



# Final Report

Capacity &amp; Community | Cotton Research &amp; Development Corporation

## *Part 1 - Summary Details*

---

**CRDC Project Number:** CRC54C**Project Title:** Cotton Industry Development Officer - Griffith**Project Commencement Date:** 01/07/2003 **Project Completion Date:** 30/06/2005**Research Program:** Capacity & Community

## *Part 2 – Contact Details*

---

**Administrator:** Mr Graham Denney - Manager External Funding**Organisation:** NSW DPI**Postal Address:** Locked Bag 21 ORANGE NSW 2800**Ph:** 02 63913327 **Fax:** 02 63914859 **E-mail:** graham.denney@dpi.nsw.gov.au**Principal Researcher:** Mr Scott Vaessen - Cotton Industry Development Officer**Organisation:** NSW DPI**Postal Address:** PO Box 1087 GRIFFITH NSW 2680**Ph:** 02 69601353 **Fax:** 02 69630255 **E-mail:** scott.vaessen@dpi.nsw.gov.au**Supervisor:** Mr Graham Charles**Organisation:** NSW DPI**Postal Address:** ACRI Wee Waa Rd NARRABRI NSW 2390**Ph:** 02 67991524 **Fax:** 02 67991503 **E-mail:** graham.charles@dpi.nsw.gov.au**Researcher 2****Organisation:****Postal Address:****Ph:** **Fax:** **E-mail:****Signature of Research Provider Representative:** \_\_\_\_\_



## Part 3. Final Report

---

### *Background*

Cotton growers south of the Macquarie Valley have been serviced by a Cotton Industry Development Officer for the last 5 years. In that time strong interest has grown in cotton around the Hillston, and Hay districts. There is a potential for rapid expansion of the industry once water allocation and cotton prices return to average levels. It is estimated that 35,000 hectares could be grown in the region within the next three years. This would represent more than a 60% expansion in the industry.

As well as strong grower interest in cotton, the introduction of Bollgard II/Roundup Ready may provide opportunities to grow cotton in areas which were previously not regarded possible for cotton production. This was mainly due to environmental concerns resulting from past insecticide management that was essential for conventional cotton production.

Another interest in Bollgard II/Roundup ready cotton is to improve crop earliness. Management for earliness can have a two fold advantage in southern production areas. Firstly it may allow growers to alter planting dates to avoid excessive cold shock days. This in turn may reduce seedling mortality from diseases. Currently mortality rates can be in excess of 40%. The second impact from enhancing earliness will be reduce the overall growing season to minimising the risk of fibre quality discounts caused by delays in picking.

Evan Brown the Cotton Industry Development Officer employed by the previous project CRC 54C, resigned in early December 2004. His position was in part replaced by NSW DPI District Agronomist at Griffith Barry Haskins and Scott Vaessen who has been employed since mid-December to cover the key duties of the project.

Grower meetings have been held during the duration of the project to prioritise R&D needs for southern production areas. In these meeting a number of research needs for southern production areas have been highlighted by growers. While it was recognised that developing effective answers to these questions is beyond the scope of a Cotton IDO position alone, growers still felt the IDO position was critical in assisting new growers in the district.

Key research questions highlighted by local growers

### *Farming Systems*

1. Planting date, plant populations and plant establishment for 15 inch cotton.
  - soil temperature and planting guidelines
  - management strategies for crop establishment and early season growth under cool condition (high number of cold shock days)
  - planting date, yield and earliness
  - plant population, yield and earliness
  - cover crops for planting
  - herbicides at planting, new strategies
  - irrigation management, pre –water or irrigation after sowing
  - seed bed preparation
2. Nutrition – especially for 15 inch cotton.
  - variation from conventional cotton



- nitrogen
  - phosphorous
  - potassium
3. Weed control in 15 inch.
    - management of Roundup Ready and Roundup Ready Flex
    - shielded spraying in 15 inch, is it possible?
  4. Breeding for southern region
    - short season climate variety selection
    - 15 inch varieties
  5. Crop monitoring and management (manage for yield and quality)
    - Last effective square and flower date
    - Timing of growth regulant applications (Pix)
    - Timing of last irrigation and defoliation
  6. Irrigation management for 15 inch cotton
    - Subbing management of 2m beds
    - WUE and irrigation timing
  7. Rotations and stubble management (Cotton, Corn, Rice)
    - What is the best way to break down/manage stubble

### ***Pest Management (Insects /Weeds/ Diseases)***

1. Seedling Disease
  - Seedling Disease and its management was seen as a high priority
  - Controlling, Black root rot, Rhizoctonia and Pythium
  - Options to improve germination and plant stand
2. Area Wide Management
  - Area wide management needs to extend to other farms not just cotton.
  - Chemical selection and integration across crops.
  - Maize & Cotton (Management of Mites & Helicoverpa)
  - Ecology of mites do they occur in same area.
  - Weed management with RR cotton need alternatives eg, Liberty cotton.
  - IRMS for other crops.
3. Plant Compensation
  - 15" and 1m beds what is the difference.
  - Damage thresholds.
  - Bollgard and sucking pests



## **Objectives**

The project titled Cotton Industry Development Officer – Griffith (CRC54C) was initially proposed to extend from 01 July 2003 to 30 June 2006. The cessation point for the project was adjusted to the 30 June 2005 to coincide with the finalisation of the Cotton CRC. Consequently the project objectives and outcomes address the two years completed of the initial project.

