

Macadamia problem solver & bug identifier

Reprint – information current in 2003



REPRINT INFORMATION – PLEASE READ!

For updated information please call 13 25 23 or visit the website www.deedi.qld.gov.au

This publication has been reprinted as a digital book without any changes to the content published in 2003. We advise readers to take particular note of the areas most likely to be out-of-date and so requiring further research:

- Chemical recommendations—check with an agronomist or Infopest www.infopest.qld.gov.au
- Financial information—costs and returns listed in this publication are out of date. Please contact an adviser or industry body to assist with identifying more current figures.
- Varieties—new varieties are likely to be available and some older varieties may no longer be recommended. Check with an agronomist, call the Business Information Centre on 13 25 23, visit our website www.deedi.qld.gov.au or contact the industry body.
- Contacts—many of the contact details may have changed and there could be several new contacts available. The industry organisation may be able to assist you to find the information or services you require.
- Organisation names—most government agencies referred to in this publication have had name changes. Contact the Business Information Centre on 13 25 23 or the industry organisation to find out the current name and contact details for these agencies.
- Additional information—many other sources of information are now available for each crop. Contact an agronomist, Business Information Centre on 13 25 23 or the industry organisation for other suggested reading.

Even with these limitations we believe this information kit provides important and valuable information for intending and existing growers.

This publication was last revised in 2003. The information is not current and the accuracy of the information cannot be guaranteed by the State of Queensland.

This information has been made available to assist users to identify issues involved in macadamia production. This information is not to be used or relied upon by users for any purpose which may expose the user or any other person to loss or damage. Users should conduct their own inquiries and rely on their own independent professional advice.

While every care has been taken in preparing this publication, the State of Queensland accepts no responsibility for decisions or actions taken as a result of any data, information, statement or advice, expressed or implied, contained in this publication.



Queensland Government



Bug Identifier

There are two ways for you to use this section.

1. Search for an unknown insect pest or beneficial that you want to identify – simply browse through the pages of the relevant insect type or stage. For example, if you find an egg on a nut and want to identify it, go to the egg pages starting on page 158, and see all of the commonly-found eggs pictured together. This makes quick identification easier.

| | |
|---------------------------------------|------------------------|
| Eggs and scales | Go to pages 158 to 165 |
| Tiny insects and mites | Go to pages 166 to 172 |
| Grubs and caterpillars (larvae) | Go to pages 173 to 186 |
| Moths and butterflies | Go to pages 187 to 194 |
| Bugs and beetles | Go to pages 195 to 202 |
| Flies and wasps | Go to pages 203 to 206 |
| Ants and spiders | Go to pages 207 to 208 |

2. Search for a known insect pest or beneficial for the photographs of its relevant stages – first find the pest or beneficial in the list below and use the page references provided:

Pests

| | |
|--------------------------------|----------------------------------|
| Bananaspotting bug | 159 (egg); 195 (nymph and adult) |
| Bizarre looper | 179 (larva); 194 (moth) |
| Black citrus aphid | 168 |
| Broad mite | 167 |
| Brown looper | 181 (larva); 193 (moth) |
| Brown tufted caterpillar | 180 |

| | |
|---------------------------------|---|
| Cicada | 198 (adult and nymphal case) |
| Citrus flat mite | 168 |
| Coastal brown ant | 207 |
| Cornelian butterfly | 176 (larva); 189 (butterfly) |
| Cup moth | 177 (larva); 193 (moth) |
| Doubleheaded hawk moth | 180 (larva); 192 (moth) |
| Flower looper | 182 |
| Flower thrips | 166 |
| Fruitspotting bug | 159 (egg); 195 (nymph and adult) |
| Greenhouse thrips | 166 |
| Green vegetable bug | 160 (egg); 197 (nymph and adult) |
| Hairyline blue butterfly | 163 (egg); 181 (larva); 191 (butterfly) |
| Hibiscus mealybug | 197 (nymph and adult) |
| Kernel grub | 174 (larva); 189 (moth) |
| Lace bug | 198 |
| Large bagworm | 178 |
| Latania scale | 160 |
| Leptocoris bug | 196 |
| Long soft scale | 162 |
| Macadamia cup moth | 178 |
| Macadamia felted coccid | 159 |
| Macadamia flower caterpillar .. | 158 (egg); 173 (larva); 187 (moth) |
| Macadamia leafminer | 175 (larva); 188 (moth) |
| Macadamia mussel scale | 161 |
| Macadamia nutborer | 158 (egg); 173 (larva); 187 (moth) |
| Macadamia twig-girdler | 174 (larva); 188 (moth) |
| Macadamia white scale | 161 |
| Mango planthopper | 164 (egg); 169 (nymph); 194 (adult) |

| | |
|------------------------------------|------------------------------|
| Nut stemborer | 163 (egg) |
| Oleander scale | 162 |
| Orange fruitborer | 177 (larva); 190 (moth) |
| Pencilled blue butterfly | 176 (larva); 190 (butterfly) |
| Queensland fruit fly | 203 |
| Redbanded thrips | 167 |
| Redshouldered leaf beetle | 196 |
| Rutherglen bug | 199 (nymph and adult) |
| Sigastus weevil | 182 (larva); 199 (adult) |
| Variegated hairy caterpillar | 179 (larva); 192 (moth) |
| Yellow peach moth | 175 (larva); 191 (moth) |

Beneficials

| | |
|----------------------------------|-------------------------------------|
| Aphytis parasitic wasp | 172 |
| Assassin bug | 165 (egg); 200 (adult) |
| Brown lacewing | 183 (larva) |
| Coccinellid ladybird | 184 (larva) |
| Crab spider | 208 |
| Elachertus ectoparasite | 171, 186 |
| Honey bee | 203 |
| Jumping spider | 208 |
| Lacewing | 164 (egg); 183 (larva); 204 (adult) |
| Lynx spider | 207 |
| Mirid bug | 202 |
| Native bee | 204 |
| Paper wasp | 206 |
| Parasitic wasp | 171 |
| Phytoseiid predatory mite | 169 |
| Predatory ladybird beetles | 201 |

| | |
|-----------------------------------|-------------------------------------|
| Predatory mealybug ladybird | 185 (larva); 201 (adult) |
| Predatory mirid bug | 200 |
| Predatory thrips | 170 |
| Syrphid fly | 165 (egg); 184 (larva); 205 (adult) |
| Tachinid fly | 206 |
| Trichogrammatoidea wasp | 170 |
| Trissolcus wasp | 205 |
| Wasp ectoparasite | 172, 185, 186 (larva) |

