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Cabbage Webworm

Lepidoptera: Pyralidae, *Hellula rogatalis* (Hulst)

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Distribution

The cabbage webworm is found throughout the southern United States from Virginia to Florida and west to California. It is rarely a pest in northern climates. In eastern Virginia, it is a common pest on broccoli and cabbage, particularly late in the summer and fall.

Description

Egg. Eggs of the cabbage webworm are deposited singly or in small masses on terminal leaves of plants. When laid, they are oval, flattened, gray or yellowish green, and are 3/32 inches (0.3 mm) to 3/16 inches (0.5 mm) in length. Within three days, they will turn pink in color and hatch.

Larva. The young larva is yellowish gray with no stripes, but as it grows, it matures to a yellowish-gray with 5 dark stripes head to tail, a black head, and long yellow or brownish hairs. Larvae produce a lot of silk, in which they form webs on leaves for protection.

Pupa. Webbed cocoons containing yellowish-brown pupa are found in the soil and are 0.25 inches to 0.35 inches in length.

Adult. Adult moths have yellowish-brown front wings with white bands and a dark kidney shaped spot and grayish white hind wings. Adults are 0.7 to 0.8 inches in length.

Plants Attacked

In Virginia, the cabbage webworm is a common defoliator of broccoli. It also attacks several other crucifer crops including cabbage, collards, kale, mustard, radishes, rutabaga and turnips.

Damage

During fall, cabbage webworms become numerous enough to cause significant damage in Virginia. Initially, the larvae feed by mining the lower surface of leaves and will eventually begin to web and fold the plant's foliage. In young plants, cabbage webworms may cause enough damage to destroy the growing tip and buds of the plant. Occasionally, webworms may burrow into veins causing death of the leaf.

Life Cycle

In Virginia, the pest usually does not appear until late summer. There may be multiple generations per year. Eggs are laid when temperatures are between 68°F – 86°F, and hatch in about three days. The larval stage progresses through five instars in approximately 2 weeks. The duration of the cocoon is 5 – 5.5 days at 86°F. The moth that emerges can survive for 7 -14 days. One female adult can lay 150 – 300 eggs and will begin laying eggs 3-5 days after emerging and mating.

Cultural Control

Because cabbage webworms occur late in the season in Virginia, the simplest control is to plant early maturing cultivars before cabbage webworms become numerous enough to cause much damage. Some success has been reported using early mustard as a 'trap crop' to attract the cabbage webworm and reduce damage on the more valuable cabbage and broccoli crops.

Organic/Biological Control

Unlike many of the other lepidopteran pests occurring on cole crops such as diamondback moth, imported cabbageworm, and cabbage looper, there are relatively few natural enemies of the cabbage webworm. The webbing produced by this species helps to protect it from natural enemies. There are organic insecticide options to control cabbage webworm. Commercial formulations of *Bacillus thuringiensis (Bt)* as well as azadirachtins provide effective control as foliar sprays.

Chemical Control

Insecticidal control of cabbage webworm can be difficult due to the cryptic feeding of larvae as well as the webbing on leaves. To protect the rapidly growing terminal leaves or young forming cabbage heads, insecticides should be applied when this pest first appears and larvae are small. Insecticidal research studies conducted in Virginia have found many classes of insecticides to be efficacious against cabbage webworm. Pyrethroids, carbamates, insect growth regulators, as well as many new insecticides with unique modes of action such as indoxacarb, spinosad, spinetoram, chlorantraniliprole, metaflumizone, flubendiamide, pyridalyl, and others achieve great control of this pest. Control of most insects on cole crops is best achieved with the addition of a spreader-sticker or adjuvant in order to ensure proper coverage of the waxy leaves of these crops.