

Cicadas

Brown sugarcane cicada

Cicadetta crucifera

Yellow sugarcane cicada

Parnkalla muelleri

Green cicada

Cicadetta multifascia

Distribution

Both brown and yellow cicadas are common in all regions of coastal Queensland. Brown cicada has damaged crops at Mossman, Mulgrave, Tully, Abergowrie, Proserpine and Fairymead. Yellow cicada has damaged crops at Mulgrave and in the Burdekin region. Green cicada has damaged crops at Gin Gin.

Damage

Crops heavily infested with cicada nymphs fail to ratoon. Lightly infested stools ratoon poorly and fields look gappy. Sometimes, small ratoon shoots become yellow and withered at the leaf tips and edges and then die. Areas of complete failure are surrounded by zones of poor growth.

Damage is most common in old ratoons. Ploughout/replant of infested areas leads to increased cicada damage, as early as first ratoon.

Cicada nymphs are found by digging. If nymphs have already emerged, their skins may be seen on the soil surface. Light damage occurs with as few as 20 nymphs per stool. Moderately damaged stools commonly have 40-60 nymphs/stool. Heavily damaged (dead) stools have 80-300 nymphs per stool.

Description

Cicada nymphs have sucking mouthparts. They make tunnels in the soil using their flattened and hardened forelegs.

The first four growth stages (instars) of brown and yellow cicadas are white coloured insects. The final fifth stage has coloured bands around the abdomen and markings on the thorax. Brown cicada nymphs have dark brown or black bands while yellow cicada nymphs have clear bands. Fully grown female nymphs of both species are 15 mm long, and males are up to 12 mm long. Nymphs have red eyes at first which



Above: Cicada nymphs.

then change to black just before they become adults. Mature nymphs of green cicadas have a green abdomen.

Adults of the brown and green species are 14-18 mm long with two pairs of clear wings, large eyes, and sucking mouthparts between the front legs. Brown cicada males are dark-coloured and the female is pale bodied with a prominent ovipositor 6-8 mm long. The yellow cicada has a black Z-shaped mark in the outer part of each forewing. Both sexes of the yellow cicada are cream-yellow and the female has a small ovipositor.

Biology

Most research has been done on the brown cicada. Not much is known about the yellow or green cicadas, but all species have fairly similar lifecycles.

Eggs are laid into midribs of sugarcane leaves. Brown cicada makes a series of long ragged punctures with raised tufts of broken leaf fibre along the lower side of mature green leaves towards the base of the plant. Females also lay in flower stems of crowsfoot grass and nutgrass, and in the midribs of blady grass. Yellow cicada lays into midribs of dead leaves, making small, cone-shaped, slightly raised punctures. Females will also lay in dry leaf trash and billets, and stems of dead weeds such as blackberry nightshade.

Eggs of the brown cicada hatch 8 to 11 weeks after laying. They may be heavily parasitised. Between early March and April, small (2 mm) nymphs wriggle out of their chamber, then drop to the ground and enter cracks.

Attack on these dispersing nymphs by the coastal brown ant is the major biological control of brown cicada in sugarcane.

Nymphs make tunnels beside roots and suck the sap. Growth is completed in the tunnel. After about 8 months, fully grown nymphs emerge above ground between November and February to change into adults. Emergence starts on sunny days shortly after rain, and stops if overcast weather persists. Nymphs climb onto plants and hang backwards. The adult forces its way from the nymphal skin and then hangs for a short time to expand its wings and harden its body.

Adults can fly within 30 minutes. Females mate with calling males and lay eggs within 24 hours. They live for up to 7 days and lay up to 400 eggs. Adults emerging from grassland near cane prefer to lay eggs into grass. The brown cicada commonly infests blady grass and is often forced to fly into cane if the grass has been burned.

Below: Adult Cicada.



Management

No insecticide is registered for controlling cicadas. Since the early 1970's, damage by both brown and yellow cicadas has been controlled using a planting rotation which breaks the cycle of movement from infested fields to 'clean' ones. Once the cycle has been broken, farmers are able to return to continuous cropping cycles.

All severely infested fields and parts of fields should be ploughed soon after harvest, and the area fallowed over the summer flight period. Ploughout kills over 90% of nymphs in the soil and harms the survivors enough to prevent adult emergence. Fallowing means that the few survivors soon die and do not attract others into the newly planted crop.

Lightly infested fields should be managed to prevent further expansion of the infested area. Infested old ratoons near younger non-infested fields should not be kept, and the edges of infested fields should be destroyed and fallowed. This creates a small border which adult cicadas don't like crossing. Any areas within fields showing ratoon failure or heavy infestation should be ploughed and fallowed.