Extension Fact Sheet 58: *Epilachna* Ladybirds

Common name: Eggplant ladybird beetle; 26-spotted ladybirds

Scientific name: *Epilachna* (*Henosepilachna*) *vigintisexpunctata.* Note, the number of spots is variable and cannot be used to identify the ladybird beetles.

H**osts:** This fact sheet concerns *E vigintisexpunctata* (photos, above) on eggplant. It is likely that it feeds on other members of Solanaceae, including tomato and weeds. Another species, *E signatipennis*, has been identified recently from long beans, and most likely can be found on other legumes. Other species of *Epilachna* occur in Solomon Islands on these and other crops, including cucurbits and maize. All have similar life cycles.

Damage

The ladybirds eat the surface of the leaves (photo, right); the larvae graze the under surface, leaving the upper surface intact; adults feed on both sides of the leaf, sometimes making holes as they chew. Seedlings may be killed by the attack, and growth and yield of more mature plants reduced.

Biology and Life Cycle

The adults are like typical ladybirds with wing cases of dull orange and black spots; however, close inspection shows that the upper surface is covered in short downy hairs. This distinguishes these plant-feeding ladybirds from their beneficial bug feeding relatives. The oval (1 mm by 0.4 mm) yellow eggs are laid upright in batches of 10-20 on the underside of a leaf. They hatch in about 4 days. The pale yellow larvae have long, dark-tipped branched

This leaflet is produced by the Ministry of Agriculture & Livestock, Solomon Islands, with support from IPPSI: *Improved Plant Protection in Solomon Islands*, a project financed by ACIAR, the Australian Centre for International Agricultural Research, Canberra. Authors: Helen Tsatsia, MAL & Grahame Jackson, TerraCircle Inc.

spines on their backs; they grow to 6 mm through three moults in the next 18 days, before attaching themselves to the undersides of the leaves and developing into pupae. This stage lasts another 4 days.

The adults fall to the ground when disturbed, pretending to be dead. They also produce a yellow fluid that wards off predators.

Detection and Inspection

Look for the distinctive grazing on one side of the leaf, often leaving the surface of the other side intact. Look for the larvae, mostly on the underside, and the adults on the top of leaves, but always check that the beetles are leaf eating, i.e., they are feeding on the leaf, and are not beneficial species feeding, for instance, on aphids (green flies).

Management

Natural enemies:

There have been no studies of the natural enemies of *Epilachna* species in Solomon Islands. Elsewhere, species of a parasitic wasp (*Pediobius*) have been introduced, achieving successful control of *Epilachna*. There are different species of the beetles, so identification needs to be done carefully. Also, care should be taken to ensure that any *Pediobius* introduced are specific to the pest species, and not likely to attack beneficial members of the family.

Resistant varieties:

- None known in Solomon Islands, although comparative resistance of some varieties of eggplant is known in India.

Cultural control:

- Handpick the larvae, and perhaps the adults. If attempted, it should be done when the beetles are first seen in the crop;
- Remove weeds in the Solanaceae family from around the crop. However, it has been suggested these might act as trap crops, so some experimentation is needed.

Chemical control:

- Use contact insecticides, such as malathion, or synthetic pyrethroids, such as lambda cyhalothrin or permethrin. The choice of chemical is important: use those that are least persistent in the environment, and have low toxicity against bees. READ THE INSTRUCTIONS BEFORE USING ANY PESTICIDE.
- A variety of *Derris*, brought many years ago from Papua New Guinea, is effective as a spray. It contains rotenone, an insecticide. Plants are being multiplied by MAL and KGA for evaluation by growers. Contact those organisations for plants to test.

This leaflet is produced by the Ministry of Agriculture & Livestock, Solomon Islands, with support from IPPSI: *Improved Plant Protection in Solomon Islands*, a project financed by ACIAR, the Australian Centre for International Agricultural Research, Canberra. Authors: Helen Tsatsia, MAL & Grahame Jackson, TerraCircle Inc.