Mango Leafhoppers detected in Pine Creek and Katherine

Entomology
Department of Business, Industry and Resource Development

The mango leafhopper, *Idioscopus nitidulus* is a major pest of mangoes in the Northern Territory. The leafhopper originated from India and is now widespread in Southeast Asia. It was first detected in the suburbs of Darwin in 1997 and rapidly spread throughout Darwin and nearby rural regions. Mango leafhopper is now found throughout Darwin, Palmerston and the rural area as far south as the town of Adelaide River. In June 2005, a small number of properties in Pine Creek and Katherine were infested with mango leafhopper. Elsewhere in Australia, this species as well as another species of mango leafhopper, *Idioscopus clypealis* is found in northern Cape York Peninsula and in Torres Strait, Queensland.

Stop the spread of mango leafhoppers

Mango leafhoppers as well as other mango pests can be spread easily from one property to another. The most common way that leafhoppers are spread is by transporting infested mango seedlings (nursery stock) or cuttings of the shoots or flowers. Leafhoppers can also be transported on peoples' clothing if they have walked through an infested orchard. Cars with windows wound down that have been parked under infested mango trees allow leafhoppers to hitch a ride. Do not transport infested plant material or other items that may contain mango leafhoppers to properties free of this pest.

Appearance

Mango leafhoppers are small cicada-like insects that are 4-5 mm in length when mature. The adults are golden-brown to dark brown in colour, wedge shaped and have wings. Eggs are inserted into the midrib of the new leaves and into flower panicles. The nymphs (immatures) are greenish in colour with black or brown markings and resemble small adults without wings. When disturbed the adults jump off the plant with a clicking sound and can fly a short distance before settling back on the plant. The nymphs cannot fly but are able to walk rapidly.

Life Cycle

Mango leafhoppers breed all year round but produce more eggs during the flowering and fruiting period. The nymphs also develop faster during this period. Eggs hatch in 2-3 days and the development period from nymphs to adults is 12-20 days.

Damage

Leafhoppers are sap suckers. Feeding and egg laying causes curling and distortion of new flush and damage to flowers. On closer examination, eggs can be seen inserted into the mid rib of the leaves and flower panicles. Leafhoppers excrete a sticky liquid known as honeydew which promotes the growth of black sooty mould. Sooty mould interferes with photosynthesis which reduces the vigour of the tree and as a result there is a decrease in yield. Sooty mould can also be caused by other common pests such as flatid planthoppers, pink wax scale and mealybugs. When

left untreated, which is often the case in home gardens, numbers of leafhoppers build up rapidly to the extent where leaves and flowers are damaged and there is no fruit production.

Monitoring

Mango leafhopper populations generally increase from March onwards and this is the crucial time for growers to commence regular monitoring. Since mango leafhopper populations are able to build up very rapidly they should be treated as soon as they are detected. Regular monitoring will enable growers to detect early infestations and treat the affected trees rather than having to treat the whole orchard after they have spread.

Biological Control

There are no specific natural enemies in Australia that are effective in controlling the mango leafhopper. General predators such as praying mantises, spiders and perhaps lacewing larvae that target small nymphs may assist in control.

Chemical Control

In commercial orchards, infestations need to be controlled, or the damage to flower panicles can be severe. Registered insecticides for commercial mango trees include dimethoate, carbaryl and buprofezin. Trees should be monitored regularly particularly between March and October and infestations should be controlled before flowering. Pesticides sprayed during flowering may kill or repel pollinators. When applying pesticides, read all label instructions and wear appropriate protective clothing.

Infestations in the home garden cannot be treated easily, as the trees are generally very large and spraying is difficult. There is also a concern that chemical sprays may drift into houses. As a consequence, the Department does not recommend pesticide applications for home garden mango trees. Urban residents disheartened by mango leafhopper infestations and damage in their suburban home gardens should consider removing their the mango tree.

Organic Growers

Soft chemicals such as potassium soap spray (plus spray oil) or organic pesticides such as pyrethrum may assist in the control of mango leafhoppers. Potassium soap is only effective on the young nymphs.

The use of potassium soap or pyrethrum in suburban home gardens is only effective if the tree is small and can be reached adequately for spray penetration. Large trees are difficult to spray due to access as discussed above.

Quarantine Restrictions

Mango plants and fruit consigned interstate may require specific treatments and certification. For interstate certification contact Peter Cawdrey, NT Quarantine Darwin on phone number 8999 2138 or Alison Jacks, NT Quarantine Katherine on phone number 8973 9704.

Legislation is currently being developed which reinforces the responsibility of the public to prevent the spread of plant pests and diseases.

For further information regarding this article please contact Deanna Chin, Entomology Darwin on phone number 8999 2344 or Megan Hoskins, Entomology Katherine on 8973 9762. For general information on mango leafhopper visit the Entomology Website at www.entomology.nt.gov.au or refer to the Mango Leafhopper agnote available from Publications www.primaryindustry.nt.gov.au
Photographs: Brian Thistleton, Haidee Brown and Deanna Chin

Mango leafhopper on flower panicle

Sooty mould on infested leaves

New flush appears crinkled or curled from egg laying and feeding caused by mango leafhopper.

In severe infestations, mango leafhoppers can damage the entire flower panicle