Australian Cotton Cooperative Research Centre

November, May & Final Reports

REPORTS

Part 1 - Summary Details

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

COTTON CRC Project Number: 4.2.13 AC

November Report:	☐	Due 12 November 2004
May Report:	☐	Due 28 May 2004
Final Report:	☒	Due within 3 months of project completion

Project Title: Cotton Industry Development Officer –Gwydir Valley

Project Commencement Date: 1/07/03 **Project Completion Date:** 30/06/04

Research Program: 4. Education, Transfer of Technology

Part 2 – Contact Details

Administrator: (Name and position of officer responsible for all correspondence).

Organisation: (Organisation administering the research project).

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Researcher 2 (Name & position of additional researcher or supervisor).

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Other Staff & Collaborators – Please list

Signature of Research Provider Representative: _____

Part 6 – Final Report Format

The points below are to be used as a guideline when completing your final report. You may wish to vary the structure slightly.

1. Outline the background to the project and industry need.

The Industry Development Officer (IDO) of Moree (Julie O'Halloran) is part of the Australian Cotton National Extension Team. Julie O'Halloran has been in this position for the full 12 months of the projects duration.

As part of the Australian Cotton National Extension Team this position is involved in the planning and developing of national extension activities to address national industry issues. As well as playing a role in national extension activities, the position also has worked with local growers and consultants to develop extension programs focusing on local issues. The position provides strong links between growers, consultants and researchers to ensure information flow between all stakeholders.

Large scale farm trials / demonstrations form a critical component of extension activities. This position has been successful in increasing technology adoption by local growers. The position is pivotal in the promotion of IPM systems and over the last 3 years has assisted in the development and facilitation of a number of grower groups in the Gwydir Valley. These grower groups also serve as a great mechanism for promotion and discussion of other industry research and issues. The promotion of BMP to growers and the local community are also key components of this position.

As a member of the disease team Ms O'Halloran has made significant contribution to the national extension focus team for disease management.

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

Objective	Achievement
1. Assist in developing national extension programs	I actively participated in the Annual Extension Workshop for the strategic planning of extension activities. I have also made significant contribution as a member of the Weeds and Diseases focus team.
2. Develop extension priorities with local growers and consultants and link/adapt national extension activities into local issues.	A reference group meeting is usually held with local growers and consultants. Due to the number of growers not growing cotton during the 2003/04 season extension priorities were developed through the local grower groups that were active during this season. However, a reference group meeting was held to identify

	priorities for the coming 2004/05 season.
3. 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.	Monitoring for Trichogramma continued during the 2003/04 season and results were presented at grower group meetings. This has meant that growers are considering what levels of parasitism may be present when making spray decisions. Assistance was provided to researchers in the release of a parasitic fly for GVB as another tool for IPM. Magnet® demonstrations were planned for several grower group meetings but unfortunately rain interrupted every application. These will be attempted again in the 2004/05 season. The 2003/04 season saw quite high numbers of whitefly and in particular silverleaf whitefly in crops around the valley. The need for continued monitoring of this pest through leaf collections was promoted as well as management options should control become necessary. This was primarily done through CCA and grower group meetings as well as Cotton Tales and one-on-one grower visits.
4. 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 not held in the Gwydir for 2003/04. The short course schedule was full before there were sufficient numbers to run one in the Gwydir. Grower groups were ongoing this season, however, several groups were not active this year as many growers were not growing cotton. Other groups continued to meet and looked at on farm trials and demonstrations. There were regular discussions on insect pressure and control options as well as progress and management of Bollgard II®. A new grower group also met for the first time and has expressed interest in continuing to meet. This position also works closely with Cotton Australia and through these grower groups assist with the promotion of BMP, particularly in regard to insect pest management.
5. Co-ordinate the collection of egg samples from the local district for resistance	This position assisted in the co-ordination of egg collections for resistance testing. This was achieved through continued promotion of the

