institute of Public Administration Australia (ACT), a Fellow of both the Institute of Public Administration of Australia (Vic) and the Australian Institute of Management, and a member of the CEO Circle.

Mike's academic background is in agricultural science and economics. He completed a Bachelor of Agricultural Science at the University of Melbourne in 1970 and a Diploma in Agricultural Economics at the University of New England in 1972.

Vision 2029 launch outlines industry's shared view

In 2009 Australian cotton leaders saw the potential for the cotton industry to be enhanced through the development of a shared vision.

Following many months of consultation and drafting, the final Cotton Industry Vision 2029 is due to be launched at the Australian Cotton Conference on 10 August.

According to Australian Cotton Industry Council Chairman, Peter Graham, the intent of a shared vision was to help inform organisations and sectors to enable alignment of thinking about the future.

"This vision is to be owned by the whole of industry and I will be encouraging all sectors to use it in their planning and integrate it into their focus and direction for the future," Peter said.

"The ACIC is to be responsible for managing, monitoring and reporting on progress of the vision and strategy, starting with its launch at the Cotton Conference in August," he said.

The Australian cotton industry engaged well known futurist, Sandy Teagle, to assist in developing this shared long-term vision to maximise performance on the way to 2029.

The project was a collaboration between CRDC, Cotton Australia and the ACIC, with input invited from all industry organisations and any individual belonging to the Australian cotton industry.

While the Cotton Industry Vision 2029 Final Report won't be revealed until conference time, it is based around the concepts of differentiation, responsibility, toughness, success, respect and capability.

According to participant Cotton Australia, this project allowed the visions of all the cotton industry bodies to be amalgamated into an overarching view of the future.

"The cotton industry has long been a visionary part of Australia's farm sector, with a sophisticated research and development effort, cohesion between producers and processors and a track record of innovation," Cotton Australia CEO Adam Kay said.

"This vision will help position the cotton industry for the future by anticipating issues, out thinking our competitors, developing insights and better managing risks.

"It will help us achieve better performance and organisational collaboration, as well as a greater awareness of possible future challenges and opportunities for our industry.

"With all of the major challenges we face – access to water, climate change, increasing costs of production, competing in a heavily subsidised world market, competition from synthetic fibres – our industry needs to be united, flexible and ready for action.

"The cotton industry has worked hard to earn a sustainable future and we see this project as helping cementing our place in Australian agriculture and the world".



Arthur Spellson, ACSA Chairman, says a conference highlight will be bringing people together from all aspects of the cotton supply chain

Shortening the supply chain

Shortening the supply chain will be a key aim of the Australian Cotton Shippers Association at this year's conference, according to ACSA Chairman Arthur Spellson.

Mr Spellson – who also acts as vice chair of the conference committee – said the industry was taking active steps to capitalise on the opportunity presented to bring growers, spinners and local brand-owners together under one roof.

“ACSA will again be encouraging strong representation from our direct spinning mill customers via the Export Market Development Programme.

“Given this EMD incentive, plus the likelihood of a major rebound in Australian production next year, we are expecting very strong attendance from the Thai, Indonesian, Chinese, Japanese, Korean and Indian textile sectors.

“This not only provides us with an outstanding opportunity to showcase all that Australian cotton has to offer direct to our customers, but also provides local textile brand-owners an opportunity to meet with their immediate suppliers of yarn and fabric on home soil. As such, the conference committee has commenced marketing the conference to local brand-owners

and we are expecting a strong response,” Mr Spellson said.

The CRDC is working closely with the conference committee to help co-ordinate a “Value Chain Forum” at the conference to cater specifically for the local textile and fashion industry.

Mr Spellson said this would dovetail nicely with some of the work that has been undertaken via the Premium Cotton Initiative.

This has seen 2008 and 2009 crop Sicala 350B cotton being used to manufacture quality yarns and fabrics, which are now being trialled by selected local and international brand-owners for use in 100%

Australian cotton retail products.

“And we shouldn't forget the successes we have already achieved with the Japanese Izumiya initiative and their Good-i brand for BMP cotton,” he said.

“Izumiya will again be in attendance at the conference, which should provide networking and information sharing opportunities for local brand-owners to see how they can do it too.

“Ultimately, these are the steps we need to take to develop ‘demand pull’ for Australian cotton – to help maintain our competitive advantage,” Mr Spellson said.

Delegates to hear from market experts

Delegates to the 2010 Australian Cotton Conference will hear from international financial and cotton market experts, including FC Stone Australia managing director, Ed Jernigan.

