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COTTON *TALES*

Lower Namoi Valley

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Mirid survey has industry wide following

from Mary Whitehouse, CSIRO Entomology based at ACRI

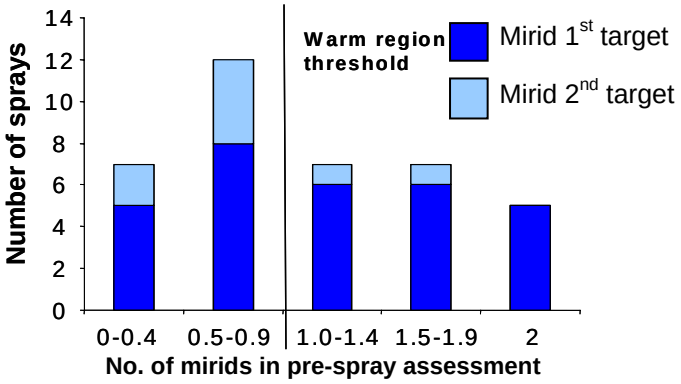
Mirids are one of the less well understood pests of cotton and their threshold is quite complex. Currently it is based on a combination of; mirid numbers, fruit retention and boll damage. In 'warm' regions, including the Lower Namoi this is 1 mirid /m (visual assessment) **+** fruit retention <50-60% **+** 20% boll damage. (The threshold of 1 mirid /m assessed visually is equivalent to 3 mirids /m using a beat sheet.) Until all three of these components are occurring in the crop, the use of an insecticide for mirid control is unlikely to increase yield. The crop indicators are very important components of the threshold as mirids could be feeding on the cotton plants or on insect prey. And being highly mobile, their numbers are difficult to sample accurately.

A pilot mirid management survey was conducted during the 05/06 season with the help of 14 growers, consultants, agronomists and managers in the Lower Namoi, Gwydir, and McIntyre valleys. These respondents generously provided information on 38 spray events that either targeted mirids specifically (30), or where mirids were cited as being a secondary target (8).

The survey asked respondents to rank the relative 'importance' of various factors in their spray making decisions. Overwhelmingly the most important factor triggering a mirid spray was the total number of mirids they had observed. 90% of respondents considered overall mirid number to be 'very important' or 'important'. The crop indicators were considered of less importance, with ~70% of responses indicating square damage and fruit retention were 'very important' or 'important'. Boll damage was seen to be 'very important' or 'important' in 50% of decisions to spray. Additionally the survey revealed that boll and square damage was not as accurately measured as retention; with only 54% of the spray reports indicating the percentage of fruit damage. It is likely that this finding reflects the difficulty in gauging mirid damage in a growing crop without cutting open large numbers of fruit, and indicates an area where mirid management tools could be improved.

Despite the clear importance of mirid numbers in the decision making process, many sprays were applied before mirid numbers reached the recommended threshold. Shown in the graph above, 13 of the 30 spray events where mirids were the primary target occurred when the mirid population was less than 1 mirid /m. There was no correlation between mirid numbers and fruit retention; indicating that respondents were not induced to spray on low mirid numbers because fruit retention was also low. This shows that there wasn't strong adherence to the recommended threshold and that following the threshold was only part of the decision making process for pest managers.

(a) Number of mirids triggering a spray



Recent field research in Queensland undertaken by Moazzem Khan and Dave Murray (QDPI&F and Cotton CRC) supports the use of the current threshold in Bollgard II® during the early boll fill period. Their work also suggests that higher mirid populations can be tolerated without yield loss early and late in the season.

This season, the survey has been expanded to cover the whole cotton industry in order to see if the preliminary findings reported here are applicable industry-wide. There are 93 pest managers participating, 18 are in the Lower Namoi. The 2006/07 survey is looking specifically at Bollgard II® crops and in more detail at when pest managers detect mirids but don't spray, and the influence of other pests on the decision to spray and spray choice. Because target fields are being followed through the season and yields will be requested at season-end, it will also be possible to look at which strategies worked best in each valley, whether different management styles resulted in yield penalties or bonuses and whether reapplications were avoided or needed under different strategies.

For the more comprehensive survey to provide good quality information, it will need season-long support and input from pest managers. To date Mary has received a substantial number of responses, particularly from the Queensland areas. She appreciates the commitment from so many in what is such a difficult season.

For those involved, the 6th instalment of the Survey is currently due to be returned to Mary. Please make the time to complete the brief spreadsheet and **return it even if you have not sprayed for mirids in your target field.**

If you would like more information about the 2006/07 survey, please contact Mary at:

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