Cotton Catchment Communities CRC
NSW DEPARTMENT OF PRIMARY INDUSTRIES

COTTON *TALES*

Gwydir Valley "What's happening in the north west"

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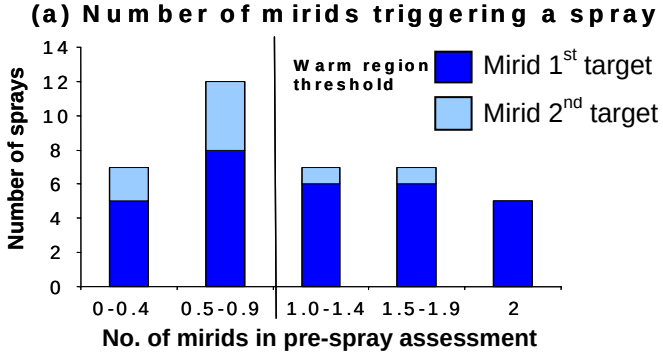
Mirid Management Benchmarking

from Mary Whitehouse, CSIRO Entomology based at ACRI

Thresholds help growers to manage pests profitably by ensuring that there is a yield benefit from using insecticide. 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 the 'warm' regions, including the Gwydir, this is 1 mirid /m (visual survey) + fruit retention <50-60% + 20% boll damage. The crop indicators are important components of the threshold as mirids could be feeding on plant or 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 suggests that pest managers were not being guided by the recommended threshold in their decision making.

Interestingly, the preservation of beneficials was a key consideration for pest managers in selecting the insecticide. While efficacy was the most important factor, respondents appeared to value the 'mopping up' services of beneficials and were keen to avoid 'flaring' other pest species.

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 92 pest managers participating across the industry. The 2006/07 survey is looking more closely at:

- when pest managers detect mirids but don't spray
- the influence of other pests on the decision to spray and spray choice
- differences between valleys.

For the more comprehensive survey to provide good quality information, it will need season-long support and input from pest managers. The survey will provide pest managers with information on:

- what sprays people are using and at what strengths.
- the effectiveness of different spray regimes
- whether different mirid management styles result in a yield cost or bonus
- which concerns, or combinations of concerns, are linked to more effective mirid management.
- what strategies performed best in their region.

For those involved, the sixth 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.**

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

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