Mr Evan Brown resigned from the Cotton IDO position in December 2004. Mr Scott Vaessen was employed in the position of Cotton Industry Development Officer in early December 2004 and was able to maintain services to growers in the Lachlan and Murrumbidgee Valleys. Progress against the agreed milestones and performance indicators has been fragmented by the employment of Scott Vaessen in the middle of the season.

Consequently progress as per the project objectives for the past year have been outlined below, together with inserts from previous annual reports collated from Mr Evan Brown's prior reporting for Year 1 of the project below (in italics).

### **Objectives, Milestones, Performance Indicators Year 1:**

- *Implement programs which promote the adoption of IPM, particularly for insect control and resistance management for both conventional and transgenic technology. This includes a number of on-farm demonstration trials, combined with IPM short courses.*
- *Assist in the delivery of IPM short course and establishment / ongoing development of Grower Support Groups. (Incorporating IPM and BMP).*
- *Establish AWM group/s in southern NSW Cotton growing regions*
- *Continued resistance monitoring*
- *Establish a monitoring project to compare insecticide use patterns in Conventional and Bollgard II<sup>®</sup> cotton crops.*
- *With cotton Australia assist growers with BMP manuals and prepare farms for auditing*
- *Establish Trap crop program.*
- *Establish 15inch trial work.*
- *Establish cottonlogic network for mapping of insect pressure.*
- *Establish the uses of extension tools such as Weedpak, Spraypak etc*
- *Establish on farm case studies of soil problems*
- *Fulfil role as Secretary for the Cotton Growers Association*
- *Promote the use of other DSS's to growers and consultants. This will include the OzCot model.*

### **2003-2006**

#### **General extension (NSW Ag)**

- *Assist in developing national extension programs.*
- *Develop extension priorities with local growers and consultants and link/adapt national extension activities into local issues.*
- *Produce a trial booklet detailing local trial results.*
- *Distribute a local grower newsletter "Cotton tale" on a frequent basis that promotes research results on current production issues.*



### *Achievements of Year 1 objectives.*

Last season October and November were cold and this delayed many crops, with about 12,500 hectares being planted along the Lachlan and Murrumbidgee rivers. The district average was 6.48b/ha if it is broken into the two regions Lachlan 7.0b/ha and the Murrumbidgee 6.0b/ha. Total bales produced were 81400 which was down on the original estimates of 90000 plus. This season approximately 1300 hectares required replanting and much was replanted to 15inch cotton this system end up at 55% of the total area. Three plant compensation trials have been undertaken this season and the final maturity picks were completed in the second week of May. The Ultra Narrow Row growths regulate trial was run in collaboration with Rose Roch (CSIRO) which looked at the effect of growth regulants on yield and maturity of UNR. The early results from the trial have shown that the growth regulants have improved maturity in UNR but decreased the yield.

An irrigation trial conducted in collaboration with Michael Grabham, Irrigation Officer for the lower Lachlan, examined deep drainage and irrigation scheduling using two enviroscans and 4 gypsum blocks logged by a G-bug logger. The results showed deep drainage occurring at all irrigations except the last. The trial has also shown potential for the G-bug technology to be used in cotton irrigation scheduling as a cheaper alternative to enviroscans. Further work will be conducted in the 2004/05 season to further validate the suitability of the technology to the cotton industry of Southern NSW. Collaboration with CSIRO Land and Water at Griffith in the coming season should yield the ability to quantify deep drainage from a similar trial. This important information will be useful in determining the cost and extent of deep drainage in southern cotton production systems.

The 2004 season there has been approximately 8500 hectares planted and the season started well but the last few week the weather has cooled off and so crops growth have also slowed down.

- Implement programs that promote the adoption of IPM, particularly for insect control and resistance management for both conventional and transgenic technology. This includes a number of on-farm demonstration trials and is combined with the IPM short courses

The plant compensation trials go toward developing IPM in this region through a better understanding of plant compensation and the ability of growers to have confidence in allowing plant damage.

The plant compensation trials have been of great interest to growers this season with growers keen to see if they can use IPM in this region. The three plant compensation trials have been analysed with the final maturity picks completed in first week of May. The samples have been weighed, and plant mapping and ginned. Once the analysis of results is complete we will have two years of trials to compare.