bug identifier

bug identifier



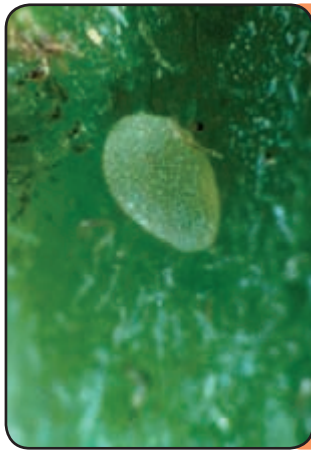
bug identifier



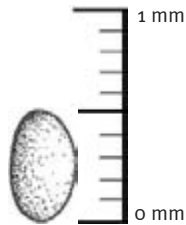
bug identifier



Macadamia flower caterpillar (*Cryptoblabes hemigypta*) egg



pest

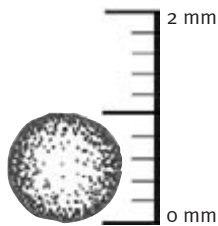


Found on flowers.
Damage shown on page 80.
Major pest.

Macadamia nutborer (*Cryptophlebia ombrodelta*) eggs



pest

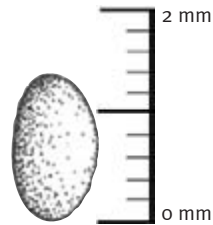


Found on nuts, nut stalks, flowers and occasionally leaves.
Damage shown on page 106.
Major pest.

Fruitspotting bug (*Amblypelta nitida*) and bananaspotting bug (*A. lutescens lutescens*) eggs

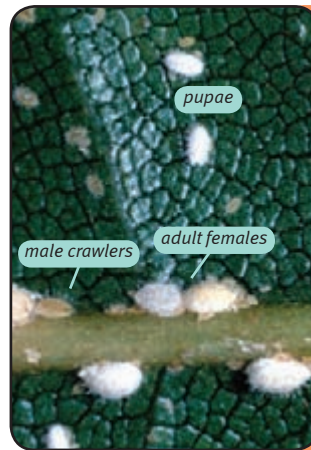


pest

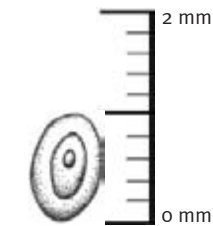


Found on leaves and nuts.
Damage shown on page 102.
Major pest.

Macadamia felted coccid (*Eriococcus ironsidei*)



pest



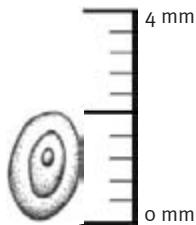
Found on leaves, branches and flowers.
Damage shown on pages 12 and 88.
Major pest.



Latania scale (*Hemiberlesia lataniae*)



pest

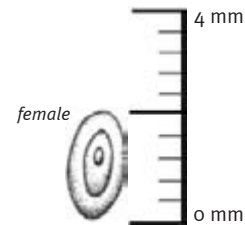


Found on leaves, branches and nuts.
Damage shown on pages 14 and 116.
Occasionally important in some areas such as northern NSW.

Macadamia white scale (*Pseudaulacaspis brimble-*



pest

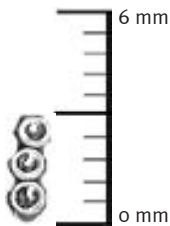


Found on leaves and nuts.
Damage shown on pages 14 and 116.
Minor pest.

Green vegetable bug (*Nezara viridula*) eggs



pest

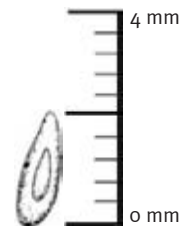


Found mainly on leaves.
Damage shown on page 150.
Occasionally important in some areas.

Macadamia mussel scale (*Lepidosaphes macadamiae*)



pest



Found mainly on leaves.
Minor pest.



Long soft scale (*Coccus longulus*)

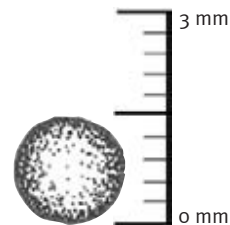
pest



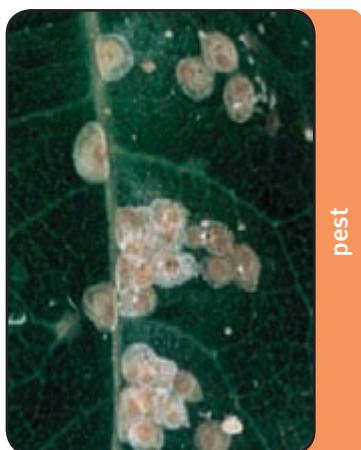
Found on leaves and twigs.
Minor pest.

Lycaenid butterfly (hairyline blue butterfly – *Erysichton lineata lineata*) eggs

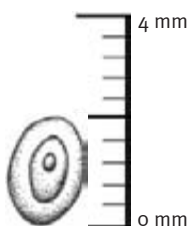
pest



Found in flowers.
Damage shown on page 94.
Minor pest.

Oleander scale (*Aspidiotus nerii*)

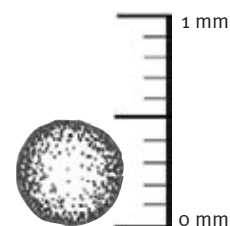
pest



Found mainly on leaves.
Minor pest.

Nut stemborer (*Paranepsia amydra*) egg

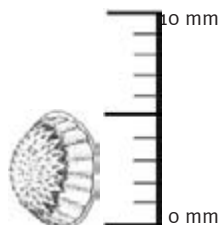
pest



Found on leaves and nuts.
Damage shown on pages 64 and 138.
Minor pest.

Mango planthopper (*Colgaroides acuminata*) egg mass

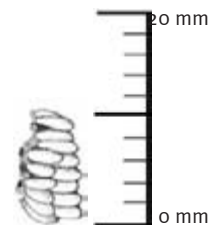
pest



Found on nut stalks.
Incidental insect causing little if any damage.

