

Extension Fact Sheet 54: Sweet Potato Tortoise Beetle



Common name: Sweet potato tortoise beetle; sometimes known as Golden tortoise beetle

Scientific name: *Cassida papuana*

Hosts: Feeds on sweet potato, *kangkong* (*Ipomoea aquatica*), and related *Ipomoea* species (plants in the morning glory family). Possibly, the beetles feed on crops and weeds in other families.

Damage

Adults feed on leaves, making small to medium-sized holes (photo, left). The larvae at first eat the leaf surface; latter they eat their way through the leaf. The effect on storage root yield is not known in Solomon Islands, but it is unlikely to be large.

Biology and Life Cycle

The oval eggs (1-2 mm long) are laid individually on the leaves in a small papery parcel. The larvae have spines, and an anal fork. The anal fork is made up of long spines near the tip of the abdomen, and these hold the old skins (which are not shed completely) mixed with excreta (faeces or droppings). The 'tail' of old skins is carried over the back of the body, and can be moved about by the anal fork, probably to deter predators. The larvae pass through five moults, before a pupal stage develops. The pupae are attached by the tail end to the underside of the leaf.

The adults are about 5 mm diameter, oval and slightly flattened and squared at the shoulders (photo, right). The head and appendages of the adult are mostly hidden by transparent parts of the thorax and the wing covers.

Detection and Inspection

Look for the golden round beetles, and the clearwing margins that cover most of the head and thorax, and extend beyond the body, covering legs and other appendages.

Management

Tortoise beetles are attacked by (chalcid) wasps in other countries, parasitic flies, and lady beetle larvae. It is likely that these parasites and predators attack Tortoise beetles in Solomon Islands, although it is not known for certain. However, it is not common for Tortoise beetles to become a serious pest.

Resistant varieties:

- None known, but fast-growing varieties are more likely to outgrow the damage caused by the beetles.

Cultural control:

- Avoid planting new crops next to those already infested with the beetles; or
- Harvest the infested crop, collect the vines and destroy them, and then plant the new crop;
- Provide conditions for healthy, rapid plant growth, especially for vine cuttings after planting; these may include manures, mulches and/or commercial fertilizers, and adequate water;
- Remove weeds (especially those in the Convolvulaceae family) around the gardens to reduce the beetle numbers.

Chemical control:

Ashes may be effective in the control of the Tortoise beetle. Apply them to the crop as soon as the pest is seen; do not wait until the population is high. See Fact Sheet no. 56 on PDPs, Plant Derived Pesticides, for details of how to make and apply the ash.

- Use synthetic pyrethroid insecticides, 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.**
- Derris (rotenone) may be effective against the beetle. A local variety of Derris, originally from Papua New Guinea, with a high concentration of rotenone, is being multiplied by MAL and the Kastom Gaden Association. [See these organisations for cuttings.]