

Extension Fact Sheet 33: Watermelon Worm



Common name: Watermelon worm. Other common names include cucumber moth, melon moth, pumpkin caterpillar, and cucurbit caterpillar.

Scientific name: *Diaphania indica*

Hosts: The moth attacks cucurbits and eats their leaves. Cucurbits are watermelon, cucumber, melon, pumpkin and snake gourd.

Damage

The caterpillars do the damage. After hatching, they roll the leaves with silken threads and eat the leaves between the veins. They also attack the flowers and reduce the number of fruits set. Young fruits are also attacked: the caterpillars damage the skin and cause the fruits to rot.

Biology and Life Cycle

The eggs are oval, about 0.7 mm long and 0.4 mm wide, thin walled and whitish. They are laid in small groups on the growing parts of the shoot, usually on the underside of the leaves or on buds and flowers.

The eggs hatch and the caterpillars emerge. They are almost clear, but soon become green. Large caterpillars have two white lines along the back (photo, left). When fully grown, they are about 20 mm long: some may be smaller, some larger.

After a while, the caterpillars turn into pupae, green at first then brown. The pupae are in folds of the leaves. They are about 12 mm long and 3 mm wide. The adults hatch from the pupae after about 8-12 days.

The adult is very obvious (photo, right). The wings are white with a wide brown border. When the wings are spread, they are about 25 mm wide. At the end of the body is a group of hairs, rather like a brush. The females wiggle this brush, possibly

to send out a chemical to attract the males. The life cycle from egg to adult is about 25 days.

Detection and Inspection

Look at the young leaves: look for leaves where the veins are still there, but the parts between have been eaten. Inspect the young fruits: look for signs of caterpillar damage. Look for caterpillar faeces or droppings.

Management

Natural enemies:

- Tiny wasps that are hard to see with the naked eye attack the caterpillars.
- Lacewings (photo, right) eat the eggs.
- It is important to think about these natural enemies when considering how to control *Diaphania*. If chemicals are used, it is best to choose those that do not kill these natural enemies. Preferably, use chemicals that are allowed under organic vegetable production; see below.



Cultural control:

- Make regular inspections of the crop, at least once a week. Check the young leaves, looking for those that are stuck together and those where only the veins are left. Look for faeces on the leaves. They are the signs that the caterpillars are present.
- Hand picking should be the first method of control. Look for rolled leaves: remove them, or squeeze the caterpillars inside. Check the flowers and the fruits for damage. If it is severe, consider using chemicals. But consider carefully which ones to use.

Chemical control:

Orthene (acephate) is being used by many farmers for the control of this worm, but it is not the best choice. Orthene is good for sucking insects as it has systemic activity; that means it enters the plant and moves inside it. It will kill caterpillars, but it will kill all insects, good as well as bad.

The following alternatives, made from bacteria, are recommended:

- Spinosad, also known as *Success*
- *Bacillus thuringiensis kurstaki*, also known as Bt

Pyrethrum and derris insecticides can also be used; these, too, are made from natural products. Pyrethrum comes from a member of the daisy family and derris is a shrubby legume. They are fast acting against insects and less harmful to the environment compared to many synthetic (commercial) products. They are broken down quite quickly by sunlight. BUT they will kill natural enemies of *Diaphania*. (See Kastom Gaden Association for derris cuttings.)