

Extension Fact Sheet 38: Aphids



Common name: There are many aphids attacking a wide range of crops. Here, we describe one that is common in Solomon Islands, the Melon or Cotton aphid.

Scientific name: *Aphis gossypii*

Hosts: On many crops and weeds; common on cucurbits (cucumber, melon, watermelon) and taro. Also found on chillies, capsicum and eggplant.

Damage

Aphids cause direct and indirect damage:

- **Direct damage:** Damage due to feeding. Aphids have fine needle-like mouthparts and they use them to suck sap from plants. When they are numerous, young leaves become curled, wrinkled, cup-shaped and smaller than normal. Leaves may wilt, dry up and die early. When populations are high, plants, especially seedlings, become stunted;
- **Indirect damage:** a) Sooty moulds grow on 'honeydew' - a sweet, sticky liquid produced by aphids as they feed - leaves go black and plant growth is poor; b) They spread viruses on their mouthparts, such as the viruses of cucurbits: *Cucumber mosaic*, *Papaya ringspot* (watermelon strain) and *Zucchini yellow mosaic*; *Dasheen mosaic*; beans, *Bean common mosaic*.

Biology and Life Cycle

Males are rare or not produced in tropical countries. Eggs are not laid. Females give birth to living young without mating. The young are adult in 4-7 days, after moulting

four times. They then produce 4-6 young a day, up to 50 each. Because of this method of reproduction, populations grow rapidly, with many generations in a year.

Detection and Inspection

Look for groups of round, green (some may be light green, others dark green, almost black) insects on the underside of young leaves, on shoots and buds (photo, above). They are about 1 mm long, with long antennae about the length of the body, and two tubes at the rear called conicles. Sometimes winged forms occur, up to 2 mm long with prominent veins. It is difficult to see the detail of the body with the naked eye. Look for ants, they are often present (photo, right); they come for the honeydew.

Management

Natural enemies:

Aphid predators and parasites usually keep populations low. The most common are lady beetles (adults and larvae), syrphid flies (hover flies) larvae, lacewing larvae, and tiny parasitic wasps that lay their eggs in the adult aphids. The wasp larvae develop in the aphids eating the inside parts and turning the aphids into empty shells, called “mummies”.



Cultural control:

- Remove weeds from within and also outside the crop, but note that there are several hundred hosts of this aphid worldwide;
- Burn or bury the remains of crops after harvest;
- DO NOT plant down-wind from crops with aphids. Some aphids have wings, but they are not strong fliers and more likely to be blown onto new crops;
- Inspect crops often and regularly; destroy leaves heavily infested with aphids;
- Mulch the crop. With some mulches, aphids find it more difficult to distinguish the crop plants than if they were growing in bare ground.

Chemical control:

- If ants are present, kill them with boiling water, without damaging the crop plants. Without the ants, predators and parasites will bring about natural control;
- If insecticides are necessary, use:
 - soap sprays (5 tablespoons of soap in 4 litres water), or
 - vegetable oil (1 cup cooking oil; 2 cups water; 1 teaspoon dishwashing liquid. Dilute the mixture at 3 teaspoons per half a litre of water and spray on the infested leaves), or
 - commercial products with petroleum oil.These sprays work by blocking the breathing holes of insects causing suffocation and death. Spray underside of leaves: the oils must contact the aphids.
- Use synthetic pyrethroids (for example, lambda cyhalothrin or cypermethrin). READ INSTRUCTIONS BEFORE USE.
- Try the Papua New Guinea Derris variety or neem; get plants from MAL or Kastom Gaden Association, as well as the method for making the spray.