

Handheld decision support takes science to the field

By Sandra Deutscher, Michael Bange, Scott Johnson, David Larsen, Darren Linsley and Stewart Whiteside

Save time and make better in-field decisions. Streamline your insect data entry process, and support proficient and timely pest management decisions, with the newly developed software, CottonLOGIC for the Palm OS handheld.

For many years, cotton pest managers have requested an electronic device that can be taken into the field to streamline the data entry process, run models of pest development, generate in-field reports, access historical data for insects and crops, and most of all, save time.

Advances in computer technology over the past few years, with strong support from industry, have enabled this vision to become a reality, with many pest management components of CottonLOGIC now available for handheld devices that run the Palm operating system (Palm OS).

Developed by the CSIRO/Cotton CRC cotton management support systems team at Narrabri, these handheld devices are reliable and robust enough to meet the rigours of field data collection.

Extensive evaluation and feedback by a team of cotton pest managers from various regions, has shown the system to be extremely useful for effective pest management.

Why develop for the Palm OS handhelds?

Significant research was devoted to choosing the most suitable platform on which to develop the software. The Palm operating system provided the necessary features required for the development and adoption of this type of technology.

Palm OS handhelds are extremely popular organisers that are:

- Compact;
- Inexpensive;
- User friendly;
- Designed to be viewed in direct sunlight;
- Have infra-red capabilities;
- Recognises hand writing;
- Are relatively easy to develop software for; and,
- Have a host of other useful tools for different applications.



Mobilise data from a 'bulky' desktop computer to a pocket-sized device for in-field decision support.



Download your daily insect checks simply with a press of a button.

In a recent survey on a significant website associated with development of software for handheld development (www.pdadeveloper.com), 84.6 per cent of those who frequently visit the site develop specifically for the Palm OS handhelds, as opposed to 2.87 per cent who are developing for Windows Pocket PC handhelds alone.

Features of CottonLOGIC for Palm OS handhelds

The current functionalities include:

- Insect data entry for pests and beneficials, based on multiple crop entries;
- Insect density reports for conventional crops, including results from the Helicoverpa development and prediction model;
- Insect density reports for Ingard crops, including the results from the previous check, to assist in management decisions;
- In field reporting of pest and beneficial status for 'on the spot' printing;
- Insect data from the past 16 days prior to the current check, for use in the two-spotted spider mite model that indicates the level of infestation and a predicted yield loss;
- The ability to edit insect data or crop information such as plant populations;
- The capacity to enter temperature forecasts to enhance the Helicoverpa population model;
- The ability to download crop profiles from multiple datasets via the PalmOS Manager, which is a program responsible for managing data between CottonLOGIC (PC) and your PalmOS, handheld;
- The ability to use and synchronise multiple handhelds with the one desktop system; and,
- The opportunity to use your time more efficiently while the handheld is synchronising.

Evaluating CottonLOGIC for the Palm OS

To create a useful tool for pest managers, two phases of rigorous in-field evaluation activities were conducted. The first was conducted by Cotton CRC research colleagues in Northern Australia over the winter of 2001. This allowed the development team to fix any major problems before releasing it to a much larger group (20 pest managers) across the industry in the 2001–02 summer. The group varied in terms of the size of their enterprises and use of the software. The main outcome from these activities was a list of ideas and features that would be needed to ensure that CottonLOGIC for the Palm OS was successful. The majority of the features and ideas generated from this evaluation have been implemented.

REGIONAL WORKSHOP CALENDAR			
Date in September	Location	1st Session (approx. 2hrs)	2nd Session (approx. 1hr)
2	Goondiwindi – Royal Hotel	9.00am	11.30am
3	Dalby – RSL Club	9.00am	11.30am
4	Theodore – Hotel	9.00am	11.30am
5	Emerald – Ag College	9.00am	11.30am
6	St George – DPI	11.00 am	2.00pm
9	Mungindi – RSL Club	11.00 am	2.00pm
10	Narrabri – ACRI	9.00am	11.30am
11	Gunnedah – RSL/Bowling Club	9.00am	11.30am
12	Moree – Ag Skills Centre	9.00am	11.30am
16	Walgett – Sports Club	9.00am	11.30am
17	Bourke – Bowling Club	9.00am	11.30am
18	Hillston – Ex-services Club	9.00am	11.30am
19	Trangie – Ag Research Station	9.00am	11.30am
20	Warren – Bowling Club	9.00am	11.30am

If you wish to attend, please register by contacting Sandra Deutscher on ph 02 6759 1880.

Solutions were also explored to address any concerns raised by the group in terms of efficiency and durability of using the handheld devices in the field. An example of this was that we were able to find a plastic water-resistant pouch that protected the device, and made it easy to carry and use.

In addition to the field evaluation, an independent consultant was also employed to initially assess the evaluation group's expectations prior to the use of CottonLOGIC for the Palm OS. All interviewees mentioned that it would save time with data entry, provide better quality data with fewer mistakes, provide a set format for data collection, and add value to the service that a consultant provides.

At the end of the season the independent consultant assessed whether the product had genuine value and potential in the future. All interviewees saw various benefits in using the handheld system, and expressed the desire to use it again next year. Many of them commented that it "made life easier", and "it is good to help make decisions, both better ones and more timely ones, as we don't have to go back to the office."

Future efforts are being made to incorporate the opportunities that evolved from the evaluation activities, providing they are not beyond the current Palm technology and fit within the current objectives of the cotton management support systems team.

Information and training

To pick up your free copy of CottonLOGIC for Palm OS handhelds, visit the Cotton CRC stand at the 2002 Australian Cotton Conference. For further information contact David Larsen, the coordinator of the Australian Cotton CRC's Technology Resource Centre on ph: 02 6799 1534.

For free training in the use of CottonLOGIC for both the Handheld and PC, come along to a workshop in your region. The training will be broken up into two sessions. The first will focus on CottonLOGIC (PC) and the second will provide basic training on how to use CottonLOGIC for Palm OS handhelds. During the workshop there will also be an opportunity to pick up the latest information packages, such as the soon to be released 'WEEDpak'.

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