XHT1032

University of Wisconsin Garden Facts

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Provided to you by:

Imported Cabbageworm

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The imported cabbageworm (Pieris rapae) is a lepidopteran insect and the most important cole crop pest in Wisconsin. All cole crops, including cabbage, broccoli, Brussels sprouts, cauliflower, and rutabaga, are susceptible to attack by this insect.

An imported cabbageworm larva.

Appearance: *Imported cabbageworm adults are the white butterflies commonly seen flying in great numbers on warm summer days. Female butterflies have 2 black dots on each forewing, while the smaller males have only one dot per wing. Larvae are velvety green worms up to one inch long, with a faint yellow stripe running down the back.*

Symptoms and Effects: *Imported cabbageworm larvae feed on cole crop leaves between the large veins and midribs. Feeding occurs primarily on the upper leaf surface near the midrib producing large, irregular holes. As older imported cabbageworm larvae move toward the center of the plant, they may remove all but the main leaf veins. Severe feeding damage will stunt cabbage and cauliflower heads. Larval damage to the developing buds on young cabbages can cause heads to abort. Imported cabbageworm damage to root crops is generally of little economic importance. The copious quantity of greenish-brown frass (i.e., fecal material) produced by larvae can also be a problem as it contaminates heads and foliage.*

Life Cycle: *Imported cabbageworms overwinter as pupae on plant debris. Butterflies emerge in early May and begin laying small, yellow-orange eggs singly on any above-ground plant part. Within a week, the eggs hatch. The larvae develop on cruciferous weeds and early-planted cole crops. The second generation butterflies emerge in mid-July and larval development occurs almost entirely on cultivated cole crops. This generation causes the most damage. There are usually three generations per season with the second generation being the most damaging to cole crops grown in Wisconsin.*

Scouting Suggestions: *Scout fields weekly throughout the season for damage. Check plants carefully, even if no feeding damage is apparent, to look for eggs that will hatch into small caterpillars several days to a week later. Examine the lower leaves of plants for the larvae of each pest. Although feeding damage and fecal material are signs of activity, it's better to rely on larvae counts to determine the level of infestation. Caterpillars cause varying amounts of damage depending on the maturity of the plant, so the need for treatment changes as the crop grows. Keep a record of the life stage and the percentage of plants infested. This information will be useful for monitoring whether the population is increasing or decreasing.*

Treatment thresholds are well established and are based on the percent infestation by any lepidopteran species and varies based on the stage of crop development. Cabbage, broccoli, and cauliflower in the seed bed are particularly susceptible to damage and therefore when 10% of the

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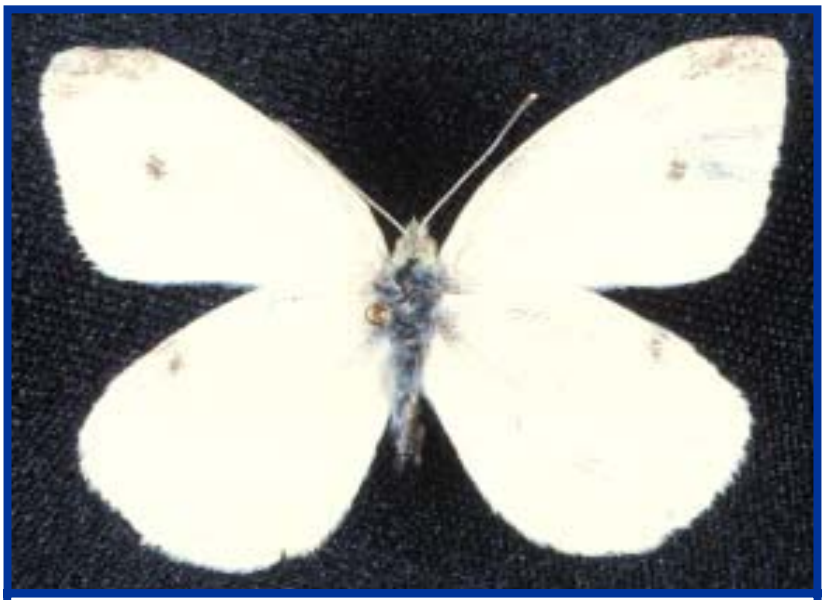
plants are affected with cabbage loopers, diamondback moths, or imported cabbageworms, control is warranted. For cabbage between transplant and cupping, the ecomonic threshold (ET) is raised to 30%. Once the plants have begun to cup, until early heading, if greater than 20% of plants are infested, treatment is warranted. From early heading until harvest, the threshold drops back to 10% to protect the market quality of the produce. For broccoli and cauliflower between transplant and first flower or curd, the threshold is increased to 50%. However once flowers or curds begin to develop, the economic threshold drops back to 10% to maintain a high level of quality.



An imported cabbageworm adult.

Control

Cultural: *Effective integrated pest management (IPM) programs for imported cabbageworm should be designed to prevent damage, encourage natural control, and avoid resistance. The use of transplants that are free of larval contamination is a key step in avoiding damage. Spring plowing of debris and clean culture are good insurance against potentially overwintering imported cabbageworm. Floating row covers can provide a physical barrier to imported cabbageworms in small cole crop plantings. Natural controls are frequently quite effective in preventing buildups of cabbageworm populations.*

Chemical: *Bacillus thuringiensis var Kurstaki or Aisawai applied to early instar larvae can be very effective in controlling imported cabbageworms. Chemical insecticides can also be effective in controlling caterpillar pests of cole crops. Refer to University of Wisconsin-Extension publication A3422 "Commercial Vegetable Production in Wisconsin" for specific insecticide recommendations. Target early instar larvae and insure good plant coverage to improve efficacy when using insecticides. Use pest-specific insecticides in early to mid-season when imported cabbageworms are prevalent so that natural enemies are conserved. Resistance is a key concern with all lepidopteran pests on cole crops.*

For more information on cabbageworm: *See UW-Extension Bulletin A3422, or contact your county Extension agent.*

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A complete inventory of University of Wisconsin Garden Facts is available at the University of Wisconsin-Extension Horticulture website: wihort.uwex.edu.