

Watch out for whitefly

By Robin Gunning, NSW Agriculture

The silverleaf whitefly, B-biotype *Bemisia tabaci* is a serious pest of fibre, horticultural and ornamental crops world-wide. When present in sufficient numbers, it can cause extensive damage through direct feeding, the production of large quantities of honeydew and as a vector of many viruses. The silverleaf whitefly is extremely virulent, highly insecticide resistant, adapts to temperate climates and has a host range of over 500 plants.

The silverleaf whitefly was detected for the first time in Australia in 1994 and has since spread to most states. It is widely distributed over eastern Queensland and NSW and the Darwin area of the NT and has become a major pest of horticultural crops. Last summer we saw a major outbreak on cotton at Emerald in central Queensland, the silverleaf whitefly has become a primary pest of cotton in Australia

Silverleaf whitefly on cotton

We have been monitoring silverleaf whitefly on cotton in NSW and Queensland since 1995 and even then, found very low numbers of silverleaf whitefly on cotton. By the summer of 2000–01 numbers had increased approximately 30 fold with Emerald and the Macquarie Valley being identified as areas of particular concern. A year later, in early 2002, there was a serious silverleaf whitefly outbreak on cotton at Emerald. Cotton lint was at serious risk of downgrading due to stickiness caused by honeydew.

Whitefly survey

Following the outbreak of silverleaf whitefly at Emerald, there was an urgent need to look for silverleaf whiteflies in other cotton districts in NSW and Queensland. Cotton consultants were urged to collect cotton leaves from properties where whiteflies had been seen and to send them to me at Tamworth.

Thousands of whiteflies were counted and identified in our lab last summer. Three types of whiteflies were found on cotton:

- B-biotype *Bemisia tabaci* (silverleaf whitefly);



Adult whiteflies.

FIGURE 1: Number of whiteflies on cotton in NSW and Queensland. (February - April 2002)

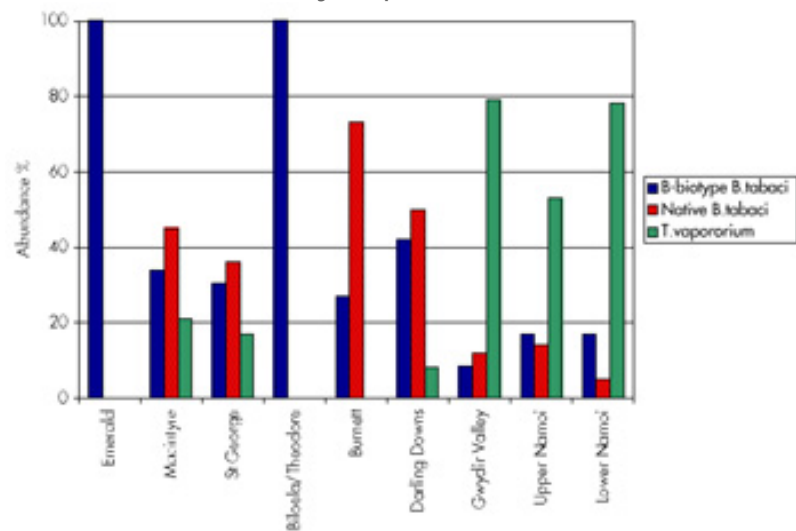
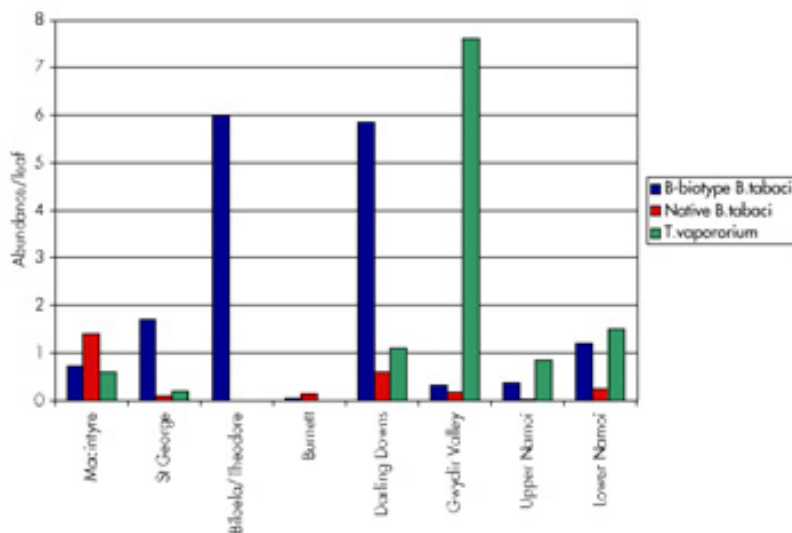


FIGURE 2: Abundance of Whitefly species on cotton in NSW and Queensland (February - April 2002)

- Native *Bemisia tabaci*; and,
- The greenhouse whitefly (*Trialeurodes vaporarum*).

Survey results

In terms of whitefly numbers (Figure 1), At Emerald, there were >> 200 silverleaf whiteflies per leaf on cotton. At Theodore/Biloela and in the Darling Downs, silverleaf whitefly numbers averaged five silverleaf whitefly/leaf. Silverleaf whitefly was also found to be present on cotton in most other districts (Macintyre, St George, Burnett Gwydir Valley, Lower Namoi, Upper Namoi), albeit at lower number (one per leaf or less). No leaves were received from the Macquarie Valley, Bourke or Hillston and we have no data for those areas.



In terms of abundance (Figure 2), 100 per cent of whiteflies found on cotton at Emerald and Theodore/Biloela were silverleaf whitefly. Significant proportions (20–40 per cent) of silverleaf whitefly were also picked up in the Macintyre, St George, Burnett and Darling Downs with the remainder largely comprising native *Bemisia tabaci*. In NSW, the majority of whiteflies on cotton were Greenhouse whitefly, however, 10–20 per cent of whiteflies on cotton were silverleaf whitefly.

Conclusions

Our survey last summer clearly showed that the silverleaf whitefly is lurking in all cotton areas. While conditions under which silverleaf whitefly populations numbers explode are not clearly understood, we are very concerned about the situation. This summer, if we allow silverleaf whitefly numbers to build up undetected, control may be impossible. To this end I will be surveying whiteflies on cotton again this summer.

We need to know where those silverleaf whiteflies are and whether numbers are increasing. Please do your bit, by sending us cotton leaves from the beginning and throughout the cotton season. Instructions about collecting and sending whiteflies to Tamworth may be down-loaded from the Cotton CRC web site.

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