entomoLOGIC 96

Further Improvement of a Successful Product

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Introduction

The computer based decision support system, entomoLOGIC was first developed five years ago as a basic prototype. The first release of the DOS version for commercial use was at the Cotton Conference in 1992. This program was developed and improved over the next 3 years and has been widely used by cotton growers and agronomists.

Following much feedback from users, entomoLOGIC was completely rewritten in a Windows environment and released as entomoLOGIC 95 for the 1995/96 season. EntomoLOGIC 95 was easier to use and also more capable than the DOS version. As well as insect management technology, it incorporates a field and crop history system which allows growers to record all production activities.

Advancements to support complex crop management

entomoLOGIC is a computer based system for assisting with management of cotton crops. entomoLOGIC is designed as a tool for use by anyone involved in pest management or farm management as an aid to decision making; it is not a substitute for skilled agronomists.

entomoLOGIC is primarily a platform for applying current technology in pest management, and it is continually being updated as new techniques emerge. It does not impose the use of any particular technology on the user, but it provides the option of adopting new techniques proven in commercial trials.

entomoLOGIC contains models that enable agronomists to make best use of different sampling systems, prediction of Heliothis development, LepTon® Kit, prediction of mite populations and potential yield loss.

Improvements for the entomoLOGIC 96 Release

Ingard® Cotton

The entomoLOGIC 96 release also supports management of Ingard® cotton, by incorporating the basic thresholds and management guidelined published by the TIMS committee.

Improved ease of use

The improved user friendly data entry system provides quick access to any part of the program through the one simple screen. The program has been designed to be flexible, allowing the user to tailor their own thresholds, sampling methods (no/m, no/plant or presence/absence) and farm set-up to his or her own specific requirements.

As a user friendly program, entomoLOGIC displays various hints and tips throughout the applications to advise the user of new improvements, alternative procedures and helpful tactics.

Visual training in Insect Identification

entomoLOGIC now has a vast array of pest pictures and information available for easy identification of most pests and predators found in Australian cotton crops. This new feature will be an essential tool for all crop scouts, consultants or growers wishing to know more about the appearance, lifecycle, damage or benefit of the insects found in their crops for more informed decision-making.

Plant Mapping and crop monitoring

Crop scouting now involves more than simply checking for insects, it entails other techniques of crop monitoring such as fruit counting and plant mapping. These methods can provide an assessment of specific physiological conditions of the cotton crop, thus assisting in decisions such as insect management, growth regulation and defoliation. This data can now be entered into entomoLOGIC and analysed to supply the valuable information for these management decisions. A new visual plant mapping system ensures that all data can be easily and securely stored.

Record keeping - and important technology for decision making

Keeping records and reports of seasonal events are important in determining the outcomes of management decisions made, such as the performance of pesticide applications. entomoLOGIC can store information about insect checks, operations, crop development, fruit counts and plant mapping. The program is now able to store any field related procedure and add various products and costs defined by the user. The data is stored separately from the program, so that it is retained when updating to new versions of the program.

Adoption

Adoption of entomoLOGIC increased significantly with the entomoLOGIC 95 release. There are now 300 registered users of entomoLOGIC in the Australian Cotton Industry. The entomoLOGIC 96 release is an update designed to improve the useability and professionalism of the program. It is now suitable for adoption by large organisations as a means of standardising practices and information storage between all company branches.

Advancements in the program obtained recognition this year, with entomoLOGIC placing third in the Decision Support section of the national Farm Software Competition at the Sydney Royal Easter Show.

Excellent trial results have been obtained using entomoLOGIC's standard pest thresholds. The work has shown that by using the thresholds, growers can effectively minimise sprays while maintaining yield and earliness (see separate paper covering field trials in this proceedings)[1].

In the Namoi Valley the increased use of entomoLOGIC for management was reflected in the 1995/96 Crop Competition. A crop managed using entomoLOGIC was placed third in Open section of the competition, while several prizes were also awarded to users in the Sustainable division of the competition.

entomoLOGIC is still distributed free of charge for use in the Australian Cotton Industry. Technical support is readily available through the Technology Resource Centre at Narrabri.

Summary

Through constant revision and large scale field testing, entomoLOGIC has developed into more than just an insect management program. It is now a valuable record keeping system for all agronomic data. The easily stored and readily accessible information can not only assist in more informed pest decisions, but can be used to guide improved crop production and sustainability. With advancements in technology, such as the introduction of transgenic cotton, entomoLOGIC will be constantly revised and improved to support the continued success of the Australian cotton industry.

References

1. McKewen, L, Deutscher, S., "Early season pest management - Can it make a difference?", This proceedings.