Assassin bug (*Pristhesancus plagipennis*) egg mass

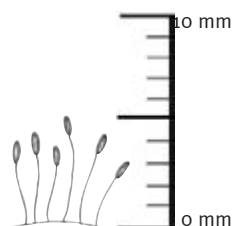
beneficial



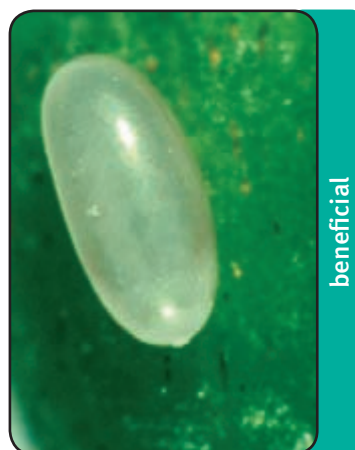
Found anywhere on tree.
General predator of many pests; particularly fruitspotting bug, bananaspotting bug and nutborer.

Lacewing (*Mallada signata*) egg

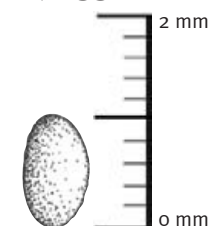
beneficial



Found anywhere on tree.
General predator of most pests, particularly aphids, mealybugs, scales, caterpillars and thrips.

Syrphid fly (*Melanastoma agrolas*) egg

beneficial



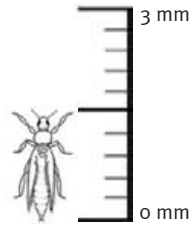
Found mainly on flowers.
Predator of aphids and thrips.



Flower thrips (Scirtothrips sp.)



pest

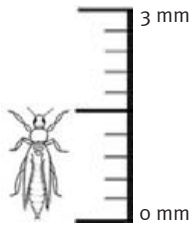


Found on leaves, flowers and nuts.
Damage shown on pages 16, 84 and 128.
Sometimes a major pest.

Greenhouse thrips (Heliothrips haemorrhoidalis)



pest

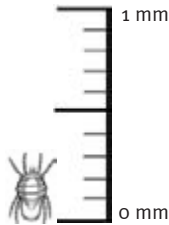


Found mainly on nuts.
Damage shown on page 128.
Minor pest.

Citrus flat mite (Brevipalpus lewisi)



pest

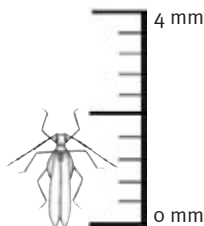


Found mainly on nuts.
Damage shown on page 130.
Minor pest.

Black citrus aphid (Toxoptera citricida)



pest

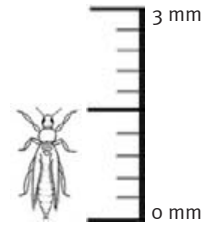


Found on leaves and flowers.
Damage shown on pages 20 and 100.
Common, but rarely causes major damage.

Redbanded thrips (Selenothrips rubrocinctus) nymphs

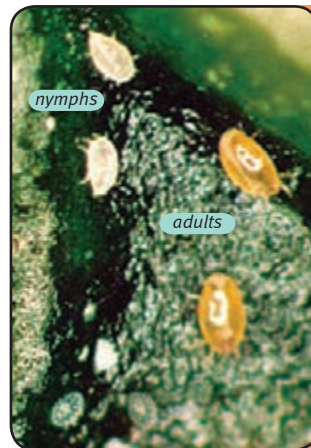


pest

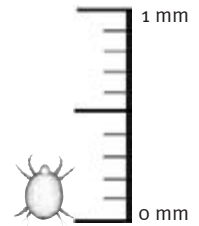


Found mainly on nuts.
Damage shown on page 128.
Minor pest.

Broad mite (Polyphagotarsonemus latus)



pest

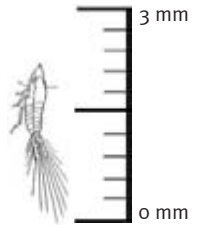


Found on leaves, flowers and nuts.
Damage shown on pages 18, 92 and 130.
May be a major pest in nurseries and young trees.

Mango planthopper (Colgaroides acuminata) nymphs



pest

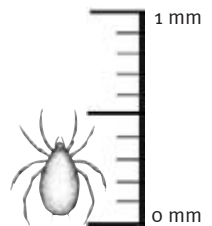


Found on nut stalks.
Incidental insect causing little if any damage.

Phytoseiid predatory mite



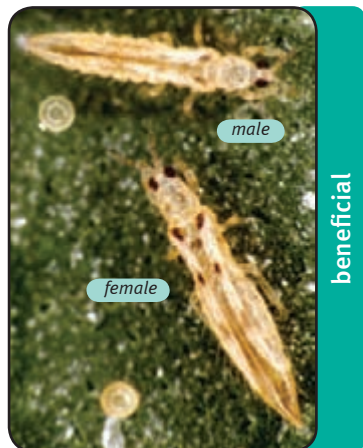
beneficial



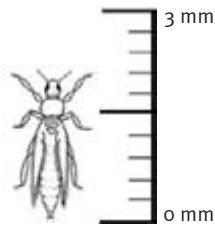
Found on leaves, flowers and nuts.
Predator of mites and thrips.



Predatory thrips (Scolothrips sexmaculatus)

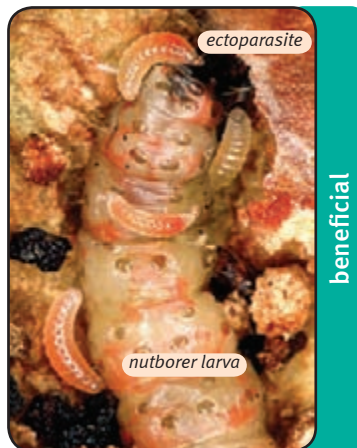


beneficial

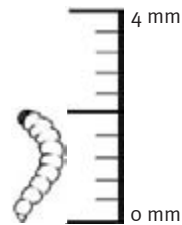


Found on leaves, flowers and nuts.
Predator of mites and thrips.

Elachertus ectoparasite larvae



beneficial

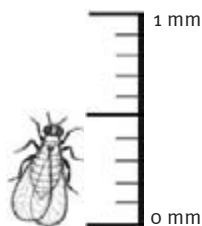


Found mainly on nuts.
External parasite of nutborer.

Trichogrammatoidea wasp (Trichogrammatoidea spp.)



beneficial

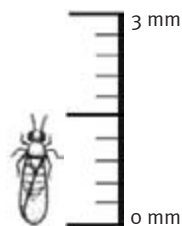


Found mainly on nuts.
Internal parasite of nutborer.

