



COTTON TALES

Central Queensland

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2010/11

No.4

26/10/11

Day Degree Accumulation to 27 October 2011. (adjusted by 5.2°C for each cold shock day)

District	From	Season 11/12	Season 10/11	Avera ge	Hot Shock	Cold Shock
Emerald	15/09/11	402	410	487	1	10
Theodore	28/09/11	250	262	313	0	8

EARLY SEASON APHID MANAGEMENT

There have already been a number of reports around Emerald of aphids breeding in terminals of seedling cotton. These aphids have been ID'd by Tanya Smith (CSIRO) as cowpea aphid, not cotton aphid, which are unlikely to require control and are not a CBT risk. Some of these aphids were parasitised which is an excellent sign. Cotton aphid were collected off a ratoon plants in the area.

Aphids have the potential to reduce yield, create sticky cotton and are vectors for Cotton Bunchy Top Disease (CBT). The high levels of resistance to a number of chemical groups in aphids mean that adherence to IRMS and an effective whole farm IPM strategy for the management of aphids is critical.

Decisions – do aphids require control?

When aphids feed they take in the sugars produced during photosynthesis and if they feed for long enough this translates into reduced yield. If winged aphids are seen on cotton, verify which aphid species is present. A simple strategy to establish if aphids are a cotton pest is to mark the area & return several days later to see if a colony establishes and is reproducing (non-winged forms present) before considering control. Many winged forms of non-pest aphid species will settle on cotton and test feed, then move on when they find it unsuitable. Cotton aphids vector CBT and are the most common aphid pest, but green peach aphid & cowpea aphid may also establish though usually only briefly, and are not CBT vectors.

From seedling to first open boll cotton aphid thresholds are based on the potential for aphids to reduce yield. Sample for aphids on the underside of mainstem leaves 3-4 nodes below the plant terminal. Use a 0 to 5 scoring system as described in the Cotton Pest Management Guide and input this information into the aphid yield loss estimator on the Cottassist web site, or use tables in the CPMG.

This threshold does not take into account losses from CBT. If CBT risk is high, don't start spraying aphids on sight, as you increase the risk of resistance & control problems later in the season. If CBT hosts are located close to cotton, continue to monitor marked aphid populations twice weekly to determine if it is healthy & expanding (ie. warrants control), or if beneficial populations are likely to prevent further spread. CBT is highly dependent on the size and movement of the aphid population. Many colonisation events fail to result in successful

transmission. If just one CBT-infected aphid colonises a plant, the transmission rate is 5% (1 in 20 plants become infected). If >3 infected aphids colonise a plant, the transmission rate increases, but only up to ~40%. Because of the long latent period, CBT symptoms may not be visible until up to 8 weeks after infection. Earlier infection can result in more severe symptoms.

Selecting an Insecticide

A range of beneficials and parasites will help control aphids. If these are disrupted aphid populations may increase quickly and require chemical control.

- Early season spray decisions should aim to preserve beneficials, particularly where SLW or mealybugs could be present. Softer options such as paraffinic spray oils, pirimicarb or pymetrozine should be considered first.
- While all three early season aphid control options are generally soft, pirimicarb will have more impact on wasps that parasitise whitefly and Helicoverpa, while paraffinic spray oils will have more impact on ants, and pymetrozine will have more impact on predatory beetles such as red and blue beetles and lady beetles.
- In 2010/11 96% of strains tested showed some neonicotinoid resistance (i.e. Actara®-Cruiser® or Shield®). This resistance makes the neonicotinoids unreliable for control, especially if a neonicotinoid seed dressing has been used. Do not use first foliar spray from same group as seed or planting insecticide.
- Diafenthiuron (Pegasus®) is not available until later in the IRMS & is therefore not an early season option. Adherence to the IRMS is critical as some cotton aphid strains have been found to have low resistance to diafenthiuron.
- OP's are not available until later in the IRMS & usage to control aphids early season will likely disrupt beneficials, and flare other pests such as SLW and mealybugs. Although from different insecticide groups, there is a significant cross resistance between primicarb and dimethoate so use of one selects resistance in the other. All early season uses of dimethoate need to be avoided to minimise pirimicarb selection.
- The newest mode of action for aphid con in cotton is spirotetramat (Movento). Currently the IRMS allows use at any time of the season, but with a maximum of two applications, including for silverleaf whitefly, and to avoid consecutive applications. Movento is soft on most beneficials, but those with mealybugs should note that it will reduce populations of lady beetles by 40-60% & lacewings by 60%.
- Endosulfan is still available this season, however use is only permitted until 12 Oct 2012.

Refer to 2011/12 Cotton Pest Management Guide for more information.