

2016 - 2017 – Issue 4Thursday 1st December 2016

This issue of CQ Cotton Update continues with a focus on pests and diseases.

Insecticide Spray Thresholds

The Cotton Pest Management Guide is a practical resource that can assist growers and consultants in planning their integrated pest management programs.

Cotton bollworm and native budworm**Bt cotton**

Seedling to 40% open bolls
2 larvae > 3mm/m in 2 consecutive checks
 or
1 larvae > 8 mm/m

Mirids

	Planting to 1 flower/m	Flowering to 1 open boll/m	1 open boll/m to harvest
Adults or nymphs/m			
Visual sampling	1.3	1.0	-
Beatsheet sampling	4	3	
Adults or nymphs/sample			
Sweep net sampling*	4 adults + 1.1 nymphs	3 adults + 1.6 nymphs	-
Crop damage			
Fruit retention	60%	60 – 70%	-
Boll damage	-	20%	20%
Tip damage (% of plants affected)	(light**) 50% (heavy***) 20%		

***After 9 – 10 nodes **Light tip damage – embryo leaves within the terminal are black ***Heavy tip damage – terminal and 2 – 3 uppermost nodes are dead**

When applying thresholds it is important to consider both the crop damage and mirid numbers.

Mites

A general threshold of 30% of plants infested is advocated through the bulk of the season, from squaring to first open boll. Yield loss depends on when populations increase and how quickly they increase.

Refer to the **Cotton Pest Management Guide** for more information and for other pest thresholds.

Cotton virus surveying in CQ

Dr. Murray Sharman (DAF) recently reported his cotton virus survey results for the Central Highlands.

“Pleasingly, there were no symptoms of cotton bunchy top (CBT) virus recorded, with most growers and farm managers doing an excellent job of keeping farms clean of volunteer and ratoon cotton.

However, some CBT was found on volunteer cotton growing on road sides and irrigation channels which highlights the risks posed by volunteer and ratoon to the regions crops particularly if aphids become active. Minor symptoms of Tobacco Streak Virus (TSV) were observed in nearly all surveyed crops. These symptoms were seen on approximately 1 – 5% of the plants along the edges of fields particularly if they were in close proximity to weedy areas. These symptoms are generally confined to particular nodes on the plant and do persist to affect subsequent growth or yield.”

Planting Date Trials

Repost of Paul Grundy's CQ Cotton Thread post (22nd November)

“Early sown cotton has compensated beautifully after the earlier loss of retention due to Heliothis and Mirids”



“First flower biomass for the 15 September sown cotton. Retention is a bit better on the 746 at this stage compared with the 748 but things will change a lot during the next month”



746B3F sown on the 15 September



748B3F sown on the 15 September

Biomass and crop photos are posted more frequently on the Facebook group *CQ Cotton Thread* towards the end of the season. Please feel free to join in the conversations and view photos of the trial as they are posted.

We have entered the “Money Period” for early sown crops

Most August sown crops will be rapidly approaching cut-out in the coming 10-14 days. Therefore yield potential is largely set and now the plant has a lot of work in front of it between now and January to fill as many of those bolls as possible. The period just before and after crop cut-out in Emerald could be summed up by simply saying that the plants should be managed to ensure that they want for nothing agronomically speaking during this phase. Crops are particularly susceptible to shedding losses at this time so it is important to ensure that irrigation is well timed and keep in mind the temperature outlooks going forward.

Early December is shaping up to be very hot so consider bringing forward your irrigation schedule by a day or two to suit conditions as they evolve. The hot temperatures forecast look to be complimented by cool nights and sunny conditions so despite the heat crops should handle conditions well provided soil moisture is adequate. This is a different scenario compared with the Christmas New year heat wave of 2014/15 that damaged many crops at cut out due to the combination of hot days with high humidity and nights above 26°C.

With yield potential largely set poor management of irrigation could see rapid losses in potential yield over the coming 3 weeks for early sown crops. Losses of a 1/3 of a bale per day due to stress can occur during this growth phase. Stress is defined as anything that negatively affects effective photosynthesis such as extended cloudy weather, nights above 24°C or poorly managed soil moisture that limits the plants ability to transpire and keep the leaves at an optimal day time temperature.

For more information on why a hot night affects cotton see the video by [Warren Conaty on the CottonInfo YouTube channel](#)

Surveillance and studies for endemic and exotic viruses

- Cotton viruses can cause sporadic damage.
- Volunteer and ratoon cotton is a key source of viruses and vectors.
- Viruses found in Australia include CBT and Tobacco streak virus (TSV) which is common in Central Queensland however has no effect on yield or quality of the crop.
- Virus diseases often first infect the edge of a field and can potentially spread.



Leaves affected with Cotton bunchy top virus (left) and Tobacco streak virus (right).