This season that is 2004-05 a Mirid trial is being run in conjunction with Brian Duggan that will add to this work.

- Assist in the delivery of IPM short course and establishment / ongoing development of Grower Support Groups. (Incorporating IPM and BMP).

During 2003-04 a IPM Short Course was run in collaboration with Mark Hickman. The course was held over five days and there were 14 participants. Evan Brown assisted in the delivery of the IPM Short Course by presenting the section titled 'Crop Management Principles' using IPM. The first two days of the workshop provided an opportunity to gain an understanding of the growers' knowledge and experience of Integrated Pest Management.



It would appear that most growers implement a proportion of IPM on their farms already. However the IPM workshop gave the growers an enthusiasm to work towards implementing more IPM practices on their farms. The final session of the workshop was extremely valuable with the growers giving a talk on what they had learnt and implemented on their farm following the course this year.

- Promote the use of other DSS's to growers and consultants. This will include the Hydrologic model.

The promotion of the Hydrologic model has occurred with a workshop run on the 24<sup>th</sup> September 2003 and more recently on 31<sup>st</sup> August 2004 by Dirk Richards and Sandra Deutscher. Growers have been keen to use the modelling to see how well it predicts their crop's irrigation needs. A few growers have trialed hydrologic during the season in helping them with questions they have had about crops that were short of water. There are some problem with the program regarding southern production which is known by the programmers. The issue is the crops seasoned length is shortened by frost in the simulations in the field this does not happened. We also need some soil charterzation work to identify the soil water holding capacity in a number of soil types.

- Assist in developing national extension programs

Evan Brown is part of the Environment focus team and I have been involved in preparing the release of the Riparian guidelines. In conjunction with other members of the environment team a survey has been prepared to find out peoples understanding of riparian zones throughout the cotton industry. Development of extension priorities with local growers and consultants is to take place along with efforts to link/adapt national extension activities into local issues. In March 2004, in conjunction with the Hillston CGA, Evan Brown ran a research review meeting with 15 growers and a consultant attending.

- Establish 15inch trial work

With 15inch cotton being taken up quickly and a number of hectares being planted this season, trial work has been established in plant compensation and the evaluation of the crops. The evaluation of 15inch cotton includes plant stands and plant mapping of a number of crops on the 4 properties that are growing 15inch cotton. With crops are picked and ginned the information will help to identifying how to gain excellent yields in this system of production. This has been the basis for a trial this coming season including plant stand trial in conjunction with CSD.

- Secretary of the Lachlan Valley Cotton Growers Association.

Evan Brown has been appointed as the secretary of the CGA in the Lachlan Valley. The Lachlan Valley CGA has not been active, and Evan has been the driving force in collaboration with a few key growers to establish the CGA. Evan Brown was elected as Secretary to help in the development of the CGA business plan and other projects. They include the publication of a spray instruction sheet, letters to all the CGA members asking for their commitment to the Association, and the development of disease management guidelines. Evan Brown's involvement in the CGA is important to help define the research needs in this region and help in the distribution of information to cotton growers.



## Objectives, Milestones, Performance Indicators Year 2:

- Establish trial/s incorporating IPM, AWM and Bollgard II technologies
- Establish demonstrations to assess thresholds for secondary pest with BollgardII®
- Continue to monitor insecticide resistance
- Continue 15inch and Refugee/Trap Crop Work.
- Continue cottonlogic network for mapping of insect pressure to establish hot spots.
- Promote best bet solutions for poor soil types.
- Assist in the delivery of IPM short course and establishment / ongoing development of Grower Support Groups. (Incorporating IPM and BMP). Assist in implementation of BMP particularly for insect pest management and water management
- Secretary for the Cotton Growers Association

### 2003-2006

#### *General extension (NSW Ag)*

- Assist in developing national extension programs
- Develop extension priorities with local growers and consultants and link/adapt national extension activities into local issues.
- Produce a trial booklet detailing local trial results.
- Distribute a local grower newsletter “Cotton tale” on a frequent basis, which promotes research results on current production issues.

#### **Achievements of Year 2 objectives.**

Mr Scott Vaessen was employed in the position of Cotton Industry Development Officer in early December 2004 and was able to maintain services to growers in the Lachlan and Murrumbidgee Valleys. Progress against the agreed milestones and performance indicators has been fragmented by the employment of Scott Vaessen in the middle of the season. Nevertheless progress as per the project objectives is outlined below.

