Cotton Catchment Communities CRC
Queensland Government

COTTON *TALES*

Central Queensland

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COTTON BUNCHY TOP (CBT) - IS 2010 A HIGHER RISK?

Greg Kauter (Cotton Australia) & Lewis Wilson (CSIRO) have suggested that 2010 could be the year for the re-emergence of Cotton Bunchy Top (CBT). So are they on to something?

What Is CBT?

First observed in 98/99 season, CBT is a viral disease that is spread by cotton aphids (*Aphis gossypii*). Symptoms include reduced plant height, leaf size, petiole length, internode length, boll size and potential yield. There is a 3-8 week lag between infection of plants with the disease by aphids carrying it and the development of symptoms. The impact on yield is related to the timing of infection and the proportion of plants infected. Earlier infection of plants has a greater potential to affect plant growth and yield than later infection. A higher proportion of plants infected in a given area is also more likely to result in yield loss. When only a few plants are affected (1-2/m), neighbouring plants will compensate by growing bigger & yielding more.

What are the factors that suggest a problem is possible in 2010/11?

HOST ✓

In the 2009/10 cotton pathology survey, Stephen Allen and team noted that in both NSW and QLD CBT was commonly observed in volunteer cotton plants surviving over from the previous season. Further, the abundance of volunteers was quite high because rainfall through summer led to poor volunteer management.

VECTOR✓

There will be a lot of aphids in the air this summer coming off cereal and brassica crops – these species are not pests of cotton or vectors of CBT. However, there is an abundance of marshmallow and other host weeds for cotton aphid so there is potential for aphids to establish colonies on seedling cotton.

ENVIRONMENT✓

Disease spread is favoured by climatic conditions which are suitable for aphid reproduction, feeding and spread. This milder and wetter than average winter has allowed for an increase in weed hosts that allow aphid populations to over winter.

All the factors are present this season for CBT to be a potential problem. *So what can we do to reduce the risk?*

- Control farm weeds that are aphid hosts
- Control volunteer & ratoon cotton
- Monitor cotton fields regularly from crop emergence for the presence of aphids
- Check aphid hot spots for CBT symptoms
- If CBT symptoms are present early in the season, consider removing isolated infected plants or selectively controlling aphids.

Decisions – do aphids require control?

If winged aphids are seen on cotton, verify which aphid species is present. A simple strategy to establish if the aphids are a cotton pest is to mark the area & return to several days later it 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 and 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 on page 14-15 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.

Selecting an Insecticide

- Early season spray decisions should aim to preserve beneficials, particularly where SLW or mealybugs could be present. Softer options such as spray oils or pirimicarb should be considered first. OP usage to control aphids early season will likely disrupt beneficials, and flare other pests such as SLW
- In conventional cotton, application of endosulfan to control *Helicoverpa* spp. will suppress aphids
- In 09/10, 78% of the strains tested showing some neonicotinoid resistance (i.e. Actara®-Cruiser® or Shield®). This resistance may make the neonicotinoids unreliable for cotton aphid 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 (Pegusus®) is not available until later in the IRMS & is therefore not an early season option. Adherence to the IRMS is very important. Some cotton aphid strains have been found to have low resistance to diafenthurion
- Alternatives products available include endosulfan (limited availability), spirotetramat (Movento®), pymetrozine (Fulfill®).

After open bolls

Once bolls have opened the main risk from aphids is honeydew contamination of lint, the risk of yield loss from aphid feeding or infection with CBT is very low.

For more information refer to 2010/11 Cotton Pest Management Guide.