



Australian Cotton Cooperative Research Centre

November, May & Final Reports

Part 1 - Summary Details

REPORTS

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

COTTON CRC Project Number:

November Report: Due 14-November-03
May Report: Due 29-May-03
Final Report: Due within 3 months of project completion

Project Title: Cotton Industry Development Officer - Gwydir valley

Project Commencement Date: 01/07/00 **Project Completion Date:** 30/06/03

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.

1. Outline the background to the project.

The Industry Development Officer (IDO) of Moree (Julie O'Halloran) is part of the Australian Cotton National Extension Team. Julie O'Halloran started in this role 18 months into this project in December 2001. The position was vacant for nearly six months leading up to this.

As part of 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 2 years has assisted in the development and facilitation of a number of area wide management groups in the Gwydir Valley. This work has included the use of comparative analysis techniques to help group members examine their farming practises.

The promotion of BMP to growers and the local community are also key components of this position.

Fusarium Wilt is a disease that is increasing in incidence in the Gwydir Valley. As a member of the disease team Ms O'Halloran has made significant contribution to the national extension focus team for disease management. Specific work on Fusarium Wilt has involved field trials in conjunction with Dr. David Nehl.

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

1. Assist in developing national extension programs. The Gwydir valley IDO has attended and participated in the annual extension workshop for strategic planning of extension activities. The Gwydir valley IDO has also been a member of the Weeds and Diseases focus team and as such has been involved in the development of extension material and information on weeds and diseases for use by the national cotton extension team. This has included working on planning for the focus team activities and contributions to focus team publications. Wherever possible extension activities were coordinated as part of the national extension program.

2. Develop extension priorities with local growers under national extension priorities. Priorities for extension activities were determined with local growers

through a grower reference group. Discussions on extension priorities were based around the national extension priorities of diseases, insects, weeds, water, farming systems and environment. Extension priorities are also developed through ongoing association with the local Cotton Grower Association, Cotton Consultants Association (CCA) and local grower group meetings. Extension activities were then developed to address those issues identified as a priority and of interest to individual grower groups. In many cases, issues identified within the valley already formed part of the national extension program.

3. Link/adapt national extension activities into local. National extension activities were linked to local activities through trials conducted within the Gwydir valley that addressed both national and local issues. These have included fruiting factor trials and Bollgard II® damage trials. This was also achieved through the Cotton Tales newsletter and tailoring the information presented to the local level.

4. Implement programs which promote the adoption of IPM, particularly for insect control and resistance management for both conventional and transgenic technology. Programs to promote the adoption of IPM programs were a major focus for this project. The main methods of promotion were through the facilitation of the 7 area wide management or grower groups as well as attendance at CCA meetings and the Cotton Tales newsletter. Individual grower groups are very different in terms of how they operate and the priorities for each. Guest speakers were organised for some of these meetings including researchers or other industry personnel.

Work to promote IPM has also included promoting the roles of beneficial insects in pest management. This has involved such things as assisting growers with release of *Trichogramma* parasitic wasps and promotion of the role of *Trichogramma* parasitic wasps through grower group meetings. The Cotton Tales newsletter has been used to promote and inform cotton growers, cotton consultants and other industry personnel of IPM tools and guidelines and resistance management strategies and results. The Gwydir valley IDO has always attended local grower and consultant meetings regarding the Insecticide Resistance Management Strategy. This work has required maintaining good links and relationships with relevant researchers.

5. Coordinate the collection of egg samples from the local district for resistance testing. Egg collections for resistance testing have been coordinated by the Gwydir valley IDO. This has been made more difficult over the last couple of years by low egg pressure throughout the cotton growing periods.

6. Assist in the implementation of Best Management Practices (BMP). This position has also assisted in the promotion and implementation of BMP through liaison with Cotton Australia Grower Service Managers. Pre season grower group meetings were coordinated as a forum for BMP, Pesticide Application Management Plans and IPM strategies.