Parasitic wasp



beneficial

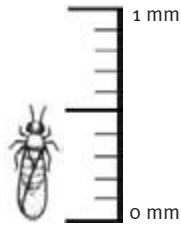


Found on leaves or nuts.
Internal egg parasite of fruitspotting and banana-spotting bugs.

Aphytis parasitic wasp

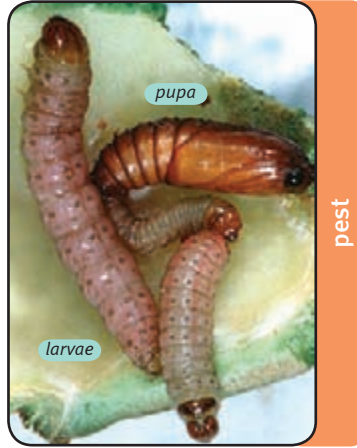


beneficial

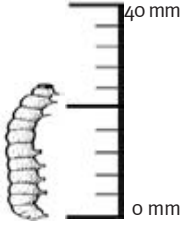


Found on leaves, branches or nuts.
Internal parasite of latania scale.

Macadamia nutborer (Cryptophlebia ombrodelta) larvae and pupa



pest

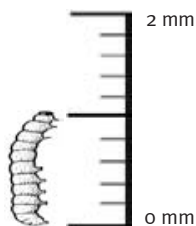


Found on nuts, nut stalks and occasionally flowers.
Damage shown on page 106.
Major pest.

Wasp ectoparasite larva

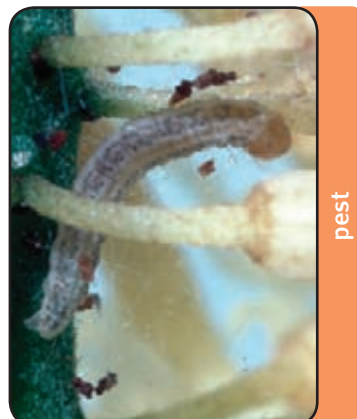


beneficial

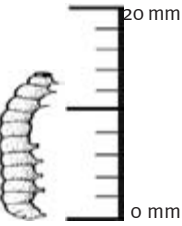


Found on leaves.
External parasite of leafminer.

Macadamia flower caterpillar (Cryptoblabes hemigypsa) larva



pest



Found on flowers.
Damage shown on page 80.
Major pest.

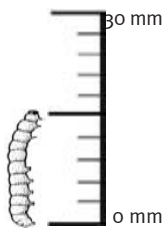




Kernel grub (*Assara seminivale*) larva



pest

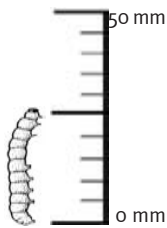


Found on nuts.
Damage shown on page 132.
Can be a major pest on occasions.

Macadamia twig-girdler (*Neodrepta luteotactella*) larva



pest

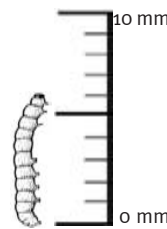


Found on leaves, branches and nuts.
Damage shown on pages 10 and 140.
Occasionally important in elevated rainforest areas.

Macadamia leafminer (*Acrocercops chionosema*) larvae



pest

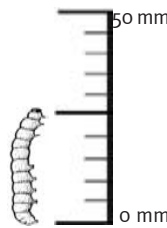


Found on leaves.
Damage shown on page 8.
May be a major pest in nurseries and young trees.

Yellow peach moth (*Dichocrocis punctiferalis*) larva



pest

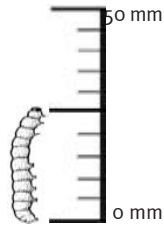


Found on nuts.
Damage shown on page 124.
Minor pest.

Cornelian butterfly (*Deudorix epijarbas diovis*) larva



pest

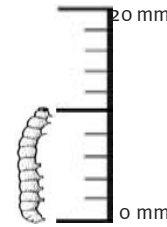


Found on nuts.
Damage shown on page 138.
Minor pest.

Orange fruitborer (*Isotenes miserana*) larva



pest

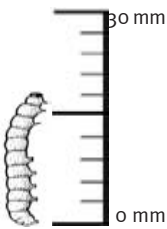


Found mainly on leaves and occasionally on flowers and nuts.
Damage shown on page 26.
Minor pest in nurseries.

Pencilled blue butterfly (*Candalides absimilis*) larva



pest

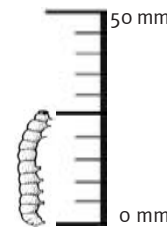


Found on leaves, flowers and nuts.
Damage shown on pages 30 and 144.
Minor pest.

Cup moth (*Anaxidea lozogramma*) larva



pest



Found on leaves.
Minor pest.

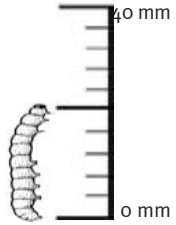




Macadamia cup moth (*Comana fasciata*) larva



pest

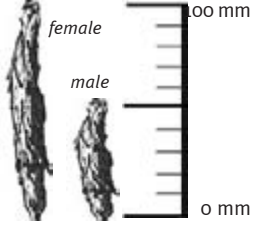


Found on leaves.
Damage shown on page 28.
Minor pest.

Large bagworm (*Oiketicus elongatus*) larvae



pest

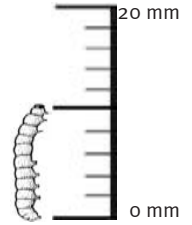


Found on leaves.
Minor pest.

Variegated hairy caterpillar (*Anthela varia*) larva



pest

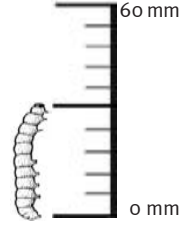


Found on leaves and occasionally flowers.
Damage shown on page 28.
Minor pest.

Bizarre looper (*Eucyclodes pieroides*) larva



pest

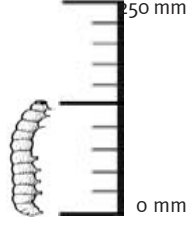


Found on leaves and occasionally flowers and nuts.
Damage shown on page 30.
Minor pest.

