

Be alert for aphids

This spring aphids have built up to high numbers on many cereal crops. This has prompted concerns that young cotton crops may be exposed to high aphid pressure in the vicinity of cereals. However many of the aphids on cereals & other hosts will not establish on cotton.

Species

Aphid populations observed on rotation crops & weeds are rarely species that can use cotton as an effective host crop. In summary, the species found on cereals are commonly corn aphid, oat or wheat aphid & rose-grain aphid. Species on winter legumes are the pea aphid, cowpea aphid & blue-green aphid. Common weeds will host aphid species such as cabbage aphid (turnip weed), green peach aphid (marshmallow), sowthistle aphid & brown sowthistle aphid (sowthistle / milk thistle). Numbers can be very high on some crops & plants. As the crops senesce winged aphids are formed & they are forced to seek new hosts – these ‘aerial plankton’ have been very noticeable this spring.

Even though winged adult aphids may settle on cotton seedlings & ‘test’ feed, most of these species will not establish & reproduce on cotton. A good way to tell whether the aphids are likely to be a cotton-attacking species is to monitor for the presence of immature aphids. This indicates that cotton is a host. If there are young produced the aphids are likely to be cowpea aphid (*Aphis craccivora*), which have shiny black adults, green peach aphid (*Myzus persicae*), which are uniformly pale green & have tubercles near the antennae (see Cotton Pest & Beneficial Guide or Aphid Ecology on the Cotton CRC website) or cotton aphid (*Aphis gossypii*), which tend to be multicoloured ranging from yellow, green, dark green, brown to almost dull black. Green peach aphid & cowpea aphid generally do not do well on cotton & are not favoured by high temperatures.

Resistance

In 2007-08 field populations of cotton aphid with resistance to neonicotinoids were collected for the first time. This group includes the seed treatments Gaucho®, Genero®, Cruiser® & Amparo®, as well as the foliar sprays Intruder®, Actara® & Confidor®. This group is important to the Australian industry because it will control OP/carbamate resistant cotton aphids. The detection of resistance to neonicotinoids means the industry must take more care in managing the use of this insecticide group. It is critical that if a neonicotinoid seed treatment is used then the first foliar spray against aphids (or mirids) is not a neonicotinoid as well. In the future, as more information becomes available TIMS may impose further restrictions on this group of products to delay the spread of resistance.

Cotton Bunchy Top (CBT)

Volunteer or ratoon cotton plants will have hosted both CBT & aphids over winter. If volunteers haven't been controlled during the fallow, there is much higher risk of CBT infection this season.

Cotton aphid is a vector of the disease cotton bunchy top (CBT). However the disease generally spreads slowly because the transmission rate is low, particularly if only one aphid settles on a plant. There is also a latent period between the plant being fed on by an infected aphid & the plant being capable of infecting new aphids, further slowing transmission. The young produced by a colonising female aphid are not born carrying the disease. They will often spread to nearby plants before they are capable of transmitting CBT. Therefore CBT is generally a low risk.

The exception would be if the infestations levels with cotton aphid were very high (e.g. >20%) & if the aphid population increases very quickly so that winged forms are produced which could spread disease more widely. Monitor aphid hotspots for the presence of CBT. Remember that if beneficials reduce aphid populations they will also be preventing CBT transmission. The worst case scenario is to spray the crop with products that do not control aphids & disrupt beneficial insects.

Thresholds

A new sampling technique & threshold system have been developed for cotton aphids for use until crops reach 60% open bolls. The sampling technique & threshold system are the result of five years of field experimentation by CSIRO researcher Lewis Wilson & his team at the ACRI, Narrabri.

The main advantage of adopting the new system is that the manager is able to make decisions based on a well calibrated estimate of yield loss. Unnecessary spraying can be avoided, minimising selection pressure for resistance without compromising the crop's yield potential.

A web tool has been developed to assist growers & consultants with the calculations required in the new threshold system. A link to this web tool and information on the new sampling technique & threshold system will be available on the Cotton CRC website (www.cottoncrc.org.au) soon so keep an eye out. The sampling procedure & instructions for manually calculating the threshold are described in detail in the Cotton Pest Management Guide, which will be available from the end of October.

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