Mr Jernigan – who has been heavily involved with the last

five conferences, said the event provided a key opportunity to meet and share ideas with the key players in the Australian and international cotton industry.

“I am delighted to be speaking at this event once again this year – and FC Stone is proud to be

associated with the conference as a sponsor.”

FC Stone Australia offers risk management services to the Australian cotton industry, including futures execution and clearing, and cash grain brokerage.



New world order underpins cotton market

Recent cotton price volatility is symptomatic of a new world order on global cotton markets according to FC Stone Australia managing director, Ed Jernigan, who will be addressing the 2010 Australian Cotton Conference in August.

Between February and April this year, the nearby cotton futures contract on the Intercontinental Exchange (ICE) has traded a range between 78 US c/lb and 83.50 US c/lb – almost double the values achieved over the same period in 2009.

Mr Jernigan felt prices should be relatively well supported for the next 12 months, with strong raw cotton demand from Asian consumers and a lack of a carryover “cushion” in raw cotton stocks from the USA keeping the market buoyant.

He said these factors were behind the current market “inversion” – creating an unusual situation where prices for delivery of 2010 crop raw cotton were between five and 10 percent higher than 2011 crop.

“Chinese mills as well as most spinners around the world allowed their cotton inventories to be drawn down to minimal levels during the global financial crisis. As conditions improved, this stimulated a surge in imports by China and others,” Mr Jernigan said.

“At the same time this was occurring the global market was being influenced by a draw down in US ending stocks.

“The US – as the largest cotton exporter in the world – has for the past century held an extraordinary volume of ending stocks which provided a cushion to any supply issues. These stocks were ready to move into the world market any time prices advanced”.

Mr Jernigan said that at the end of 2007/08 the US held carryover stocks of 10.04 million bales, or about 26



FC Stone Australia managing director, Ed Jernigan.

percent of world trade. By the end of 2009/10 US ending stocks are likely to fall to just 3.0-3.2 million bales.

“The supply cushion is gone. 35.6 percent of the projected world carryover is now in China, and there is a big question mark over whether or not the figures we are getting out of China are accurate,” Mr Jernigan said.

“When the USA held the large block of stocks the market always felt that they had a cushion against any panic in supply. That has now changed,” he said.

By the time he speaks at the cotton conference, Mr Jernigan said the unusual inverted price dynamic would almost certainly have changed – but felt the market would remain supported by strong global demand.

“Global consumption of fibres was hit hard by the Global Financial Crisis, but demand has since rebounded strongly – led by Asia. For example retail sales in Hong Kong in January soared 35.8 percent from levels a year ago.

“This has benefited Asian apparel manufacturers and has had a big impact on China. The China Keqiao Textile Index on April 5 reached the highest level in 17 months. Chinese cotton fabric exports in February soared 58.2 percent from the depressed levels of a year ago,” he said.

Going forward, Mr Jernigan expected increased cotton production in the Northern Hemisphere could start to impact markets later this year. The USA looks likely to increase cotton acreage by around 15 percent, with growers switching away from corn which has experienced sharp price falls in recent months.



Pete Johnson says a conference highlight will be the “value chain forum”

Conference forum to focus on end users

A forum targeted at “the pointy end” of the textile supply chain will leverage from the Australian Cotton Shippers Association (ACSA) and Cotton Research and Development Corporation’s (CRDC) value chain initiatives at this year’s Australian Cotton Conference.

The forum will be held in the afternoon session on Day 2 of the conference and organisers are planning for strong interest from the local textile and fashion sector.

According to Premium Cotton Initiative chairman, Pete Johnson the sessions would be clearly targeted around positioning Australian cotton to deliver on stakeholder requirements throughout the value chain.

“There have been some extremely positive developments in our value chain efforts over the last 12 months – and we now have some genuine commitment from Australian brand-owners to start sourcing Australian grown product to market as targeted premium items on retail shelves,” Pete said.

“The forum will further explore how Australian cotton can fit in with current textile industry trends and innovations – and importantly, how we go about streamlining some of the issues that are presented by our often convoluted ‘dirt to shirt’ supply chains.

“This will also be about showcasing to brand-owners the core attributes our fibre delivers: high quality; environmental and social integrity; and traceability,” Pete said.

“The forum will also provide an outlet for our partner mills and brand-owners to showcase their efforts – and with any luck – some of their products”.