Doubleheaded hawk moth (*Coequosa triangularis*) larva

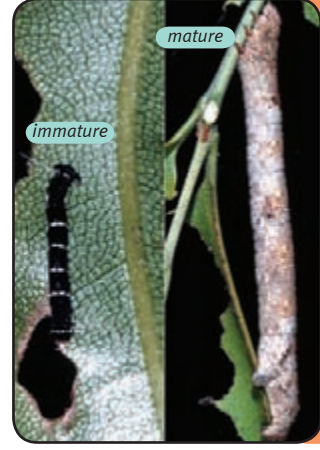


pest

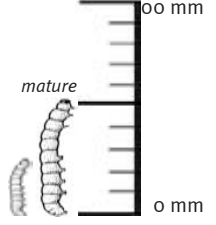


Found on leaves.
Minor pest.

Brown looper (*Lophodes sinistraria*) larvae



pest

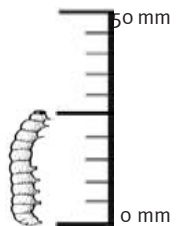


Found on leaves and nuts.
Damage shown on page 32.
Minor pest.

Brown tufted caterpillar (*Olene mendosa*) larva



pest

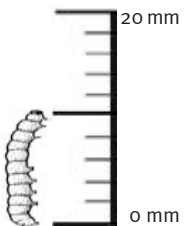


Found on leaves and flowers.
Damage shown on page 32.
Minor pest.

Hairyline blue butterfly (*Erysichton lineata lineata*) larva



pest



Found on flowers.
Damage shown on page 94.
Minor pest.

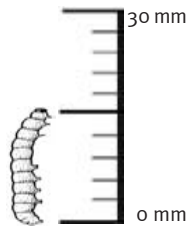




Flower looper (*Gymnoscelis subrufata*) larva

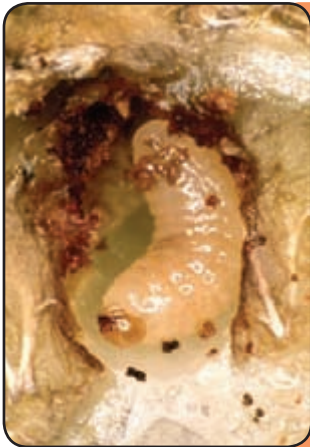


pest

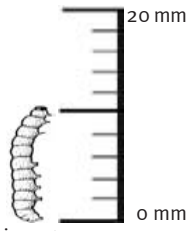


Found on flowers.
Damage shown on page 96.
Minor pest.

Sigastus weevil (*Sigastus* sp.) larva



pest

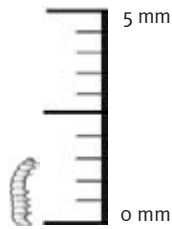


Found in nuts.
Damage shown on page 152.
Confined to a small area of the Atherton Tableland, where it can cause significant damage.

Coccinellid ladybird larvae



beneficial

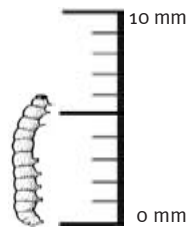


Found mainly on leaves and branches.
Predator of felted coccid.

Syrphid fly (*Melanostoma agrolas*) larva

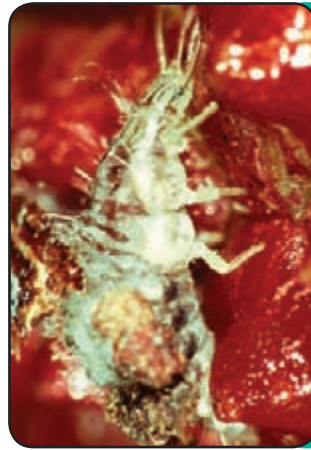


beneficial

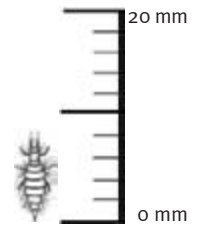


Found mainly on flowers.
Predator of aphids, thrips and flower caterpillar.

Lacewing (*Mallada signata*) larva



beneficial

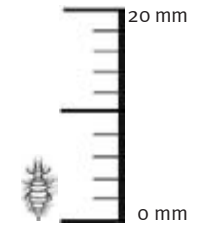


Found anywhere on tree.
General predator of most pests, particularly aphids, mealybugs, scales, caterpillars and thrips.

Brown lacewing (*Micromus tasmaniae*) larva

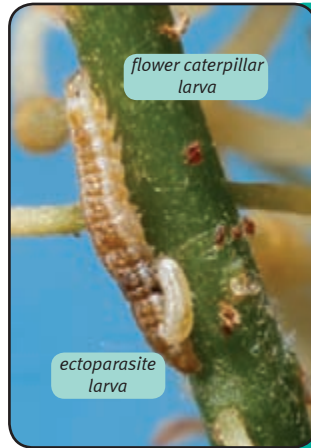


beneficial

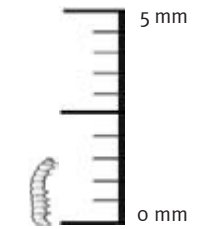


Found anywhere on tree.
General predator of most pests, particularly aphids.

Wasp ectoparasite larva



beneficial

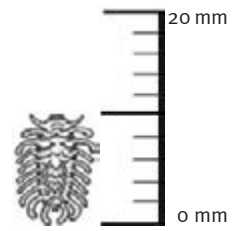


Found on flowers.
External parasite of flower caterpillar.

Predatory mealybug ladybird (*Cryptolaemus montrouzieri*) larva



beneficial

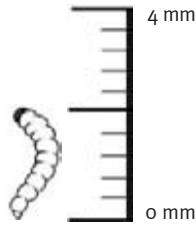


Found anywhere on tree.
Predator of hibiscus mealybug.



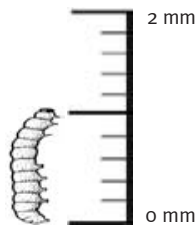


Elachertus ectoparasite larvae



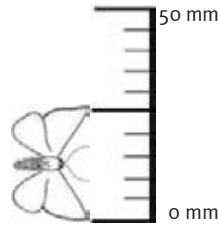
Found mainly on nuts.
External parasite of nutborer.

Wasp ectoparasite larva



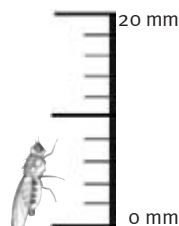
Found on leaves.
External parasite of leafminer.