testing	need for resistance testing and ongoing communication with growers and consultants regarding insect pressure.
6. To promote Decisions Support Systems such as SOILpak, SPRAYpak, COTTONlogic, HydroLOGIC and Ozcot.	This position promoted Decision Support Systems through grower meetings, field days, Cotton Tales and individual grower visits. A HydroLOGIC workshop was organised pre-season and a HydroLOGIC demonstration trial ran during the 2003/04 season. Widespread hormone damage was apparent during the 2003/04 season and grower discussions of this meeting were used to promote the information in SPRAYpak that could assist in minimising spray drift.
7. Produce a trial booklet detailing local trial results.	The trial book has been compiled and is the final stages of editing and awaiting approval.
8. Distribute a local grower newsletter on a frequent basis that promotes research results on current production issues.	Production and distribution of the 'Cotton Tales' newsletter continued during the 2003/04 season. This newsletter presented timely and topical information to local growers consultants and other industry personnel.
9. Extension of water use efficiency and salinity issues and potential management options	A grower group meeting was held with researchers to discuss the impact of sodium levels on other nutrients and practical implications. Trials have been planned for the coming 2004/05 season. Water use efficiency has been a topical issue at grower group meetings. Discussion has focused on what growers within the group have done. Water use efficiency tips have been distributed via Cotton Tales.

General Aims

- To co-ordinate the adoption of research into sound management practices in the Gwydir Valley cotton-growing region.

The position has contributed to this general aim through most extension activities which are aimed at the presentation of research to improve management of some aspect of cotton production, economically and environmentally.

- To develop a framework of regional trials/demonstrations (in liaison

with researchers) as part of the adoption process and to facilitate better communication between farmers, advisers and researchers from government and agribusiness.

Several trials/demonstrations were held during the 2003/04 season in liason with researchers. Field days were organised for most of these to assist with promotion of the research. Generally researchers were present at these to answer questions. Assistance with sampling and data collection for other research trials was also provided.

To help the Gwydir Cotton Growers Association direct and respond to gaps in the current research base

This season a major issue for the Gwydir Valley CGA was widespread hormone damage. Liason between Cotton Australia, NSW Agriculture Disrict Agronomists, Gwydir Valley CGA and CCA attempted to address some of the causes of this widespread damage and ways to minimise further damage throughout the season.

3. How has your research addressed the Cotton CRC's economic, environmental and social objectives ?

The Gwydir valley IDO position has addressed the Corporations three outputs through the core objectives for the position.

Sustainability – This project has addressed the Corporations sustainability output through the promotion of IPM tools. This has been facilitated through grower group meetings, field days and other industry meetings. The communication facilitated through grower group meetings and promotion of IPM tools has benefits for both chemical and non-chemical management of pests and beneficials. Management of weeds and diseases has also been a focus of the Gwydir valley IDO's activities due to the increased confirmation of Fusarium infected farms within the Gwydir valley and the role of the Gwydir valley IDO within the weeds and diseases focus team. This has included trial work into practices to improve production with Fusarium wilt, field walks and updates to keep growers informed. Activities have also included promotion of best weed management practices particularly with Roundup Ready® technology. This position has also assisted in environmental management for sustainability through the promotion of things like the Riparian Guidelines and assistance with biodiversity projects. There has been some limited work on salinity and sodicity issues and water use efficiency.

Profitability and Competitiveness – The Gwydir valley IDO position has addressed this output through the promotion of improved farm management strategies. This has been achieved through the promotion of IPM tools and practices. There are 7 grower groups within the Gwydir valley. During the 2003/04 season a new group met for the first time and are interested in continuing to meet in the future. These groups are facilitated by the Gwydir valley IDO to meet the needs of the individual groups. The grower groups are primarily used to increase communication between

growers within the groups. These groups include farm walks and mini field days to look at new practices and technologies and discuss these within the group. Groups within the Gwydir valley also readily meet with other groups to get a wider perspective on different issues. There has also been increasing focus lately on optimising nutrition which has been discussed by some of these grower groups. This has included the interaction of sodicity with nutrition and the impacts on the cotton production system.

