



Final Report

Capacity & Community | Cotton Research & Development Corporation

Part 1 - Summary Details

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

CRDC Project Number: **CSP182**

Project Title: CSIRO Field Experiments at ACRI

Project Commencement Date: 1/7/06 **Project Completion Date:** 30/6/07

Research Program: Capacity & Community

Part 2 – Contact Details

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

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Ph:

Fax:

E-mail:

Signature of Research Provider Representative: _____

Part 3.3 – Final Reports (due 3 months after completion of project)

1. Outline the background to the project.

Costs associated with growing cotton on ACRI are part of an agreement between the Institute owner, NSW DPI and CSIRO. A site committee at ACRI comprising NSW DPI (chair), CSIRO and CRC coordinates activities and site management. This project funded a small part of CSIRO field costs as charged by NSW DPI. The funds provided to CSIRO by CRDC were paid direct to NSW DPI to part fund field operation costs. This report is for a one year project in 2006/07.

Detailed aspects of each specific project will be reported in their annual and final reports.

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

The aim was to part fund the routine farm management operations required on experiments done by CSIRO at the Australian Cotton Research Institute in the disciplines of Plant Breeding, Entomology and Agronomy.

The following table lists CSIRO Plant Industry and Entomology field research projects at ACRI in 2006/07 funded by CSIRO, CRDC and CRC occupying 66.8 ha (CSIRO's 80ha Leitch lease is a separate operation to ACRI and those costs were not included in the project).

| Block | ha | what | WHO |
|-------|------|--------------------|--|
| 1W | 4.0 | Entomology | Wilson |
| 1E | 0.2 | Drip irrigation | Neilson |
| 2Old | 0.3 | Breeding (vert) | Constable |
| 6 | 4.0 | Nutrition | Rochester |
| 18 | 6.2 | Entomology | Wilson |
| 18E | 1.0 | Entomology | Wilson |
| A1 | 7.6 | Irrigation | Yeates |
| A4 | 8.5 | Breeding | Constable |
| B1 | 12.4 | Breeding | Constable |
| B2 | 6.6 | Physiology | Bange, Yeates, Neilsen, Knox, Roche, Deutscher |
| B3 | 6.7 | Breeding | Constable |
| D5N | 2.3 | Breeding (dryland) | Constable |
| R5 | 7.0 | Entomology | Downs, Whitehouse |

Detailed aspects of each specific project will be reported in each annual and final reports.

3. Provide a conclusion as to research outcomes compared with objectives. What are the “take home messages”?

CSIRO field research projects which have been partly supported by this CRDC funding have addressed important issues of relevance to future viable and sustainable cropping systems (see list in section 2).

Detailed aspects of each specific project will be reported in their annual and final reports.



4. 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 or the Australian community.

Detailed aspects of each specific project will be reported in their annual and final reports. Briefly however, research has been successful in 2006/07 in all areas:

- Irrigation studies have obtained more precise information on the effect of evaporative demand and soil water holding capacity to enable recommendations on irrigation scheduling to maximise water use efficiency; larger scale irrigation scheduling experiments demonstrated that result.
- Nutrition studies have measured legume rotation nitrogen contributions to cotton nutrition and accurate information has been obtained on removal of all nutrients to enable recommendations on nutrient replacement programs under high yield. Methods of estimating nutrient use efficiency have been developed.
- Physiology studies have successfully measured the impacts of some climatic factors on fibre quality. This information will assist in recommendations for crop management to optimise fibre properties such as micronaire.
- New varieties are continually being developed. Sicot 75, a potential replacement for the widely grown Sicot 71, will be released in 2007, with substantial increase in fibre length and Fusarium resistance. There will also be a limited release of a Bollgard II®/RRFlex® variety in the Sicot 70 family.
- Entomology studies have refined some aspects of Integrated Pest Management for emerging pests such as aphids and mirids.

Part 4 – Final Report Executive Summary

This project has part funded field operation costs charged by NSW DPI to CSIRO for experiments on ACRI at Narrabri in 2006/07. More than 10 projects have been supported and all field operations have been done well through collaboration within CSIRO and between CSIRO and NSW DPI.

Detailed aspects of each specific project will be reported in their annual and final reports. CSIRO field research has addressed all important areas for yield and sustainability: breeding, disease resistance, soil and water management and insect management. Results of that research have substantially improved industry performance and value.