- Establish trial/s incorporating IPM, AWM and Bollgard II technologies
- Establish demonstrations to assess thresholds for secondary pest with Bollgard II®

A mirid compensation trial was established and results were collated in collaboration with Dr Brian Duggan, Crop Physiologist with CSIRO Plant Industries to address the increasing prevalence of green mirid damage to bolls in Bollgard II cotton and to assess the possible regional variation in cotton response to mirid damage thresholds. Results of the trial have been published in the Southern NSW Cotton Trial Book that will be distributed in October 2005.

In cooperation with CSIRO, CRDC, NSW DPI & CSD, a Bollgard II Farm Walk was held in late December to highlight specific management issues such as the assessment of thresholds for secondary pests in Bollgard II cotton, and plant monitoring to manage the growth of the Bollgard II plant.

An irrigation trial was conducted in collaboration with Michael Grabham (NSW DPI Irrigation Officer) to continue research from previous seasons to examine deep drainage and irrigation scheduling using two enviroscans and 4 gypsum blocks logged by a G-bug logger. This trial was established to further validate the suitability of the technology to the cotton



industry of Southern NSW. The results of the trial have been published in the Southern NSW Cotton Trial Book that will be distributed in October 2005.

- Continue to monitor insecticide resistance  
Regular *Helicoverpa* spp. egg collections were conducted throughout the cotton season from mid-December onward and forwarded to Louise Rossiter (NSW DPI Research Entomologist) for testing. There was a stark drop-off in pressure in mid-late January and consequently it became difficult to collect adequate numbers for testing toward the end of the season. Aphid samples were also collected towards the end of season and sent to Grant Herron (NSW DPI Senior Research Scientist) for resistance testing. The results collated throughout the season have been published in the Southern NSW Cotton Trial Book that will be distributed in October 2005.

- Continue 15inch and Refuge/Trap Crop Work.  
A plant population trial was established by Mr Craig McDonald from Cotton Seed Distributors to establish a range of plant populations in Bollgard II cotton to determine best yield responses. The trials were designed to assess populations of 5, 8, 12, 15 and 20 established plants per metre in 1 metre rows and corresponding populations were established for 15 inch spacing fields. Again the results of the trial have been published in the Southern NSW Cotton Trial Book that will be distributed in October 2005.

- Assist in the delivery of IPM short course and establishment / ongoing development of Grower Support Groups. (Incorporating IPM and BMP).
- Assist in implementation of BMP particularly for insect pest management and water management.

An IPM Short Course was held during the 2003-04 season in collaboration with Mr Mark Hickman (Senior Extension Development Officer, QLD DPI) with 14 participants. There was no additional course run during the 2004-05 season due to the excellent participation rate of the region in the 03/04 season. Mr Mark Hickman did provide an excerpt from the IPM short course for new growers at the Inaugural Hay Cotton Field Day held in early March.

Mr Scott Vaessen (Cotton IDO) facilitated and also provided a brief introduction to IPM & BMP principles at the Hay Field Day, as well as the Tabbita Summer Cropping Field Day that focused on cotton production based upon a 30 inch row configuration. The Tabbita Field Day was also attended by a number of potential new cotton growers.

The implementation of BMP principles for pest and water management was a continual process that was carried out throughout the season through close liaison with growers and the Cotton Australia representative for the Lachlan and Murrumbidgee. The meetings with prospective growers throughout the Murrumbidgee Irrigation Area have included a strong emphasis on the importance of abiding by the BMP program.

- Secretary for the Cotton Growers Association  
Mr Scott Vaessen (Cotton IDO) continued in the role of the Secretary of the Lachlan & Murrumbidgee Cotton Growers Association until the AGM that was held in May. Scott Vaessen chaired the AGM, and requested that the Cotton IDO not be re-elected to the executive of the CGA to allow the association to be managed by growers for growers. Although the position was filled by a grower member the position has since been forfeited by the incumbent due to other commitments, so consequently Mr Scott Vaessen has again taken



on the role of the Secretary, providing the fundamental role of cooperation with and coordination for the Lachlan & Murrumbidgee CGA.

Mr Scott Vaessen also established a Research sub-committee at the CGA AGM that is chaired by the local ACGRA representative. The Cotton IDO has continued to work as the Secretary for this sub-committee to ensure that research priorities are established and relayed onto the ACGRA and CRC/ CRDC.

Mr Scott Vaessen has also provided a fundamental role in chairing the Field Day/ Crop Competition & Annual Dinner sub-committee for the CGA. The 2004/05 Cotton Crop Competition judging and associated Field Day was again a great success and the Annual Awards Dinner was held on the 12<sup>th</sup> August 2005 to present awards for the Crop Competition. The MC for the Awards Dinner was Fiona Myers, a well known regional media reporter and the guest speaker for the night was Mr Bruce Finney, the Chief Executive Office of the CRDC. The night was very well publicised with exposure in local and regional press including The Land, Cotton Outlook, The Riverina Times (Griffith), The Observer (Coleambally/Darlington Point), The Area News (Griffith), The Spectator (Hillston/Ivanhoe) and in addition the Awards Evening was also promoted and reviewed by ABC Riverina Radio and Local Radio 2RG.