7. Conduct a number of large scale field demonstrations to promote the adoption of new technology. Field demonstrations or mini field days are run to promote new

technology. These have primarily been held for individual grower groups who have expressed an interest in that particular technology.

8. Promote and extend decision support tools and information resources developed for the industry. Decision support tools and information resources are continuously promoted to the industry through grower group meetings, the Cotton Tales newsletter and field days.

9. Produce trial booklet detailing local trial results. A Gwydir valley trial booklet detailing local trial results has been distributed to Gwydir valley cotton growers and consultants. The trial booklet for the 2002/03 season is nearing completion (approximately 90% complete).

10. Distribute local grower newsletter on a frequent basis which promotes research results on current production issues and valley specific issues. The Cotton Tales newsletter was distributed on a regular basis throughout the cotton growing periods (approximately weekly) and less frequently during the winter months to Gwydir valley cotton growers, consultants and other industry personnel. This newsletter presented seasonal data, dates of field days and meetings, trial results and information on issues relevant to the cotton industry. An evaluation of how the Cotton Tales newsletter is perceived and used by the local industry was undertaken.

3. How has your research addressed the Corporations three outputs: Sustainability, profitability and international competitiveness, and/or people and community?

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 the grower group meetings. Promotion of IPM tools has benefits for non-chemical management of pests and beneficial insects. The communication facilitated through grower group meetings 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 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 the adoption of holistic environmental management systems (See objective 6).

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 AWM grower groups within the Gwydir valley. 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.

In addition to the AWM groups this position has also been involved with a benchmarking group. This group has focused on insect management in the past and after several years is also starting to focus on issues such as water management and optimising nutrition.

People and communities - The IDO position has an integral role in addressing this output to regionally adapt research and transfer new technologies and strategies (See Objective 3). The IDO acts as a liason between researchers and growers by maintaining good links with researchers, growers and consultants (See Objective 2).

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.

Promotion of IPM tools available has resulted in increased awareness and interest in the role of Trichogramma parasitic wasps. During the 2002/03 season parasitism levels were considered when making spray decisions and in some cases based on these parasitism results the decision was made not to spray, reducing insecticide applications. This was not limited to cotton but also grain crops that are also subject to attack by Helicoverpa species.

Distribution of the Gwydir valley trial book has allowed growers and local industry access to local trial results including fruiting factor trials conducted in the Gwydir. In response to this local consultants will be looking at fruiting factors during the 2003/04 season.

Evaluation of the Cotton Tales newsletter indicated the value and usefulness of this newsletter in getting information out to growers and local industry as well as providing feedback to improve the newsletter to better meet growers needs. Extension priorities identified by a local cotton grower reference group were included in the activities by the Gwydir valley IDO to address some of the issues raised by this group eg Bollgard II® and Fusarium trials.

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.

This project should increase local grower and industry knowledge of issues facing the industry and research results, strategies and technologies to address them. 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. The implementation of trials at a local level assists with promoting and developing confidence in new technologies or strategies. Field days, farm walks, Cotton Tales newsletter, grower groups are the tools used to promote these.

Maintaining links with local growers and industry ensures that local issues are addressed as well as national issues. Feedback from growers and industry through the IDO's can help direct research to address those issues identified as a priority. The promotion of decision support systems and information resources ensure that cotton growers and industry have information available to make informed decisions.

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. Fruiting factor trials were undertaken to develop and promote fruiting factor as a more reliable retention monitoring tool compared with first position retention for monitoring crop progress.

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

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

9. 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 2003/04 season to continue with the work on Bollgard II and its management.

Continuation of trials using fruiting factors and how they can be used 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.

With the introduction of GM technology such as Bollgard II® and increased confidence and implementation of IPM systems the comparative analysis group in the Gwydir valley is interested in shifting the focus from insects to other issues such as optimising nutrition and irrigation.

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

Distribution of Gwydir valley trial book for 2002/03 season.

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

10. List the publications arising from the research project.

O'Halloran, J. (2003). An "eye in the sky" helps irrigation scheduling. The Australian Cottongrower. February-March

11. Are changes to the Intellectual Property register required?

No