

Predator puts bite on green mirid eggs

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A 'new' predator has been identified feeding on green mirid eggs in cotton. It is a small, black-headed mirid, *Tytthus chinensis*. *Tytthus* is well known as a predator of leaf and planthoppers throughout the world.

In Australia, the related species *Tytthus mundulus* is an important predator on the eggs of the sugar cane leafhopper and the introduction of this predator into Hawaii is one of the outstanding successes in biological control.

The predator's physical appearance

The adult *Tytthus chinensis* has an elongate body shape and is about three mm long with a dark black head and pronotum (the area behind the head). The first two segments of the antennae are light black with a pale band at the first joint and the rest of the segments are brown. There is a dark band between the femur and tibia on all legs.

Nymphs are pear-shaped and green in colour, as with the green mirid, but have dark eyes and are paler and smaller. For example the fourth instar nymph of

Tytthus chinensis is 1.5 mm long whereas a green mirid nymph is 5–6 mm.

Antennae of the predatory mirid nymph are different from the adult — nymphs have alternate dark brown and white stripes throughout the antennae.

Observations

Insectary trials showed both adults and nymphs of *Tytthus chinensis* prey on green mirid eggs by inserting their needle-like mouthparts into the egg and sucking out the contents. The predator also preys on helicoverpa eggs in corn.

The predator was first detected in Bollgard II cotton at 'Morella', Boggabilla in January 2005. Since then, they were detected in Bollgard II cotton at Bye (near Kingaroy), 'Carrington' (Goondiwindi), Macalister (near Dalby), in sorghum and in soybean at ACRI, Narrabri and in mungbean at Gatton.

Conclusions

Tytthus chinensis is not new in Australia. In the past, conventional cotton systems frequently applied broad-spectrum chemical sprays that may have reduced predator numbers in cotton, as with green mirid.

In recent years, the introduction of

Bollgard II cotton and increasing adoption of IPM has created a system that allows this predator to flourish. It is hoped the predator population will increase to levels that will contribute significantly to green mirid management.

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Adult *Tytthus chinensis* (actual size three mm).



Fourth instar *Tytthus chinensis* nymph (left, actual size 1.5 mm) and green mirid nymph (right, actual size six mm).