

Whitefly – the other sticky pest!

Whitefly can be an issue late season and there have been increasing populations in the Gwydir over the last few seasons. Silverleaf whitefly infestations have caused sticky cotton discounts in CQ crops in recent years. Check out your P&D sheet to familiarise yourself with your risk level if you are seeing high whitefly populations in your crops. Aside from the discounts associated with sticky cotton is the risk to the local industry's reputation for future seasons if sticky cotton is detected.

Honeydew & Stickiness

Honeydew and its associated stickiness is a fibre quality concern for two major reasons:

- Mould growing on honeydew causes discolouration
- The fibre stickiness from honeydew causes significant problems in the spinning process

Stickiness may become a problem if aphid or whitefly are not successfully controlled late season (after boll opening). There is no conclusive answer to the question of 'how much honeydew is too much'.

Whitefly honeydew is considered to be worse than aphid honeydew as it has a higher boiling point, which makes it more difficult to remove during processing. Honeydew, a waste product excreted from the insect, contains high concentrations of several sugars. Nymphs will produce more honeydew on poorer quality hosts (ie stressed plants) as they feed more to obtain sufficient nutrients. The most honeydew produced by any of the life stages is the adult female.

Whitefly species

Management of whitefly populations is dependent on the species of whitefly present. There are 3 species of whitefly, greenhouse whitefly, native *Bemisia tabaci* and silverleaf whitefly (*Bemisia tabaci* biotype B). The first two are not considered to be pests. Silverleaf whitefly is the greatest threat as it is resistant to most commonly used insecticide products in cotton. It cannot be visually distinguished from native *Bemisia tabaci* (this requires leaf collections and identification by biochemical test) but can be distinguished from greenhouse whitefly.

Given the stage of the season and previous insecticides likely to have been applied to crops it is probable that silverleaf whitefly will make up a large proportion of any whitefly populations. Time constraints will limit the value of leaf collections to identify species for management decisions. While

it's too late to use the results from a collection for this year's spray decision, collectively the results from sampling help to build a picture about the B-biotypes distribution in the valley which would make a useful starting point for next season.

What are late season control options?

Diafenthiuron (Pegasus®) is the best option for this stage of the season. It will provide some activity against silverleaf whitefly and has some knockdown effect which should be sufficient until crops are defoliated depending on the whitefly population. Pegasus does have a 14 day harvest withholding period.

While insect growth regulators (IGR's) such as Admiral® are the most effective way to manage whitefly populations, the lateness of the season rules these products out as a control option unless on very late crops.

Admiral® does not have any knockdown effect and takes about 2 weeks before a population decrease is observed. For crops within 2-3 weeks of defoliation this is not an option.

Broad-spectrum insecticides are not an option if the populations are predominantly silverleaf whitefly due to resistance.

When considering the decision of whether control is necessary maybe consider that if the situation was aphids instead of whitefly, would you control them? At this stage of the season it is about honeydew management. If lower canopy leaves are starting to glisten with honeydew be assured that the situation can readily deteriorate further in a short space of time leading to lint contamination. As the crop senesces whitefly will also feed and excrete more to get the nutrients they need for growth so towards the end of the season not only are numbers of whitefly likely to be increasing, but the honeydew produced per individual can also increase which compounds the impact.

What is the risk to late maturing crops and defoliated crops?

Whitefly present in crops that are senescing or being defoliated will leave these crops and target more attractive hosts. Late maturing cotton crops should be sampled and monitored very closely especially after the commencement of defoliation. Defoliated crops may also be at risk as whitefly will rapidly repopulate any regrowth.

More information on aphids or whitefly is available on the Cotton CRC website www.cotton.crc.org.au or by contacting me on 02 6752 5111. Thanks to Paul Grundy, QLD DPI&F for assistance in putting together the information in this Cotton Tales.