The forum is being jointly organised by ACSA and the CRDC and will follow on from morning sessions on *Trading and Markets* and *Positioning Australian Cotton for Maximum Return*.

Key topics to be covered during the forum will include: What brand-owners want; Australian cotton’s fit with new textile technologies; Australia’s environmental footprint and Supply Chain Management.

The forum would also be designed to provide optimal networking opportunities for delegates, who are expected to include the full gamut of the cotton supply chain.

Farmers, researchers and merchants would all be in attendance, as well as ACSA’s Export Market Development spinning industry guests from throughout Asia and the subcontinent, as well as broad participation from local manufacturers and brand-owners.



Industry Awards judging underway

Judging across five categories is underway in the 2010 Australian Cotton Industry Awards, with winners to be announced at the awards presentation and dinner on 12 August on the Gold Coast as a culmination of the Australian Cotton Conference.

All delegates to the Conference are encouraged to buy their tickets to the Awards' dinner to help the industry showcase and celebrate our highest achievers.

Although not the best year for the cotton industry, entries were strong in all categories and judges will have a difficult time choosing their winners. Three finalists in each category (apart from Cotton Australia Service to Industry) will be announced at the start of June.

Cotton Australia would like to thank all Cotton Grower Associations, individuals and commercial companies that took the time to nominate for the Awards this year in the following categories.

Monsanto Cotton Grower of the Year Award

Nominees can be an irrigated or dryland grower, regardless of farm size, who can demonstrate

achievement in most of the following aspects of cotton production: crop and pest management; land and water management; staff development and OH&S; commitment to Best Management Practices (BMP); business management and marketing; and industry and/or community participation.

Chris Lehmann Trust Young Achiever of the Year Award,

sponsored by Bayer CropScience

Nominees must be 35 years of age or less. They must be involved in the Australian cotton industry; have the potential to be a significant industry contributor; and show commitment to and have a vision for the future of the industry.

Cotton Seed Distributors Researcher of the Year Award

Researchers nominated must have contributed to overall service to industry research and/or extension; produced or contributed to research or extension work that has had positive outcomes for the Australian cotton industry; made a significant commitment to cotton industry research; and

generated research and/or extension outcomes contributing to industry 'greater good'.

Cotton Australia Service to Industry Award

Nominees in this award must have provided exceptional service to the Australian cotton industry; have achieved a positive impact on the industry; shown significant commitment to the industry and contributed a legacy for the industry's 'greater good.'

AgriRisk Innovative Grower of the Year Award

Nominees must be growers who have demonstrated a very high degree of innovation in one of the following areas:

- Cotton crop production and farm management
- Natural resource management
- Staff development and/or OH&S
- Best Management Practices (BMP)
- Business management and/or marketing
- Industry development and/or community relations



2009 Monsanto Cotton Grower of the Year, Andrew Pursehouse (right) pictured with Upper Namoi Grower Phil Morgan during the 2009 Grower of the Year Farmwalk at "Breeza Station"



The FREE DuPont Kids Club will allow both parents to participate in the 2010 Australian Cotton Conference.

DuPont Kids Club to Assist Parents

Acknowledging that the Australian Cotton Conference is a family affair, and an opportunity for industry participants to take a break, DuPont is again sponsoring the Kids Club which is free to conference delegates.

Du Pont Kids Club aims to provide and engage children with a program bursting with variety and choice. A structured plan of activities, suitable for children 0 to 14 years, will focus on recreational ideas that encourage physical fitness.

Activities will include face painting, body balance, hip hop dancing, indoor and outdoor sports, jewellery and gift making, craft, role playing, bubble machines, dress ups, mask making, circus skills, table tennis and team building games.

Parents are encouraged to book early through the conference registration process to avoid disappointment.

Day 1, 10 August, 9.30am – 6.30pm
Day 2, 11 August, 8.00am – 6.30pm
Day 3, 12 August, 8.00am – 5.30pm



Conference sponsors see valuable opportunities for industry

Organisers are pleased to announce that eight sponsors have signed up to support the 15th Australian Cotton Conference, to be held on the Gold Coast from August 10-12.

The conference would not be possible without this support.

Foundation sponsors Cotton Seed Distributors (CSD) and the Cotton Research and Development Corporation (CRDC) have been supporting the Conference since their beginnings, and see great benefits in the industry-wide event that's in its 30th year.

According to Executive Director of the CRDC, Bruce Finney, the organisation has been proud to be involved in supporting almost three decades of successful conferences.

