



Gwydir crop check

1st February 2023

STOP PRESS: Aphid Group 1 insecticide resistance detected

Cotton aphids (*Aphis gossypii*) have been a relatively infrequent pest during the last decade for most cotton regions. However, with a cooler season, aphids are now being encountered by many agronomists.

Recent aphid resistance testing has identified several populations from the Darling Downs with very high Group 1 (organophosphates/carbamates) resistance. This level of resistance to Group 1 insecticides was widespread in the 2000s but has not been seen (except in northern Australia) since about 2014.

In the fields where the aphids were collected, dimethoate had been used for mirid control earlier in the season, and a later application of pirimicarb (an excellent IPM selective tool for aphid management) did not provide adequate control. This is not to say that the two consecutive applications of Group 1 products caused this resistance. It is likely that a strain of aphids with pre-existing resistance had by chance established in this field and that the two applications removed most of the susceptible individuals present.

While it is too early to know how widespread resistance might be in cotton aphids this season, this finding is a timely reminder to be mindful about product selection and potential impacts on different pest species. Think about the mode of action group of the products you choose and be aware that the application of an insecticide for one target pest can sometimes create problems with others.

The take home message is to avoid repeat application of Group 1 insecticides, particularly this season when aphids are common. Effective aphid management is important not just for preserving yield and lint quality, but aphids are also a vector for cotton bunchy top, a viral disease that has also been identified from an increased number of fields this season.

Refer to the Cotton Pest Management Guide for the most up to date guidance for when and how products can be best used to avoid the development of insecticide resistance.

In light of this, we are keen to have more aphid samples collected from other regions to see if this resistance is in aphid populations in other regions and how far spread it is.

To collect aphids, they need 50+ aphids for testing. Collect aphids on leaves or stems and put the plant material and some extra leaves into a PAPER bag with the aphids. Keep cool while in field and put into the fridge until they are couriered to NSW DPI (details below) DPI – OR call Janelle Montgomery, CottonInfo Gwydir and I can arrange delivery (I can also sample if there is a hot spot which you GPS and I can easily find!).

They are pretty hardy so can be left in the fridge for 3 or 4 days before sending to NSW DPI.



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Please send the following information in with your sample – just write it on the paper bag if you want. Include the GPS on the location.

Sample:		Insect:	
Date of collection		Crop	
Location			
Grower			
Farm			
Field			
Collectors name			
Collectors company			
Spray history			
Additional information			

Samples to be couriered to:

Lisa Bird NSW DPI
 Tamworth Agricultural Institute
 4 Marsden Park Rd Calala NSW 2340
 M. 0438 623 906
 E. lisa.bird@dpi.nsw.gov.au



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The following extract is taken from: <https://www.cottoninfo.com.au/blog/ipm-top-tips-spring-and-summer>

Both cotton and green peach aphids have been infrequent for many years but, with rapid lifecycles and increased host abundance in the broader landscape, opportunity exists for rapid population build-up that could spill over into cotton crops. Fortunately, aphids have many natural enemies that commonly occur in cotton crops. Ladybirds, hover flies, lacewings and parasitic wasps can all exert effective and timely biological control.

If aphids are encountered during crop scouting, take the time to examine the status of the colony as this can provide useful clues about the future trajectory of a population. For example, the presence of isolated winged aphids accompanied by a small number of juveniles indicates that the population is newly established. In comparison a leaf with a mixed population of all sizes has been established for much longer. Keep an eye out for patches of honeydew on lower canopy leaves as this can indicate the presence of aphids (or mealybugs) in the overlying canopy.

Take the time to look for predators that may be amongst an aphid colony. Hoverfly or ladybird larvae are not always immediately obvious. Similarly, ladybird or lacewing eggs maybe nearby. The presence of predator eggs and larvae is a positive sign that biological control is taking place and that, provided aphids are below threshold (see the [CPMG](#)) or that honeydew is not presenting a risk for lint contamination, it is likely that biological control will subsequently suppress aphid populations.

If other pests such as mirids require control, be mindful of the impacts that different insecticides can have on natural enemies and the aphid population. Some insecticides are more disruptive to natural enemies than others whilst some products are registered for control of aphids as well as mirids. Refer to the [CPMG](#) (Table 4, pp 14-15) for impacts on beneficial species.



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Pictured: Things to look for when encountering an aphid colony. Circled in blue is a hover fly larvae (*Syrphidae*) and in red silver fly larvae (*Leucopis* spp.). Both are predators of aphids.

Further information:

CottonInfo Videos:

[**Aphids in Cotton**](#)

[**Aphid sampling and management in cotton**](#)

[**Mavis and Edna Aphids winter vacation**](#)

[**Identifying cotton bunchy top disease**](#)

[**Cotton bunchy top management**](#)

The Beat Sheet: [Ladybirds enjoy a cotton aphid buffet**](#)**

Regards

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