- Assist in developing national extension programs.
- Develop extension priorities with local growers and consultants and link/adapt national extension activities into local issues.

Mr Scott Vaessen upon his late entry into the 04/05 cotton season was included as a member of the Farming Systems Focus team as part of the National Cotton CRC Extension team. Mr Scott Vaessen has continued to provide the coordinating support for the Lachlan & Murrumbidgee CGA Research sub-committee to ensure local research is reviewed and prioritised for feedback to the National Extension Team.

- Produce a trial booklet detailing local trial results.

The 2004/05 Trial booklet has been completed and is currently in the midst of final proofing before release on CD in early October 2005. A hard copy of the booklet is also planned in the next month to compliment the information CD.

- Distribute a local grower newsletter “Cotton Tale” on a frequent basis that promotes research results and current production issues.

A total of 20 Southern NSW Cotton Tales were distributed throughout the 2004/05 season.

### ***Methodology***

Although it is difficult to provide comment as to methodology for the entire duration of the project due to the change in personnel, the methodology used in the prior 6 months before the cessation of the project as explained briefly below.

- Extension activities such as field days and grower meetings for both experienced and prospective industry members have been conducted during the latter half of the 04/05 season. These events have been organised in cooperation with the Cotton CRC National Extension Team, and when necessary directly as a result of Cotton IDO activities and planning. This methodology has provided a formal front of personal contact with growers and wider industry;



- Regular ‘Cotton Tale’ newsletters have been distributed to highlight topical issues throughout the season and update the wider industry and interested parties on crop progression. In addition, cooperative relationships have been formed with local and regional media to enable a means of highlighting issues throughout each year. This has enabled the facilitation of broader understanding of cotton production amongst communities adjoining cotton growing regions.
- Coordination of the Lachlan and Murrumbidgee Cotton Grower Association activities have been a high priority during the latter half of the 04/05 season due to the inactivity of the Association prior. The Lachlan and Murrumbidgee CGA has provided the cotton industry in Southern NSW with a vehicle for public representation and consultation, and the coordination role by the Cotton IDO has been a fundamental link in the progression and development of CGA activities.

### ***Conclusions and “take home messages”***

Extension & Research activities/ outcomes in the final 6-7 months of the project (during the tenure of Mr Scott Vaessen) as aligned to the project objectives are detailed below and provide representation of the “take home messages” that were hoped to have been conveyed.

- Establish trial/s incorporating IPM, AWM and Bollgard II technologies
- Establish demonstrations to assess thresholds for secondary pest with BollgardII®

### **Trials**

Cooperative trials in secondary pest compensation, irrigation management and Bollgard II® plant population implication, together with a number of grower trials were run throughout the season and have been entered into the Southern NSW Cotton Trial Book for 04/05.

### **Bollgard II Field Walk**

The Bollgard II Farm Walk was held in late December to highlight specific management issues such as the assessment of thresholds for secondary pests in Bollgard II cotton, and plant monitoring to manage the growth of the Bollgard II plant. The event was well attended with in excess of 25 people attending.

### **Continue to monitor insecticide resistance**

Insect collections continued through the entirety of the 04/05 season and provided data from resistance testing by CSIRO and NSW DPI researchers. The results of the resistance monitoring have been entered into the Southern NSW Cotton Trial Book which will be disseminated amongst industry during the month of October. The trial book will initially be distributed as an information CD and later as a small printing run of hard copies.

### **Secretary for the Cotton Growers Association**

#### *Lachlan and Murrumbidgee CGA & Research Committee*

The Lachlan and Murrumbidgee Cotton Growers Association was reactivated after a significant period of inactivity. A dedicated Research Sub-Committee was established to provide valuable feedback to researchers and help to coordinate local research.



### *Coordinator for the Southern NSW Cotton Competition & Awards Dinner*

The Crop competition was again very well received, and the friendly banter between competing properties provided a genuine buzz of excitement as to the prospective winners. The competition included 12 entrants from the Lachlan and Murrumbidgee Valley (80% of growers) and also encompassed categories for Bollgard II and Conventional varieties on both 1 metre, 30 inch and 15 inch row configurations. The judging panel was convened from Bourke (Mr Steve Buster, Darling Farms), Dubbo (Mr Gary Giddings, DPI Irrigation Officer) and Griffith (Mr Mick Ryan, Consultant and CCA Director). The Annual Awards Dinner was held on the 12<sup>th</sup> August 2005 to present awards for the Crop Competition and was attended by in excess of 80 people.

- Assist in developing national extension programs
- Develop extension priorities with local growers and consultants and link/adapt national extension activities into local issues.