"The Australian Cotton Conference above all gives the industry a sense of identity and unity of purpose through fostering connections between people, industry sectors and businesses. This is just as important as the sharing of the latest research information and outcomes," Bruce said.

"The sense of identity that the conference provides is empowering. It supports a "can do" attitude that then allows the adoption of research and industry issues to be addressed.

"The evolution of the conference to one that includes all of industry has been very welcomed, as the CRDC is strategically investing in R&D to not only improve on-farm performance, but that of the supply chain.

"The theme this year of Fashioning the Future is spot on. Arguably we're not in the cotton production business; we're in the fashion business and there are exciting opportunities to strengthen the linkages between the farm and our customers, the spinners, brand owners and consumers of cotton products.

"The conference is all about the people and supporting them to use the research we're investing in on their behalf."

Australian Cotton Conference Committee Chairman Cleave Rogan, says that the support of these companies is even more appreciated as we come out of the worst drought in living memory.

"We fully understand the pressures that these businesses have been under over the last six years, and know how difficult it is to chase the sponsorship dollar at these times. Our conference is held at a state of the art facility, with costs to delegates kept to a minimum due to the support of our sponsors," he said.

"We hope that our industry in turn supports these companies and we'll certainly be doing our best to promote them now and at the conference."

The Committee would like to recognise the following sponsors who've signed up so far:

Cotton Research and Development Corporation

A partnership between the Australian cotton industry and the Australian Government, to identify and fund cotton research and development for the benefit of the whole industry.

Foundation Sponsor

Cotton Seed Distributors

Australia's largest supplier of cotton seed.

Foundation Sponsor

ANZ Banking Corporation

Awarded Australia's best value agribusiness bank by CANSTAR CANNEX, ANZ has dedicated agribusiness and industry specialists through every regional branch.

Major Sponsor and dinner sponsor of the 2010 Australian Cotton Industry Awards

DuPont

Supplier of agricultural products in Australia for over 50 years

Sponsor of the Kids Club, a free child minding service for conference delegates

FCStone Australia

Works with producers, processors, and end-users of cotton and other commodities to help them analyse and manage price risk

General sponsor

Sunrise Resources

Sunrise Resources liaises between East and South East Asian end-users and worldwide suppliers of raw cotton.

Sponsoring the Sunrise Fashion Show

Port of Brisbane Corporation

Responsible for the operation and management of one of Australia's fastest growing container ports, in Brisbane

Minor sponsor of the Australian Cotton Conference Sponsor for 11 years

Transglobal Inspections

An internationally-known and respected specialist in raw cotton inspection.

Minor general sponsor



Australian Government

Cotton Research and Development Corporation



COTTON AUSTRALIA



Australian Cotton Shippers Association





After a career in the Australian cotton industry that spanned 43 years Richard Browne has some interesting reflections on the industry, its past and future...

Industry pioneer with vision and experience

By Chrissy Brown

“The legacy of all this technological and management advancement is an industry that leads the world in yield and sustainability and sets a benchmark for the rest of the world for crop management.”

“Fund research, maintain cooperation, restore unused capacity and defend the industry.”

These are the actions the Australian cotton industry needs to take in order to remain viable in the future suggests former CRDC Director and retired Auscott Limited General Manager Operations, Dick Browne.

After a career in the Australian cotton industry that spanned 43 years Richard Browne has seen the industry from its early beginnings around Wee Waa to become recognised as a world leader in cotton production.

Graduating from Wagga Agricultural College in 1964, Dick took a position with NSW Department of Agriculture as an agronomist based at Narrabri Research Station in NSW. It was just before this time, in 1961, that cotton production was brought to the Wee Waa area of Australia by American farmers from California.

“I think that success of the industry can be put down to a combination of factors,” he says.

“In the first instance there was government support for the establishment of an Australian cotton industry and for development of agriculture and water resources generally. The abundant land and water was presented as an opportunity to those prepared to pioneer a new primary industry and the rest is history.

“Without the know-how and investment of the first American families who moved to the Wee Waa area I doubt the success of the industry would have been as dramatic.

“It paved the way for many local Australian farmers to develop irrigation and enter the industry.”

Dick says he believes we need to give some thought to how difficult and challenging those early years would have been - no irrigation infrastructure, cotton gins, seed companies, specialised machinery available in Australia, marketing infrastructure, poor roads and so on.

“There was however a spirit of cooperation and good will by all those in the industry and that laid down a firm foundation for future growth and success of the Australian cotton industry,” he said.

