

Cotton Research and Development Corporation

Project Title: Development and field testing of micro-computer cotton management packages

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Research Organisation: CSIRO Plant Industry

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1. Introduction

Since 1991 CRDC has supported the development of micro-computer based decision support systems, entomoLOGIC and hydroLOGIC. EntomoLOGIC has replaced SIRATAC for insect pest management and has also broadened the user base to include many private consultants. It is being continually updated to incorporate the latest pest management research and practices.

EntomoLOGIC was field tested by over 100 growers and consultants in the 1992/93 season¹. At the same time a series of commercial-scale field trials of entomoLOGIC was conducted by CSIRO in the Namoi Valley. These trials, covering 4 sites in 1992/93, aimed to evaluate a soft approach using only selective chemicals (eg Bt and Chlorfluazuron) and also to demonstrate the value of entomoLOGIC as an aid to decision making. The trials were visited by large groups on field days and aroused considerable interest. Warwick Madden conducted an expanded series of large scale trials in the 1993/94 season, covering 5 sites in the Lower Namoi, Upper Namoi and dryland (Edgeroi).

The hydroLOGIC program² was also released commercially for the 1992/93 season. This program has always aroused considerable interest in the industry, particularly among consultants, with its what-if simulation capabilities. Sales of hydroLOGIC were initially slow, but there are now around 100 registered users after CSIRO assumed full responsibility for its distribution.

The development of entomoLOGIC has been supported by annual workshops in 10 growing regions and extensive large scale collaborative field trials. These field trials were initially conducted by Mr Warwick Madden, and later by Sandra Deutscher. The purpose of the trials is to demonstrate effective crop management using entomoLOGIC and to collect data to support the incorporation of IPM strategies into future program recommendations.

In 1993 the entomoLOGIC Development Group (EDG), comprising consultants, users and representatives of grower associations, was formed to help set priorities for further development and promote adoption of entomoLOGIC. Mr Bruce Pyke of CRDC is chairman of this group. The group aims to meet up to 6 times annually, including 3 times during the cotton season to provide immediate feedback. While most meetings are held at Myall Vale, meetings are also held periodically in other valleys to allow local representatives to attend during the season. The last meeting in Warren attracted 25 participants, and included a detailed discussion of features required in entomoLOGIC Version 2.

Expected Outcomes and benefit to the cotton industry

- Effective management packages incorporating the latest research results and management strategies with input from practical experience and field testing.
- Effective systems for farm data collection and record keeping and management of trials.
- Improved adoption of programs with training and support available in all growing regions.
- Development and validation of integrated pest management strategies to reduce the dependence of the industry on broad spectrum pesticides.
- Development of a tool to facilitate the implementation of management strategies for Bt cotton.