Macadamia twig-girdler (Neodrepta luteotactella) moth



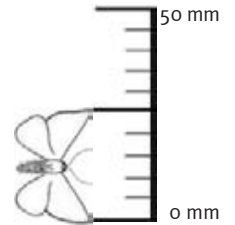
Found anywhere in orchard (night flying).
Damage shown on pages 10 and 140.
Occasionally important in elevated rainforest areas.

Macadamia leafminer (Acrocercops chionosema) moth



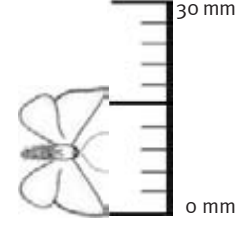
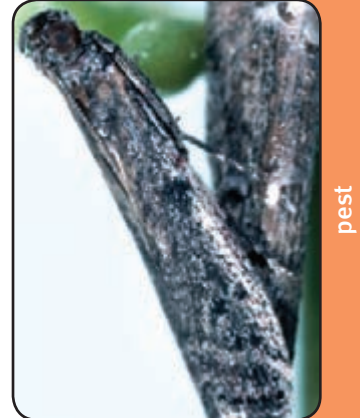
Found anywhere in orchard (day flying).
Damage shown on page 8.
May be a major pest in nurseries and young trees.

Macadamia nutborer (Cryptophlebia ombrodelta) moth



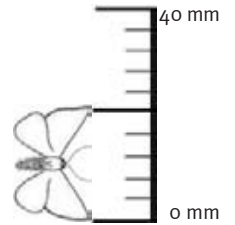
Found anywhere in orchard (night flying).
Damage shown on page 106.
Major pest.

Macadamia flower caterpillar (Cryptoblabes hemigypsa) moth



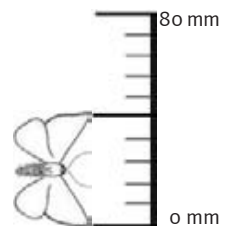
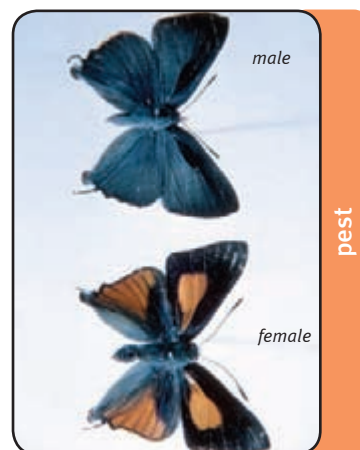
Found anywhere in orchard (night flying).
Damage shown on page 80.
Major pest.

Kernel grub (Assara seminivale) moth



Found anywhere in orchard (night flying).
Damage shown on page 132.
Can be a major pest on occasions.

Cornelian butterfly (Deudorix epijarbas diovis)



Found anywhere in orchard (day flying).
Damage shown on page 138.
Minor pest.

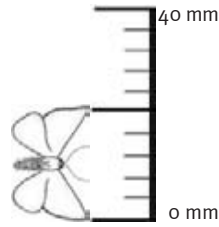




Pencilled blue butterfly (*Candalides absimilis*)



pest

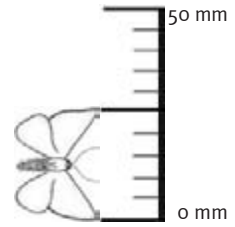


Found anywhere in orchard (day flying).
Damage shown on pages 30 and 144.
Minor pest.

Hairyline blue butterfly (*Erysihton lineata lineata*)



pest

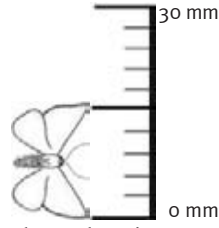


Found anywhere in orchard (day flying).
Damage shown on page 94.
Minor pest.

Orange fruitborer (*Isotenes miserana*) moth



pest

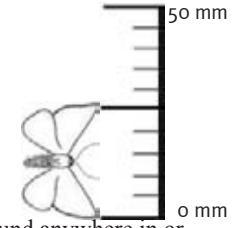


Found anywhere in orchard (night flying).
Damage shown on page 26.
Minor pest in nurseries.

Yellow peach moth (*Dichocrocis punctiferalis*)



pest

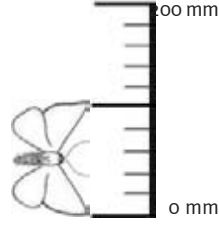


Found anywhere in orchard (night flying).
Damage shown on page 124.
Minor pest.

Doubleheaded hawk moth (*Coequosa triangularis*)



pest

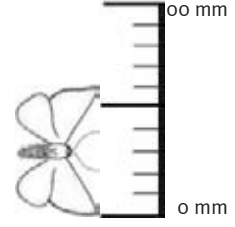


Found anywhere in orchard (night flying).
Minor pest.

Brown looper (*Lophodes sinistraria*) moth



pest

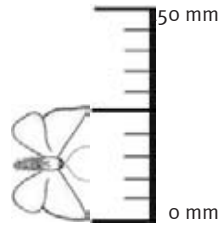


Found anywhere in orchard (night flying).
Damage shown on page 32.
Minor pest.

Variigated hairy caterpillar (*Anthela varia*) moth



pest

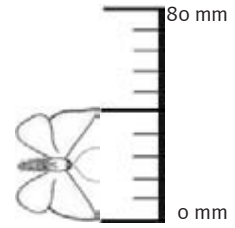


Found anywhere in orchard (night flying).
Damage shown on page 28.
Minor pest.

Macadamia cup moth (*Comana fasciata*)



pest



Found anywhere in orchard (night flying).
Damage shown on page 28.
Minor pest.

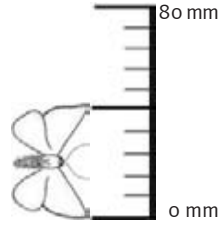




Bizarre looper (Eucyclodes pieroides) moth

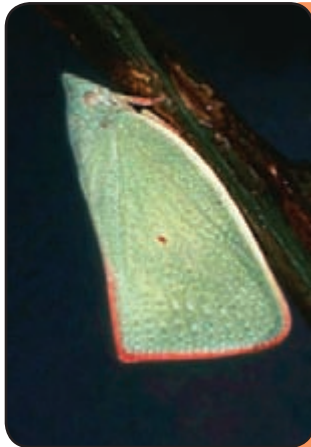


pest

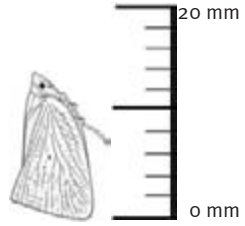


Found anywhere in orchard (night flying).
Damage shown on page 30.
Minor pest.