People and communities – The IDO position has an integral role in addressing this output to regionally adapt research and transfer new technologies and strategies. The IDO acts as a liason between researchers and growers by maintaining good links with researchers, growers and consultants. This position is also involved promoting 'good news'' cotton stories in local media. The IDO role also assists Cotton Australia in the promotion of BMP to the cotton industry and the wider community. Last season did see widespread herbicide drift issues in which the IDO was involved in addressing. Spray drift is a community issue.

4. **Detail the methodology and justify the methodology used.**

The methodologies used by this position to extend research, new technologies and strategies include the Cotton Tales newsletter, grower group meetings, association meetings (CCA, CGA), field days, farm walks and media articles. The methods used are employed based on feedback from growers, either from one-on-one discussions or from grower group meetings, on preferred methods of receiving information for particular issues. Past experience of extension activities that have worked well and those that have not also determines what methods are used.

5. **Detail results including the statistical analysis of results.**

6. **Discuss the results, and include an analysis of research outcomes compared with objectives.**

See point 2.

7. **Provide an assessment of the likely impact of the results and conclusions of the research project for the cotton industry. Where possible include a statement of the costs and potential benefits to the Australian cotton industry and future research needs. What are the triple bottom line indicators of the impacts or measures of success of your project.**

This project should increase local grower and industry knowledge of issues facing the industry and research results, strategies and technologies to address them. The implementation of trials at a local level assists with promoting and developing confidence in new technologies or strategies. Reduced reliance on insecticide application is a likely result from the promotion of the IPM tools available and assistance in developing these at a local level eg Trichogramma wasps. This is an economic, environmental and social benefit in terms of reduced chemical

applications. Other specific likely impacts of the project include a better understanding of Bollgard II® technology and therefore its management to optimise yield, quality and gross margin. This will again benefit economically, environmentally and socially as growers can get the most out the technology with associated reductions in insecticide applications.

A number of Fusarium management trials were run in the Gwydir during the 2003/04 season. A series of field walks were also run in conjunction with these to assist growers in understanding what they can do to manage and minimise the development of the disease and its impact on production. Similarly, promoting awareness of the abundance of whitefly last season and monitoring and management options were aimed at minimising the impact of this pest on cotton production.

Involvement in the herbicide spray drift issues that were widespread last season addresses production, environmental and community areas. Herbicide spray drift can cause significant economic damage to susceptible crops while drift of any pesticide is of concern to the community as a whole due to health and environmental issues.

8. **Describe the project technology (eg. commercially significant developments, patents applied for or granted licenses etc).**

9. **Provide a technical summary of any other information developed as part of the research project. Include discoveries in methodology, equipment design, etc.**

10. **Detail a plan for the activities or other steps that may be taken;**

    (a) to further develop or to exploit the project technology.

Activities to further develop work already undertaken:

Further local trials during the 2004/05 season to continue work on Bollgard II and its management.

Continuation of trials comparing conventional cotton and Bollgard® II in a dryland cotton system.

Ongoing monitoring and promotion of the role of parasitic wasps such as Trichogramma sp as part of an IPM system.

Nutrition and Fusarium management trials in liason with researchers.

Coordinated approach to promote spray drift awareness and drift risk factors.

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

Distribution of Gwydir valley trial book for 2002/03 and 2003/04 season. Currently due to be printed.

Timely presentation and promotion of trial results in Cotton Tales newsletter and grower group meetings throughout the season.

Demonstration trials and field walks planned for particular areas of interest.

Ongoing grower groups meetings to present and discuss research and other topical issues.

Coordinated approach to promote spray drift awareness and drift risk factors.

11. List the publications arising from the research project.

"Beneficial wasps kill grubs before they hatch" NSW Agriculture Today, The Land, February 26th, 2004.

Dryland Bollgard® II row configuration comparisons. 2004 Australina Cotton Conference. Poster session

12. Are changes to the Intellectual Property register required?

No