“It became apparent early on that Californian farming systems and American cotton varieties needed adaption to Australian conditions which gave rise to an active cotton research and development (R&D) sector along with a highly skilled research community. Hence the career long interest in R&D,” he explains.



The Australian cotton industry benefited greatly through Dick Browne's contribution on the CRDC board.

Dick is pictured here with fellow board members in 2007, Bruce Finney, Leith Bouilly, TJ Higgins, Lisa Wilson and David Connors.

Dick believes that it is the strong partnership between industry and research providers that has made the cotton industry different from other sectors in Australian agriculture.

"The industry was very progressive with well funded R&D right from the start," he said.

In 1969 Dick began working for Auscott Limited as an agronomist in the Namoi and Macquarie Valleys and from 1972 held various management positions in these areas. From 2001 he had a corporate role across the company operations which included growing irrigated and dryland crops, and providing ginning and marketing services to the industry in the Namoi, Macquarie, and Gwydir valleys of NSW.

Retiring from Auscott in 2003 after 34 years, he says his time there was both interesting and rewarding and provided the opportunity to be involved with a company that had a culture of excellence and a desire to contribute to the industry and the communities in which it operated.

Industry involvement continued as a Director of the CRDC from 1999 to 2008.

During his career in the cotton industry he was actively involved in many industry bodies which, he says, were initiated in the 1970s and were aimed at improving productivity and sustainability through R&D, sharing of information within the whole cotton industry and cooperating to achieve common goals.

His participation included being Chair of the Co-Operative Research Centre for Sustainable Cotton Production, Director of the Australian Cotton CRC for a short term representing the CRDC, alternate Director for the CRC for Cotton Communities Catchments, member and past Chair of the Australian Cotton Growers Association (ACGRA), and was involved in numerous delegations to Government on water policy issues during the ongoing water reform process. In addition he served on the Australian Cotton Industry Council, was a Director of Cotton Seed Distributors, and a member of the Cotton Research Council, to mention some.

Not only does he have a very strong interest in R&D but also natural resource management (NRM), and in more recent years, directly so through the Condamine Alliance in Queensland, as the independent Chair in 2003-2007. This regional NRM body, centered on the Darling Downs of QLD, dealt with many NRM issues such as sustainability, biodiversity, water quality and soil management.

"NRM has been a high priority for the industry, and

growers understand that the conservation of healthy soils and water together with biodiversity underpins a productive cropping system," Dick says.

"What tends to be lacking is a means of measuring and monitoring the natural resource assets that underpin the system.

It is difficult therefore to defend the environmental performance of the industry.

"Over the years agriculture has been marginalised to some extent. By this I mean that policy and regulation decisions are being largely influenced by an urbanised population with little or no connection or understanding of the issues.

"A consequence of this is a redefining of the rights and freedoms that farmers have in relation to natural resource access (land and water) and how they operate their farms. It is a matter for concern that in some states for example governments are prescribing farming practice through regulation."

In 2006 Dick co-authored a paper with CRDC General Manager R&D Investment Bruce Pyke and Better Cotton Initiative Program Manager Allan Williams, which was presented at the International Cotton Advisory Committee in Brazil titled *Key to the Australian cotton production practices*. In their paper they express their belief that 'The Australian cotton industry can clearly demonstrate the capacity to support a productive, profitable and sustainable production system, but many challenges remain... Internal factors will include the pressure of ever increasing input costs and the cost of new technologies in particular. Competition for water will be an ongoing concern and of course commodity prices. Even more challenging perhaps will be external factors such as community perception and acceptance as well as a measure of environmental performance.'

He reflects on the industry's progress, saying "There have been enormous changes in the industry over the years all contributing to improved yields, quality and sustainability in particular introduction of GM varieties and precision farming techniques.

"Other major changes have been improved irrigation management through soil monitoring and understanding crop demand, use of residual herbicides, integrated pest management and managing pesticide resistance, farming systems research, and varietal improvement for improved yields, quality and disease resistance."

"The legacy of all this technological and management advancement is an industry that leads the world in

yield and sustainability and sets a benchmark for the rest of the world for crop management.

"Technology does not however remove the constant threat of disease and insect resistance."

However, he believes that apart from the ongoing public relations battle there will be the ever present challenges of pesticide resistance, water politics and drought. Climate change is also now on the agenda.

"With the benefit of hindsight it is now easy to see that historically, models of irrigation supply reliability were too optimistic and that irrigators will have to adapt to less reliable supply and restricted access, a consequence of the never ending water reform process.