### *Fibre to Fabric Roadshow*

The Fibre to Fabric Roadshow was held in early February and included speakers from CSIRO, Australian Cotton Ginners' Association and the ACGRA. The workshop had an attendance of 24 people, which was anecdotally one of the highest attendances for the workshop across NSW. The message regarding the standards that the Australian Cotton Industry has to maintain to keep our status as one of the premier quality cotton growing countries in the world was well received by all involved.

### *CSD Grower of the Year Field Walk – 'Buddah' Narromine*

Mr Scott Vaessen (Cotton IDO) was able to organise the charter of two planes to allow 8 Lachlan & Murrumbidgee cotton growers to attend the Grower of the Year Field Walk in Narromine in Mid February. The day highlighted the soil management practices that have helped alleviate constraints in the 'Buddah' production system, and also provided an insight into alternative horticultural production systems working in close association with cotton. The funding for the plane charter was provided via the Cotton CRC.

### *Tabbita Summer Cropping Field Day*

The Inaugural Summer Cropping Field Day was held in late February to detail the agronomy and logistics involved in growing Azuki Beans and Cotton based upon a system of 30 inch row configuration. The field day was well attended by in excess of 70 people. The speakers involved in the Cotton presentation were Mr Scott Vaessen (Cotton IDO), Patrick McGuinness (CGS – Hillston) and the property owner Ian Fraser.



### *Hillston Cotton Field Day*

A successful field day was held in early March with over 60 people attending. Speakers that were involved in the field day included Robert Mensah (NSW DPI), Rose Roche (CSIRO), Stewart Addison (Monsanto), Craig McDonald (CSD), Alistair Lowe (Retired CSIRO researcher and industry stalwart), Peter Bunce (Australian Classing Services), Michael Grabham (NSW DPI Irrigation Officer), Matt Mitchell & Nathan Payne (Local Agronomists), Rob Collins (Property Manager) and Tim Watson (Local Grower).

### *Inaugural Hay Cotton Field Day*

To accommodate the growing interest in cotton along the Murrumbidgee River, the first Hay Cotton Field Day was held at Scott & Jo Begbie's property within 5km of the Hay Township in early March. The Field Day provided an opportunity to detail the successes of growing Bollgard II cotton in close proximity to vegetable and wine grape growers, environmentally sensitive areas and the township of Hay. The field day was attended by in excess of 55 people, and the speakers involved included Scott Begbie (Property Owner), Mark Hickman (Senior Extension Development Officer, QLD DPI) and Craig McDonald (CSD). The highlights of the Hay field day were also publicised on the CSD website.

### *Murrumbidgee Field Walk*

A 'closed' field day was organised in mid March for Lachlan, Murrumbidgee & Tandou growers exclusively to travel between properties and 'walk and talk' through the operations of crops along the Murrumbidgee River. The day was very successful with in excess of 25 people attending. There were no designated speakers involved in the day, rather the property owners simply provided a brief presentation on operations to date, and then answered questions as part of an open forum.

- Produce a trial booklet detailing local trial results.

The Southern NSW Cotton Trial Book has been completed and will be disseminated amongst industry during the month of October. The trial book will initially be distributed as a information CD and later as a small printing run of hard copies.

- Distribute a local grower newsletter "Cotton tale" on a frequent basis, which promotes research results on current production issues.

The Southern NSW Cotton Tale was distributed on a regular basis throughout the 2004/05 season and provided growers, industry and interested parties with updates on topical issues, research outcomes and crop progression.

### ***Outputs***

Although cotton production in both the lower Lachlan and Murrumbidgee Valley's has been inhibited by extremely low surface water allocations there is potential for significant growth of the cotton industry to in excess of 35,000 hectares in these areas encompassed within Southern NSW. Although not yet regarded as a ubiquitous crop in Lachlan and Murrumbidgee summer farming systems, there is growing acceptance amongst the wider agricultural community of the economic, social and importantly the environmental ramifications of cotton growing.

Declining terms of trade in many of the summer cropping options and the increased importance of water use efficiency has fostered escalating interest in cotton, particularly in the more traditional rice growing regions north of the Riverine plains.



The Cotton Industry Development Officer (IDO) position located in Griffith provides an integral point of first reference for prospective cotton growers.

The Cotton IDO provides a short bridging link between research and pragmatism for the cotton growing community. Through the implementation of programs as directed by the Cotton CRC Extension Management Committee, the Cotton IDO promotes the adoption of new technology by local cotton growers that has a positive cost benefit ratio at the farm gate, and at the same time assists in the production of a valuable data base of research which can be used to increase the adoption of technology nationally.

Strategic use of local and regional media allows the Cotton IDO position to promote understanding of the technological advancements in the cotton industry and the focal points of environmental stewardship embraced by modern cotton growers.

