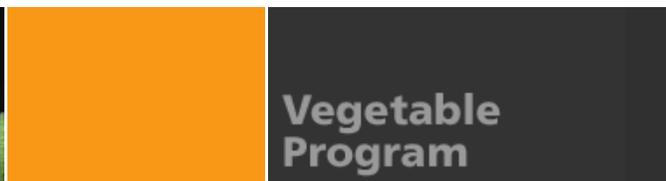


Vegetable Program

Insect Management



Insects

- Aphid, Asparagus
- Aphid, Cabbage
- Aphid, Corn Leaf
- Aphid, Green Peach
- Aphid, Melon
- Aphid, Pea
- Aphid, Potato
- Armyworm, Common
- Asparagus Beetle, Common
- Asparagus Beetle, Spotted
- Asparagus Miner
- Cross-Striped Cabbage Worm
- Cabbage Looper
- Cabbage Maggot
- Carrot Rust Fly
- Carrot Weevil
- Colorado Potato Beetle
- Corn Earworm
- Cucumber Beetle, Spotted
- Cucumber Beetle, Striped
- Cutworm, Black
- Cutworm, Variegated
- Diamondback Moth
- European Corn Borer
- Fall Armyworm
- Flea Beetle, Crucifer

Imported Cabbageworm



Imported Cabbageworm, *Pieris rapae*, partly grown and full grown caterpillars on cabbage.



Imported Cabbageworm, *Pieris rapae*, adult butterfly.

This familiar white butterfly can be seen in daytime fluttering around cole crop fields. Each forewing has a dark border and one or two round black spots. Eggs are laid singly on the underside or top of leaves, about 1/8 inch in length, light green and slightly elongated, standing upright. The caterpillar, called imported cabbageworm, is gray-green, slightly fuzzy, and sluggish. Feeding and resting occur on the underside of leaves, and larvae feed more heavily in the head of cabbage or broccoli as they grow. The crysalis (pupa) will be green or brown, smooth with three pointed ridges on its back, and attached to a leaf. There are 3-4 generations per year in central New England.

Quick Identification Cues for the three key caterpillars of Brassica crops in the Northeast

Diamondback moth caterpillar: very wiggly when poked, pointed on both ends, not fuzzy, only grows to about 1/2 inch. You may find white silken cocoons, with a green full-grown caterpillar or a brown pupa inside.

Imported cabbageworm: gray-green, slightly fuzzy, and sluggish. Grows to > 1 inch and favors

Flea Beetle, Eggplant
Fungus Gnats
Hornworm, Tomato
Imported Cabbageworm
Japanese Beetle
Leafhopper Aster
Leafhopper, Potato
Leafminer, Beet
Mexican Bean Beetle
Mite, Twospotted Spider
Onion Maggot
Onion Thrips
Pepper Maggot
Sap (Picnic) Beetle
Seedcorn Maggot
Squash Bug
Squash Vine Borer
Stalk Borer, Common
Stink Bug
Tarnished Plant Bug
Thrips, Western Flower
Whitefly, Greenhouse
Wireworm

the center of the head as it gets larger. Produces wet green frass (droppings).

Cabbage looper: light green, smooth, 'loops' up like an inchworm as it moves, grows 1 ½ to 2 inches. Eats big holes in leaves.

Field Scouting for caterpillars

It is especially important to check cabbage or broccoli plantings as they begin forming heads. Greens such as collards, kale, and Chinese cabbage should be scouted earlier, since all leaves are marketed. Feeding damage can be found on the underside of leaves or in the center of the plant where heads are forming. Look for tiny feeding holes, clustered together. Often it is easier to spot the feeding damage first, and then find the caterpillar. Check throughout the field and note how many have one or more caterpillar (ie, are "infested"), then calculate the percent of plants infested. Spray if the following threshold is reached.

Action thresholds for caterpillars in Brassicas:

Crop & Stage	% Infested Plants
Cabbage & Broccoli, Cauliflower pre-cupping (before head formation begins)	35%
Cabbage & broccoli head formation to maturity	15%
Cauliflower After heading	10%
Kale, collards & other greens	10-15%

These thresholds are based on research that showed that spraying whenever this level of infestation is reached results in 98-100% clean heads, the equivalent of weekly sprays but with far fewer insecticide applications.

Insecticides

See [2010-2011 New England Vegetable Management Guide](#) for insecticides. There are many effective options. Use selective products to protect beneficials that keep aphids under control, and also consume insect eggs and small caterpillars.

Classical Biological Control

In 1988, a braconid wasp (*Cotesia rubecula*) was imported from China by Roy Van Driesche of the UMass Plant Soil and Insect Science Department, and released at 17 locations in Massachusetts. It has become well established; surveys conducted in 2007 and 2009 found parasitized caterpillars at 100% of the sites sampled, with an average of 75% parasitism. The once common parasitoid, *C. glomerata*, is virtually gone. For more details, see [article](#).

Cotesia rubecula parasite of Imported Cabbageworm.



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