Cotton bunchy top virus (CBTV)

- CBT is transmitted by the cotton aphid.
- Symptoms include pale green angular patterns on leaves with dark green centres, small leathery and brittle leaves.
- ‘Bunchy’ appearance.
- Symptoms affect the overall yield with reduced boll numbers and size, and shorter fibres.
- CBT has many alternative hosts, however perhaps the most important host is volunteer and ratoon cotton



Over 60% of these ratoons, circled in red, on the edges of the crop had CBT. While around 40% of off-farm cotton may have CBT.

Exotics to be aware of in the field

Blue cotton disease – cotton leafroll dwarf virus

- Similar lifecycle to CBT.
- Expected to be easily transmitted by aphids and a more severe disease.
- Symptoms include severe stunting, down curling of leaves and intense green colour.



Left: The small plants alongside the larger cotton plants are showing the severe stunting and down curling of leaves, symptoms of the cotton leafroll dwarf virus.



A characteristic feature of the adult female is the pair of band (dark spots) on the abdomen running either side of the midline.

Cotton leaf curl disease

- The most serious virus threat to cotton
- Transmitted by silver leaf whitefly
- Symptoms include the upcurling of leaves, thickening of veins and leaf-like structures growing on the underside of leaves.

- The nearest confirmed detection threat is in south China, with CRDC-funded surveillance not detecting the virus in Papua New Guinea, Timor-Leste or Northern Australia.



The upcurling of leaves are symptoms of the cotton leaf curl disease.

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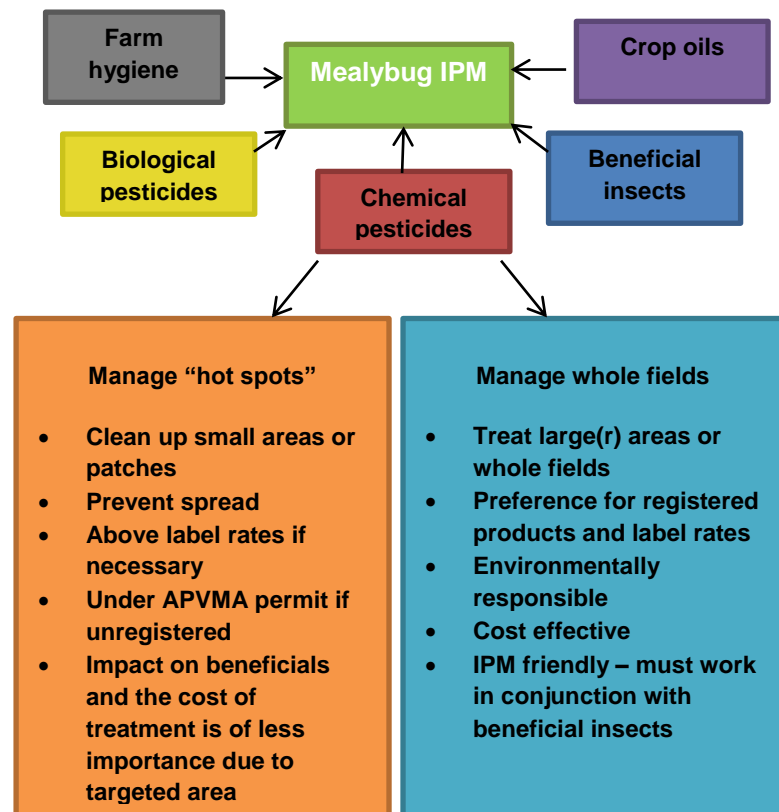
Management of mealybugs

Solenopsis mealybugs (MB) have been a persistent but variable problem for Central Queensland since 2009. This pest has been largely confined to Queensland and Central Victoria with no reports of being present in NSW.

Why are mealybugs a problem?

- The lifecycle of MB is around 30 days and therefore they can complete several generations each season.
- Wind, water and the assisted movement on people and machinery can disperse MB crawlers (first instar nymphs).
- Direct feeding on plants can cause yellowing, stunted, twisted growth, defoliation and plant death.
- MB have a very wide host range including weeds.
- Weeds and volunteer cotton are associated with high incidence and infestation levels of MB.
- Preserve your beneficials and consider the release of *Cryptolaemus* and/or lacewings in hotspots.

Mealybug IPM strategy



Richard has trialled different products and rates for, “hot spots” and whole field management. The chemical and biological products assessed to date within the CRDC-funded mealybug project:

- 7 greenhouse assessments
- 4 field trials – 2 in Emerald and 2 in Kingaroy
- 2 polyhouse trials – Emerald

Due to the nature of the chemical trials and products being tested experimentally and off-rates, the results cannot be published. Please contact Richard if you wish to discuss products which have been tested.

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