CottonInfo: Connecting growers with research

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Keep an eye out for Silverleaf Whitefly

Silverleaf Whitefly (SLW) is a major pest in cotton.

It has the ability to contaminate cotton lint with honeydew (creating 'sticky cotton'), has a large host range, can rapidly reproduce and can develop resistance to many insecticides. It's important that growers keep an eye out for SLW and act to control it.

Have you spotted it? Correct species ID is key...

Silverleaf Whitefly (*Bemisia tabaci* B-Biotype or Middle East-Asia Minor 1 (MEAM1)). Adult SLW are small (0.8 to 1.2 mm long), have white wings and yellow bodies. Adults hold their white powdery wings at an angle more like the pitched roof of a house. However, the wings do not meet at the peak, so when viewed from above the body can be seen between the wings. Nymphs are pale yellow-green and flat scale-like insects that attach to the underside of the leaves of their host plant.

Greenhouse Whitefly (*Trialeurodes vaporiorum*) is about twice the size of SLW. Greenhouse whitefly hold their wings flat and slightly overlapping, so they have a slight heart shape when viewed from above. This is a key visual difference between greenhouse whitefly and the two *Bemisia tabaci* biotypes, SLW and Eastern Australian Native whitefly. SLW have a split down between the wings whereas the Greenhouse whitefly have overlapping wings. Nymphs are similar to SLW but are covered in fine hairs.

Eastern Australian Native Whitefly (*Bemisia tabaci* AUS1 or also known as

EAN) is rarely encountered in cotton and isn't considered a management issue. However SLW and EAN cannot be distinguished apart using morphological features.

Pictured top: SLW nymph (on left) and Greenhouse whitefly nymph (right). Note absense of hairs on SLW nymph, compared to Greenhouse whitefly (Photos: Zara Hall, QLD DAFF).

Pictured bottom: SLW (left), Greenhouse whitefly (right). Note the gap between the wings for SLW, compared with overlapping wings of the Greenhouse whitefly. (Photos: Richard Lloyd, QLD DAFF).

So, which species have I got?

There will normally be a mix of whitefly species present in a cotton field. It's straightforward to distinguish between greenhouse whitefly and the two *Bemisia tabaci* biotypes (SLW and Eastern Australian Native Whitefly) as outlined above, however, it is not possible to distinguish between the two *Bemisia tabaci* biotypes without a biochemical test.

In sprayed fields SLW will usually dominate as both greenhouse and Australian Native whiteflies are susceptible to many of the insecticides used against other pests. In addition, if whitefly numbers build quickly it is most likely SLW as the Eastern Australian Native Whitefly has a much slower growth rate.

How do I verify the species?

Collect a minimum of 50 4th instar whitefly from cotton leaves across the whole sampling area. Leaves can be placed in a paper bag and then inside a plastic bag. Pack this in an esky with an ice brick that has been wrapped in newspaper. Ensure samples are clearly labelled including: collector's name and contact details, farm & field, region, date of collection as well as any other relevant information such as insecticide usage as the sample will be used for resistance monitoring. Send by overnight courier to: Jamie Hopkinson, Qld DAFF, 203 Tor Street, Toowoomba QLD 4350, Phone (07) 4688 1315.

How do I manage SLW? First step: sampling.

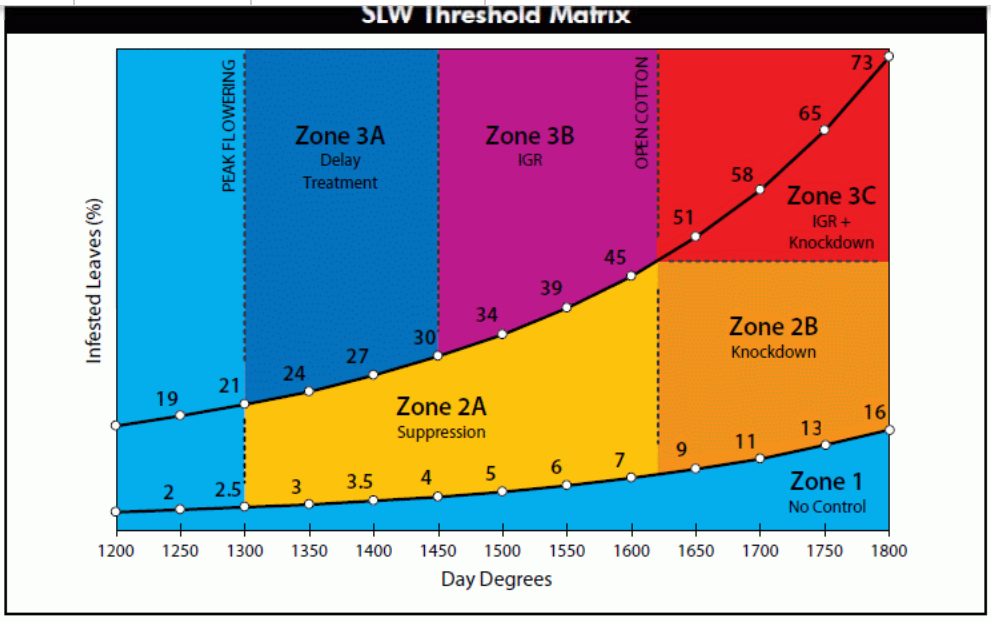
Sampling should commence at flowering and take place twice weekly from peak flowering (1300 Day Degrees). SLW populations will naturally fluctuate so it is essential to conduct frequent population monitoring to understand trends (eg. are they increasing or decreasing?).

Once bolls begin to open, monitoring for the presence of honeydew 'sheen' on lower leaves is also informative. Once leaves have a 'honeydew sheen' then generally corrective action needs to be implemented.

Taking control: the SLW threshold matrix.

Managing SLW requires the use of insecticide, and there are a few products registered for this use. The SLW threshold matrix identifies the optimum strategic times for use of these limited products - minimising the need for chemical control, delaying the development of resistance and preserving beneficials, the SLW's natural enemies.

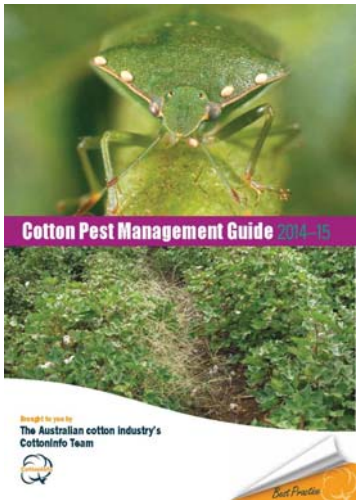
There are separate thresholds for early season suppression, control and for knockdown late in the season. A SLW threshold matrix has been designed to help manage a population that builds gradually in the crop and hence follows a predictable growth pattern. You can view the matrix in full in the Cotton Pest Management Guide, while the CottASSIST SLW threshold tool provides an easy way for growers to use this matrix.



Where can I go for more information?

The 2014-15 Cotton Pest Management Guide is the key source of information on SLW: from step by step instructions on how to sample, to information on thresholds, hosts, natural enemies, late season SLW management and selecting insecticides (see pages 28-31).

[Download your copy of the Cotton Pest Management Guide here](#).



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