Mango planthopper (Colgaroides acuminata)

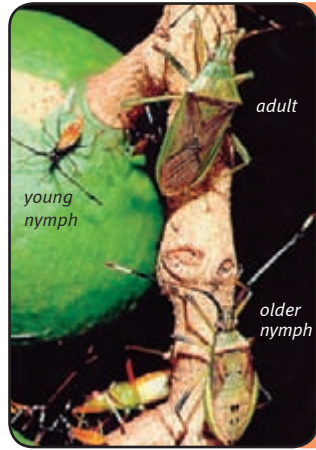


pest

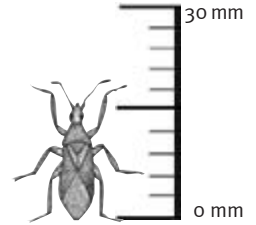


Found on leaves, twigs and nuts.
Incidental insect causing little if any damage.

Fruitspotting bug (Amblypelta nitida)

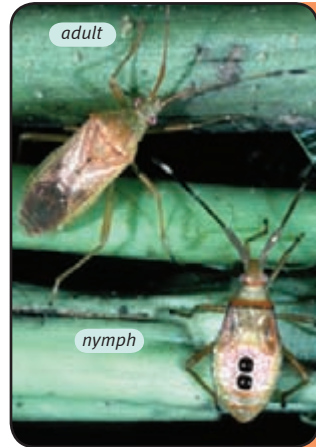


pest

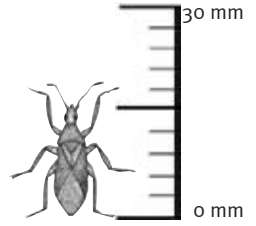


Found anywhere in the tree.
Damage shown on page 102.
Major pest.

Bananaspotting bug (Amblypelta lutescens lutescens)



pest



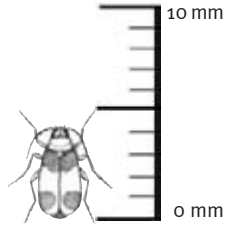
Found anywhere in the tree.
Damage shown on pages 46 and 102.
Major pest in Queensland only.



Redshouldered leaf beetle (Monolepta australis)



pest

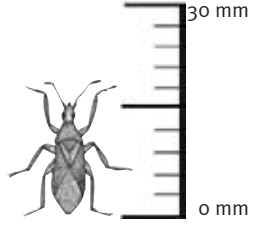


Found on leaves, flowers and nuts.
Damage shown on pages 22 and 86.
Major pest in some areas.

Leptocoris bug (Leptocoris rufomarginata and L. tagalica)



pest

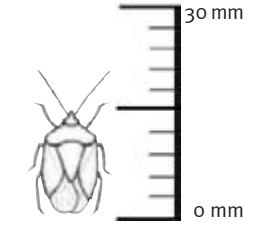


Found anywhere on tree.
Damage shown on page 148.
Sporadic problem but capable of significant damage.

Green vegetable bug (Nezara viridula)



pest

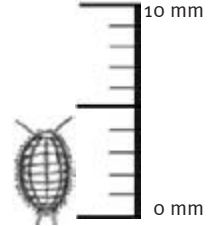


Found anywhere on tree.
Damage shown on page 150.
Sporadic problem but capable of significant damage, particularly in northern NSW.

Hibiscus mealybug (Maconellicoccus hirsutus)



pest



Found on leaves, twigs and nuts.
Damage shown on pages 36 and 146.
Generally a minor pest.

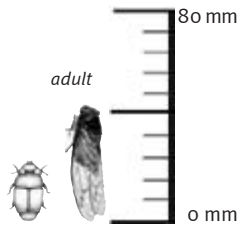




Cicada (Psaltoda sp.)



pest

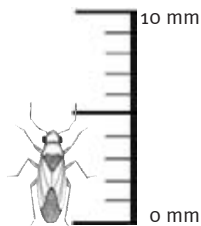


Nymphal cases found on trunks and branches. Adults found anywhere. Damage on page 34. Sporadic, but capable of significant damage in individual trees.

Lace bug (Ulonemia sp.)



pest

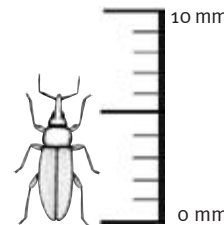


Found on flowers and occasionally leaves. Damage shown on page 98. Minor pest.

Sigastus weevil (Sigastus sp.)

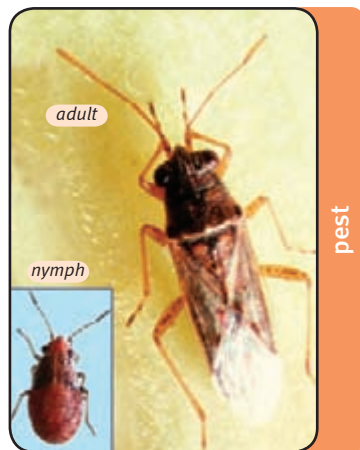


pest

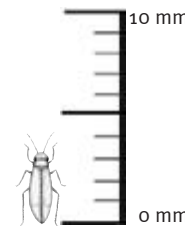


Found anywhere in tree but mainly on nuts. Damage on page 152. Can cause significant damage in a small area of the Atherton Tableland.

Rutherglen bug (Nysius vinitor)



pest

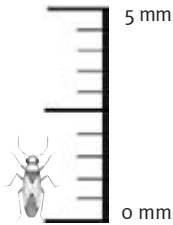


Found in flowers. Incidental insect causing little or no damage.

Predatory mirid bug



beneficial

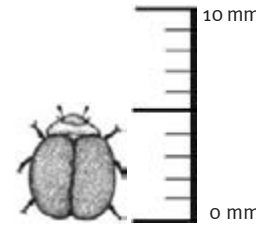


Found in flowers. Predator of flower caterpillar.

Predatory ladybird beetles

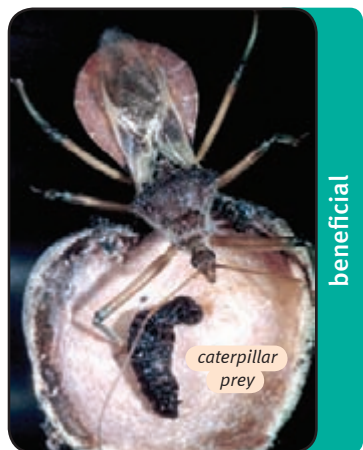


beneficial

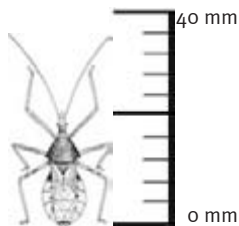


Found anywhere on tree. General predator of aphids.