The Cotton IDO position plays an important role in the implementation of the Cotton Industry BMP program. The incorporation of BMP in local extension activities has been increasing as new grower interest burgeons. Research work conducted throughout the project has provided valuable data to support adoption of BMP throughout the Southern Cotton growing regions and is helping to improve on-farm water use efficiency.

A major focus of the position is to also support the adoption of IPM practices by growers in the Lachlan and Murrumbidgee Valleys. The continued extension of IPM principles has aided with the development of sound IPM practice not only in cotton but also other cropping systems.

In the coordinating role of Secretary of the Lachlan and Murrumbidgee Cotton Growers Association, the Cotton IDO has played a significant part in the establishment of a business plan that will support the facilitation of educational programs for schools in the towns surrounding the immediate cotton growing regions and will also contribute to environmental programs such as strategic fish releases in the Murrumbidgee and Lachlan Rivers.

Another key feature of the Cotton Industry Development Officer position has been to develop a framework of regional trials and demonstrations (in liaison with researchers), and this has again facilitated the communication and adoption process between farmers, advisers and researchers from government and agribusiness. The extension of research by the Cotton Industry Development Officer via regular publications, workshops, field days and forums has provided growers with a quick and efficient information bridge to new technology.



### ***Project Summary***

The future presentation and dissemination of project outcomes will work in accordance with the plan for progression of the project into following years. The objectives and milestones of the project for the approaching year are outlined below and include the means in which the continual improvement process for the Southern NSW cotton growing region will be advocated.

<b>Obj No.</b>	<b>Objective</b>	<b>Methodology</b>	<b>Presentation and Dissemination</b>
<b>1</b>	Assist in developing national extension programs	Work as part of national cotton extension team	National extension team strategic plans.
<b>2</b>	Develop extension priorities with local growers and consultants and link/adapt national extension activities into local issues.	Local reference group meetings with growers and consultants.	Incorporation of local extension priorities into national extension plans.
<b>3</b>	Implement programs, which promote the adoption of IPM,	Plan and undertake on farm trials demonstrating IPM components. Liase with researchers on latest trial results and assist with any local trials. Promote adherence to IRMS for IPM and resistance management.	Field walks on aspects of IPM. Include on farm IPM trials in trial book.
<b>4</b>	Assist in the establishment and delivery of IPM short course.	Promote and advertise IPM short course.	Deliver some components of IPM short course.
<b>5</b>	Promotion of disease management options addressing specifically Black root rot and seedling disease	Liase with researchers Dr David Nehl to establish demonstrations	Field walks into disease management option trials where possible. Extension of management options through Cotton Tales, trial book and grower groups.
<b>6</b>	Assist in implementation of BMP particularly for insect pest management and land and water management.	Liase with local Cotton Australia Grower Services Manager regarding ways to assist.	Promotion of BMP  Compilation of technical resources to support land and water module.
<b>7</b>	Distribute a local grower newsletter on a frequent basis that promotes research results on current production issues.	Identify and recognise topical and timely issues for inclusion in Cotton Tales.	Production and distribution of Cotton Tales newsletter regularly throughout season.
<b>8</b>	Promote the use of Decision Support Systems to growers and consultants.	Decision Support Systems promoted through grower group meetings and Cotton Tales	Decision Support Systems workshops.
<b>9</b>	Produce a trial booklet detailing local trial results.	Plan and undertake local trials. Call for any other on farm trials to be included in trial book.	Compilation of local trials and distribution of trial book.

Future research objectives should align to priorities highlighted by local producers and industry and by the National Cotton CRC Extension Team.



## ***Publications***

Please refer below for a list of articles that have been printed during the time period in which Mr Scott Vaessen has occupied the position of Cotton IDO. Although many of the items included in the list are not designated research publications arising from the project the list details the media mediums used throughout the 04/05 season. The articles marked with \* have been included as attachments to provide sample of publications.

### ***Grower Magazines and Articles:***

\*Vaessen, S.J. (2005) Evolution of Bollgard II Cotton. *IREC Farmers' Newsletter*. No. 169. Autumn 2005.

\*Vaessen, S.J. (2005) New grower reflections on 1<sup>st</sup> cotton season, *Focus on Farming*. 20<sup>th</sup> April, 2005. The Area News – Griffith

\*Vaessen, S.J. (2005) Make Hay whilst the sun shines, *CSD News*. 23<sup>rd</sup> March, 2005. [www.csd.net.au/news.asp?news=1627](http://www.csd.net.au/news.asp?news=1627)

Vaessen, S.J. (2005) Busy month ahead for the cotton diary, *Focus on Farming*. 17<sup>th</sup> February, 2005. The Area News – Griffith

Vaessen, S.J. (2005) Bollgard II Cotton – Reducing pesticide use further, *Focus on Farming*. 5<sup>th</sup> January, 2005. The Area News – Griffith

Vaessen, S.J. (2004/05) Southern NSW Cotton Tales, NSW DPI.

