# Pacific Pests, Pathogens & Weeds - Fact Sheets

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# Bele (Abelmoschus) leaf roller (087)

Photo 1. Caterpillar of *Haritolodes deregata* rolling leaves of *bele*.

Photo 2. Caterpillar of the bele(cotton) leaf roller, *Haritolodes deregata,* showing the dark spots behind the head.

Photo 3. Caterpillar of the bele (cotton) leaf roller, *Haritolodes deregata.*

Photo 4. Adult bele (cotton) leaf roller, *Haritolodes deregata.*

Photo 5. Extensive damage to *bele* cabbage by the bele (cotton) leaf roller, *Haritolodes deregata.*

Photo 6. Curling and drooping of leaves attacked by the bele (cotton) leaf roller, *Haritolodes deregata.*

### Common Name

Cotton leaf roller, bele leaf roller

### Scientific Name

*Haritalodes derogata* (previously *Sylepta derogata*).

### Distribution

Worldwide. Asia, Africa, Oceania. It is recorded from Australia, Fiji, Papua New Guinea, Samoa, and Solomon Islands.

### Hosts

*Bele* (*aibika*, island cabbage or sliperi kabis, *Abelmoschus manihot*. The moth is also a pest of ornamental *Hibiscus*, cotton, okra, and some weeds.

## Symptoms & Life Cycle

The caterpillars roll the leaves, remaining inside the tunnel they create, eating the leaves at the edges and between the main veins.

Eggs are laid singly or in groups on the underside of the leaves. At first, the larvae stay together and feed on the undersides, only later staying alone inside folded leaves (Photo 1). From the second moult they have two dark spots just behind the head on the first segment of the thorax (Photos 2&3). After a short pupal stage, the adults emerge. Their wings are cream with a continuous line along the outer and back border of the wings, and dark-brown 'scattered' lines elsewhere (Photo 4). The wingspan is 30-40 mm. The life cycle of the bele leaf roller is about 30 days from egg to adult.

## Impact

The damage is extensive with broad-leafed varieties appearing to suffer more than those with deeply divided leaves (Photo 5). Curling, drooping and defoliation of leaves is common (Photo 6).

## Detection & inspection

Look for rolled leaves. Look for webbing around the caterpillar, which has two spots on the top of the segment behind the head. The spots are a characteristic feature of the bele (cotton) leaf roller.

## Management

NATURAL ENEMIES
Apart from spiders and praying mantids, there are few records of predators and parasites attacking the bele leaf roller.

CULTURAL CONTROL

Before planting:

- Do not plant next to crops that are already infested with the bele leaf roller.

During growth:

- If only a few plants are infested with the bele leaf roller, do the following:
  o Pinch rolled leaves between finger and thumb, squashing the caterpillar inside.
  o Prune the rolled leaves; remove the cuttings from the garden and burn them.

After harvest:

- Collect the plants and debris after harvesting the leaves for the last time, and burn them.

CHEMICAL CONTROL
If pesticides are necessary, use botanical (plant-derived pesticides) sprays first, as these will cause less harm to natural enemies, and cost less, than synthetic commercial products.

- Use neem, derris, pyrethrum or chilli. If these are used, add soap to help the chemical reach the caterpillars within the rolled leaves.
- Alternatively, use commercial biopesticides, e.g., spinosad (the product is called Success) or Bt -*Bacillus thuringiensis* var. *kurstaki* (the product is called Dipel).
- If using Dipel, note the following:
  - Ensure that Bt covers the plants; caterpillars will only die if they eat Bt.
  - Eggs are not susceptible to Bt.
  - Use Bt as soon as damage is seen.
  - Small larvae are more susceptible to Bt than fully grown ones.
- Synthetic pyrethroids are likely to be effective, but will also kill natural enemies.

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