Assassin bug (Pristhesancus plagipennis)



beneficial

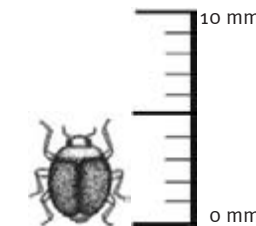


Found anywhere on tree. General predator of most pests, particularly aphids, mealybugs, scales, caterpillars and thrips.

Predatory mealybug ladybird (Cryptolaemus mon-



beneficial

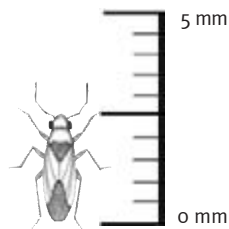


trouzieri)
Found anywhere on tree. Predator of hibiscus mealybug.



**Mirid bug (*Taylorilygus pallidulus*)**

beneficial

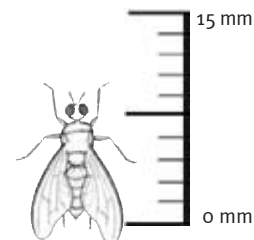


Found mainly in flowers.
Predator of small insects and eggs, and feeder on pollen and nectar

202

Queensland fruit fly (*Bactrocera tryoni*)

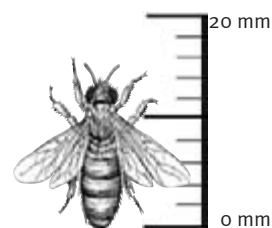
pest



Found anywhere on tree.
Pest of other crops (not macadamia); often seen sheltering in trees.

Honey bee (*Apis mellifera*)

beneficial

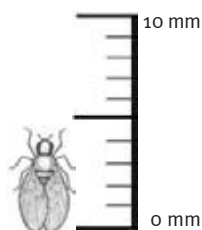


Found in flowers.
Major pollinator of flowers.

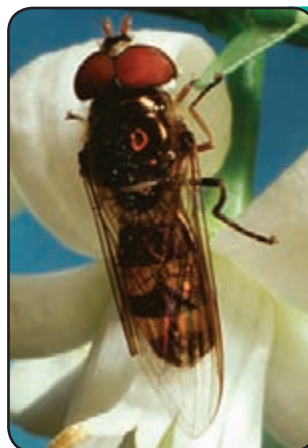
203

**Native bee (*Trigona* sp.)**

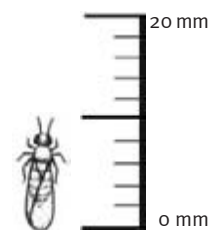
beneficial



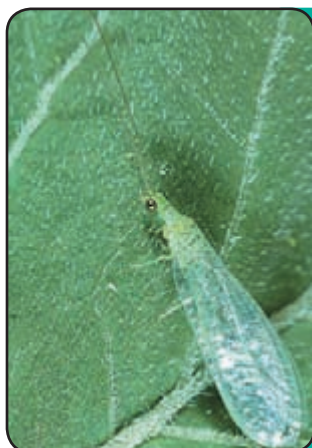
Found in flowers.
Major pollinator of flowers.

Syrphid fly (*Melanostoma agrolas*)

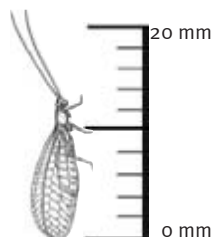
beneficial



Found mainly on flowers.
Predator of aphids and thrips.

Lacewing (*Mallada signata*)

beneficial

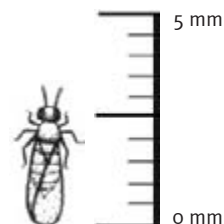


Found anywhere on tree.
General predator of most pests, particularly aphids, mealybugs, scales, caterpillars and thrips.

204

Trissolcus wasp (*Trissolcus basilis*)

beneficial



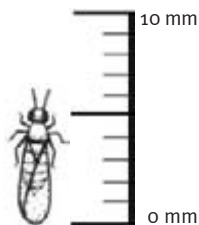
Found anywhere on tree.
Parasite of eggs of green vegetable bug.

205



Tachinid fly (*Argyrophylax proclinata*)

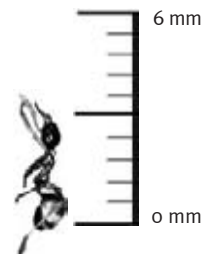
beneficial



Found anywhere on tree.
Parasite of yellow peach moth.

Coastal brown ant (*Pheidole megacephala*)

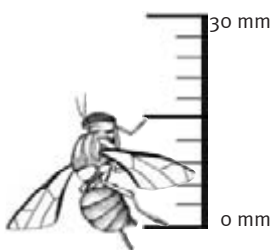
pest



Found anywhere on tree.
May carry mealybugs into the tree and 'farm' mealybugs and aphids for honeydew secretions, driving off predators.

Paper wasps (*Polistes humilis*)

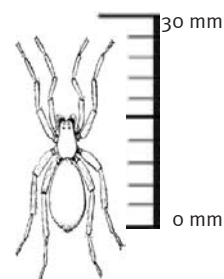
beneficial



Found anywhere on tree as individual wasps or in nests.
General predator of pests, particularly caterpillars.

Lynx spider (*Oxyopes* sp.)

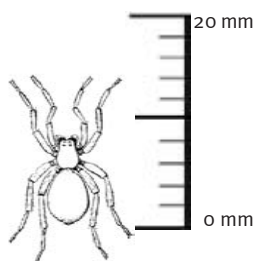
beneficial



Found anywhere on tree.
Predator of a wide range of pests.

Crab spider (*Diaea* sp.)

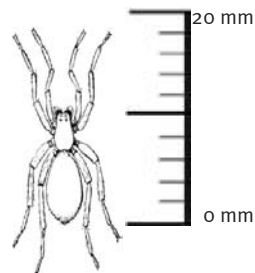
beneficial



Found anywhere on tree.
Predator of a wide range of pests.

Jumping spider (*Opisthonus* sp.)

beneficial



Found anywhere on tree.
Predator of a wide range of pests.

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