"Uncertainty around water access and sharing rules has been going on for far too long.

"I believe that the water issue can be overcome by adopting a set of open and transparent rules around capacity sharing of the water resource. Water use (sharing) rules have always been more important than access or entitlement yet the focus has been on clawing back licensed entitlement."

Finally, he concludes "I have observed a generational change in the industry and it follows that there will be changes in how it conducts business.

"The modern cotton industry has passed through a number of phases; pioneering, establishment (commercially viable), expansion (across NSW and QLD) and now contraction as a result of forces beyond control (drought). To what extent the industry will recover to its former levels is somewhat uncertain."

He says however, there is a substantial legacy from the past and it is the developed capacity of the growers and researchers together with industry infrastructure that now exists.

He believes industry organisations and structures will need to be maintained during these times of low production.

The Australian cotton industry has a competitive advantage and given a return to more normal water supply he feels confident it can resume much of its former strength.

"Most of all though is a need to support R&D as this has been the greatest strength of all," he said.

"Working in the Australian cotton industry has been a great pleasure and most of all it was the people I came across and worked with that made it so rewarding."

Projects will help identify where costs can be saved, as well as where possible future fibre value adding and carbon markets can be exploited..



Nutrition



Crop Protection



Carbon Footprint



Collaboration



Cotton CRC



Mill Efficiency



Human Capacity

2010-11 R&D investments geared to future needs

... continued from page 20.

CRDC recently invested in a series of case studies of energy use on irrigated cotton farms to compare cost, efficiency and greenhouse gas emissions.

This study found that average energy related greenhouse gas emissions (0.712 t CO₂-e per hectare from seven case study farms) appear to be equal to average emissions from fertiliser use (0.67 t CO₂-e per hectare based on Australian Greenhouse Gas Inventory and industry production data from 1990 to 2007).

“A key message from this preliminary study is that a focus on improving on-farm energy use efficiency appears to be as important in irrigated systems as improving nitrogen use efficiency,” says CRDC’s General Manager for R&D Investment, Bruce Pyke.

“As a result, CRDC will be extending its R&D investments in on-farm energy use and soil carbon to assist in gaining a better understanding of cotton’s carbon footprint. These projects will help identify where costs can be saved, as well as where possible future fibre value adding and carbon markets can be exploited.”

Other developments ahead include building on the CRDC’s collaborative activities.

“We will continue to work together across the rural R&D system to deliver strategic outcomes and efficiency gains with organisations such as the Grains R&D Corporation, Horticulture Australia, the Rural Industries R&D Corporation and the Cotton Catchment Communities CRC,” Bruce said.

“CRDC is a core partner and investor in the Cotton CRC and will continue to co-invest up to \$4 million per year during the life of the CRC.

“We also plan to collaborate internationally, with Cotton Incorporated - the peak industry body for cotton R&D in the US - and with spinning mills in China, India and Indonesia in important Value Chain value-adding research.”

Bruce said that other collaborations in the coming year will include Australian Cotton Shippers Association (ACSA) and Australian Wool Innovation (AWI) working with a major mill in China and an Australian brand owner, Fletcher Jones, to develop a new premium 100 per cent Australian cotton and wool blended natural fibre shirt for test marketing.

“In addition, CRDC, ACSA and Fletcher Jones hope to collaborate to test market a cotton shirt made from 100 per cent premium grade Australian cotton,” Bruce said.

Looking ahead, projects in the pipeline include ongoing support for the cooperative partnership for farming and fishing occupational health and safety; a range of research projects covering the management of established, invasive and endemic insect pests (including potential new pests such as the *Solenopsis Mealybug* – pictured), weeds and diseases; further testing and commercialisation of a novel bio-pesticide for key cotton and grain pests.

Work is also continuing on R&D investments in biosecurity, particularly resistance monitoring, as well as cropping systems research for nutrition, soil carbon and soil biology.

Case studies will be extended to farmers demonstrating the impact of farming systems innovation on improved production efficiencies and resource management - soils, water, fertiliser, energy and environmental performance.

Bruce said that the world textile market was continuing to improve, driven by progress in global economic growth and diminishing cotton stocks. Consequently cotton prices are looking better for 2010-11 than for recent seasons.

“Interest in growing cotton, both irrigated and dryland, in 2010-11 is strong, as cotton looks to be the best option among the summer crops at present. With adequate winter rainfall, a bigger crop is anticipated next year,” he said.