

Predatory ladybeetles (083)

Common Name

Ladybeetles, ladybird beetles

Scientific Name

Phrynosoma sp; there are many others.

Distribution

Lady beetle species of many different types are present worldwide, and occur in all Pacific island countries.

Prey

Aphids, mealybugs, scale insects, caterpillar eggs, mites.

Description & Life Cycle

Eggs are generally yellow and the shape of rice grains; they are laid on their ends in clusters, close to aphid colonies. The larvae hatch at the same time; they look like miniature crocodiles (Photos 1-4). They have spots or patches of dark blue, with areas of red or yellow. After several weeks of feeding the larva attaches to a leaf or a branch, and turns into a pupa. The pupa looks like a curled up larva, with similar colours. About a week later, the pupa splits and the adult crawls out. As the skin starts to dry and harden, the adult becomes characteristically yellowish-orange with black markings (Photo 5).

The larger species, feeding on aphids and insect eggs, are bluish-black and red or yellow; the smaller species, feeding on scale insects, are white with long waxy threads.

Impact

Ladybeetles do not damage crops: they are not pests. Predatory ladybeetles are beneficial; they occur on many crops, feeding on aphids, mealybugs, scales and other damaging insect pests.

It is important to distinguish predatory or 'farmer-friendly' ladybeetles from the plant-feeding ladybeetles belonging to the subfamily Epilachninae (**see Fact Sheet no. 58**). The adult plant-feeding ladybeetles have short soft hairs on the upper surface, and the larvae have long stiff spines over the body.

Detection & inspection

Look for adult ladybeetles with bright shiny, round bodies, which are red or orange with black markings or spots, without soft short hairs; look for the eggs, which are creamy yellowish-orange, laid in clusters close to aphid colonies; and look for the larvae, which are long, active, dark with yellow or red spots and patches, and covered in branched spines.

Management of Biocontrol Agents

GENERAL

Ladybeetles are effective biological control agents, but will only appear in the crop if there is food for them, such as aphids or scales. Pesticides easily kill them, and routine spray programs will destroy any ladybeetles feeding on insect pests and mites.

MOVING THEM AROUND

As all stages of ladybeetles are relatively large, it is easy to move them to where they would do most good. Handpick adults and larvae, and pluck leaves with eggs and pupae and place them in a collecting (jam) jar. Transfer the contents of the jar onto the crop plants infested with pest species.

PROVIDING THEM WITH FOOD

Garden flowers and weeds provide ladybeetles with sugar from their nectar or pollen. Growing flowering plants in the field and around the edges will encourage ladybeetles to stay in the fields to breed. Basil and marigolds are useful garden flowers. *Sonchus* (sow thistles) and *Chenopodium* (goosefoots) are weeds that are particularly good sources of food for ladybeetles, providing nectar and pollen as well as aphids.

DANGERS FROM USING PESTICIDES

Pesticides are harmful to ladybeetles and should only be considered for control of aphids and other pests if ladybeetles are absent or



Photo 1. Ladybeetle larva.



Photo 2. Ladybeetle larva.



Photo 3. Ladybeetle larvae feeding on aphids. Ants are also present taking the honeydew from the aphids.



Photo 4. Ladybeetle larvae feeding on aphids. The pale yellow slug-like creatures in the centre and to the right are larvae of syrphids or hoverflies.

in low numbers. If pesticides are needed, use ones that stay active on plant surfaces for a few days only. For example, use derris, pyrethrum, or synthetic pyrethroids. These are destroyed rapidly by sunlight.



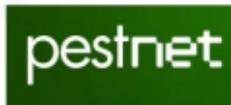
Photo 5. Adult ladybeetle.

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Information from Hoffmann MP, Frodsham AC (1993) Lady Beetles. Natural enemies of vegetable insect pests. Cooperative Extension, Cornell University, Ithaca, NY. (<https://biocontrol.entomology.cornell.edu/predators/ladybeetles.php>); and Coccinellidae. Wikipedia. (<https://en.wikipedia.org/wiki/Coccinellidae>); and Bessin R (2019) Ladybugs. Cooperative Extension Service. University of Kentucky College of Agriculture, Food and Environment, Lexington, Kentucky. (<https://entomology.ca.uky.edu/files/e1105.pdf>); and from Ladybird beetles (undated), Business Queensland, Queensland Government. (<https://www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/crop-growing/beneficials/ladybird-beetles>). Photos 1,3&5 Suzanne Neave, CABl, UK.

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