Cotton Catchment Communities CRC
Queensland Government Department of Primary Industries and Fisheries

COTTON *TALES*

Central Queensland

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2008/09
No.11
18/12/08

Day Degree accumulation to the 17 Dec 08

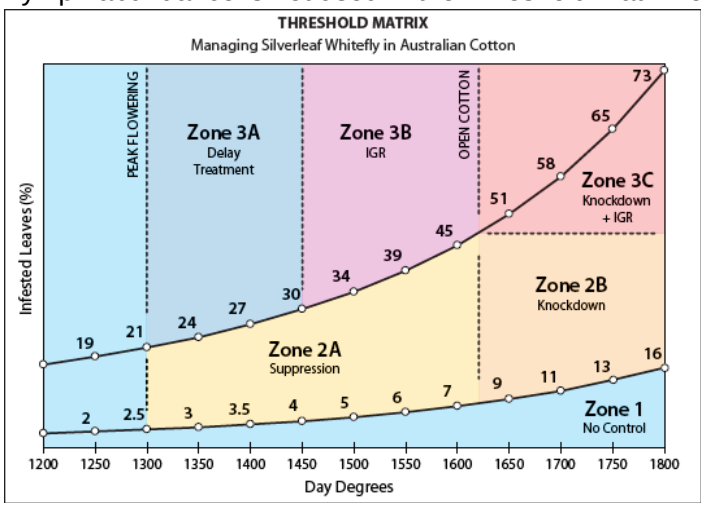
District	Season 08/09	Season 07/08	Season 06/07	Cold Days	Hot Days
Emerald (from 15/09/08)	1247	1231	1237	2	19
Theodore (from 25/09/08)	1056	1085	1050	5	18

Silverleaf Whitefly (SLW) Threshold

With SLW populations starting to increase in Central Highlands and a little bit in the Dawson it is probably timely to look at the SLW threshold matrix.

Sampling

- Calculate crop age in day degrees (DD).
- Sample weekly from first flower (777 day degrees) & twice-weekly from peak flowering (1300 day degrees). Choose a mainstem leaf from 3rd, 4th or preferably 5th node below the terminal. Keep shadow off, & turn each leaf over by the tip of the leaf blade or the petiole.
- Score a leaf with 2 or more whitefly adults as infested. Score a leaf with 0 or 1 adult as uninfested.
- Calculate the percentage of infested leaves.
- Nymph abundance is not used in the Threshold Matrix for making control decisions but is supporting information.



Use the Threshold Matrix to compare the % of leaves infested (derived from sampling) with thresholds relevant to the crop's age (day degrees). It is based on the patterns of gradual populations growth in SLW in cotton from 2002/03 to 2005/06 seasons. An increase in rate of population growth tended to occur when crops reached peak flowering. Sampling aims to detect this change & intervene only if required timed to maximise product effectiveness. The Matrix does not apply in situations of population explosion due to mass migration.

Zone 1–No need to control as risk of yield loss or lint contamination is negligible. Slow rates of population growth suggest contributions from beneficial insects. Carefully consider disruption of predators & parasitoids if making a spray decision for any other pest in the field.

Zone 2A – This Opportunity for most economic & low-risk control of SLW, through use of non IGR's. Diafenthiuron (Pegasus®), can control or provide useful suppression of low–medium density populations. Apply before SLW density exceeds 45% infested leaves. (The Pegasus® label indicates the product may not give satisfactory control at densities >25% infested leaves. This is based on overseas models & equates to ~45% infested leaves using sampling as described above.).

In early sown crops, endosulfan may be used to control aphids and some other pests through until flowering. When used for these purposes, endosulfan can suppress the development of low to medium SLW populations. The window for endosulfan application by ground rig closes on the 15 January. Refer to label directions and the IRMS.

Zone 2B–Lint contamination can result from uncontrolled medium density populations in Zone 2B (open bolls). Early detection of SLW & preventative action in earlier stages (Zone 2A) can prevent the need for higher-risk remedial action in Zone 2B. Pegasus® may be effective for remedial control (knockdown) of population densities up to 45% infested leaves in Zone 2B. Efficacy depends upon coverage & environmental conditions. For higher densities approaching the Zone's upper boundary, an application of IGR may be required.

Zone 3A – Control at this stage, may result in SLW population resurgence & additional interventions in later stages. There is no evidence of yield loss occurring as a result of delaying control until Zone 3B.

Zone 3B – Application of IGR is recommended for control of high density populations between 1450 and 1650 DD prior to the onset of boll opening. Pyriproxifen, (Admiral®), highly effective against SLW is also very selective, allowing survival of predators and parasitoids. The optimal application window for IGR is between 1450 and 1650 DD. Delaying application of IGR beyond 1650 DD and > 50% infested leaves (> 2 adults/leaf) could result in yield loss, lower efficacy of the IGR, substantial lint contamination or all of the above.

ENSURE ONLY A SINGLE APPLICATION OF ADMRIAL® OCCURS WITHIN A SEASON.

There is a very high risk of SLW developing resistance to pyriproxifen. Resistance levels causing spray failure have already occurred in horticultural situations as a consequence of multiple uses within a season.

Zone 3C – Delaying control of high density populations (>50% infested leaves) beyond 1650 DDs increases the probability of substantial lint contamination, yield loss or both. In Zone 3C the use of an IGR by itself is unlikely to prevent lint contamination due to the inherent time delay in population decline following application. Rapid knockdown of the population using a conventional insecticide is required before applying the IGR. No conventional product gives satisfactory knockdown control of SLW at high densities. A number of products give low to moderate levels of knockdown control. Due to the lack of registered control options, Zone 3C is considered 'high risk'.

REMEMBER STICKY COTTON HAS POTENTIAL TO DAMAGE MARKETABILITY OF ALL CQ COTTON.

Refer to 08/09 Cotton Pest Management Guide for more information. Please let me know if you have not received a copy yet.