### ***Media interviews:***

Vaessen, S.J. (2005) Defoliation wrap-up and season analysis, 2RG – *On Target in Agriculture*. 29<sup>th</sup> April, 2005. Griffith.

Vaessen, S.J. (2005) Cotton Season Progress, 2RG – *On Target in Agriculture*. 29<sup>th</sup> April, 2005. Griffith.

Vaessen, S.J. (2005) Cotton Calendar, 2RG – *On Target in Agriculture*. 4<sup>th</sup> March, 2005. Griffith.

Enever, P. (2005) Southern farmers cotton on. *The Rural*, 15<sup>th</sup> April, 2005. Interview of Cotton Industry Development Officer – Mr Scott Vaessen on cotton season progress.

Early in the 2005/06 season the first Southern NSW Cotton Trial Book will be released as the first designated publication of research and seasonal observations for the Lachlan & Murrumbidgee Valley's.

Unfortunately there is no list available of publications that arose during the tenure of Mr Evan Brown in the Cotton IDO position.



## ***Conclusion***

The impact of the role of the Cotton Industry Development Officer for the Lachlan and Murrumbidgee can most appropriately be addressed by again considering the triple bottom line ramifications of the economic, social and environmental benefits that have been facilitated by the project.

It is difficult to objectively quantify the outcomes of a project such the Cotton Industry Development Officer as the progressive nature of the cotton industry, and the Lachlan & Murrumbidgee region in particular, generally results in a 100% uptake of pragmatic ideas where there is a definitive cost-benefit ratio.

It is the role of the Cotton IDO position to shorten the information and adoption bridge between science and farm-gate pragmatism and to facilitate clear understanding of concepts amongst the cotton industry and the wider community. There may be a more succinct cost-benefit ratio that can be determined by growers after adopting concepts and technology conveyed by the Cotton IDO position; however this research has not been conducted hitherto.

## ***Part 4 – Final Report Executive Summary***

---

Although cotton production in both the lower Lachlan and Murrumbidgee Valley's has been inhibited by low surface water allocations throughout the duration of the project there is potential for significant growth of the cotton industry to in excess of 35,000 hectares in these areas encompassed within Southern NSW. Cotton is not yet regarded as a ubiquitous crop in Lachlan and Murrumbidgee summer farming systems, however there is growing acceptance amongst the wider agricultural community of the economic, social and importantly the environmental ramifications of cotton growing.

Declining terms of trade in many of the summer cropping options and the increased importance of water use efficiency has fostered escalating interest in cotton, particularly in the more traditional rice growing regions north of the Riverine plains.

The Cotton Industry Development Officer (IDO) position located in Griffith provides an integral point of first reference for prospective cotton growers and also provides a short bridging link between research and pragmatism for the cotton growing community. Through the implementation of programs as directed by the Cotton CRC Extension Management Committee, the Cotton IDO promotes the adoption of new technology by local cotton growers that has a positive cost benefit ratio at the farm gate, and at the same time assists in the production of a valuable data base of research which can be used to increase the adoption of technology nationally.

The Cotton IDO position also works strategically in the wider community to promote understanding of the technological advancements in the cotton industry and the focal points of environmental stewardship embraced by modern cotton growers. Regular newsletters, print media articles and regular radio segments highlight topical issues throughout each season, and the invitation for measured consultation on industry issues is always open.

The Cotton IDO position plays an important role in the implementation of the Cotton Industry BMP program. The incorporation of BMP in local extension activities has been increasing as new grower interest burgeons. Research work conducted throughout the project



has provided valuable data to support adoption of BMP throughout the Southern Cotton growing regions and is helping to improve on-farm water use efficiency.

A major focus of the position is to also support the adoption of IPM practices by growers in the Lachlan and Murrumbidgee Valleys. The continued extension of IPM principles has aided with the development of sound IPM practice not only in cotton but also other cropping systems.

Whilst maintaining a coordinating role for the Lachlan and Murrumbidgee Cotton Growers Association, the Cotton IDO has played a significant part in the establishment of a business plan that will support the facilitation of educational programs for schools in the towns surrounding the immediate cotton growing regions and will also contribute to environmental programs such as strategic fish releases in the Murrumbidgee and Lachlan Rivers.

Another key feature of the Cotton Industry Development Officer position has been to develop a framework of regional trials and demonstrations (in liaison with researchers), and this has again facilitated the communication and adoption process between farmers, advisers and researchers from government and agribusiness. The extension of research by the Cotton Industry Development Officer via regular publications, workshops, field days and forums has provided growers with a quick and efficient information bridge to new technology.