

*B*lack cutworm

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Black cutworm (*Agrostis ipsilon*) larvae feed on newly emerged vegetable crops. The worms are active feeders, clipping many seedlings at or below the soil line in a single night. They prefer crops sown as seed (rather than transplants); susceptible crops include beets, carrots, cucumber, leafy greens, melons, peas, potatoes, pumpkins, snap beans, squash, and sweet corn. If not controlled, these pests can destroy approximately a third of a planting. Black cutworms are particularly problematic to fresh-market growers and home gardeners.

Appearance

The dark gray to black larvae have a greasy appearance and a grainy texture. Mature larvae grow to 1½ inches long. When disturbed, cutworms curl up into a tight C-shape.

Adults are gray moths that have a series of distinctive dark markings on their forewings (including a dagger-shape on each outer forewing) and lighter colored hind wings.

Life cycle

The black cutworm doesn't overwinter in Wisconsin. Instead, the adult moth migrates north on storm fronts in early spring, usually in May and early June. Females lay eggs on low-growing vegetation such as chickweed, curly dock, cruciferous weeds, and plant residue. Larvae hatch about 5–10 days later and over the course of a month will pass through six instars (growth stages) before pupating. Larvae migrate from mature vegetation to seedlings when they're about ¾ inches long. About 2 weeks after entering the pupal stage, adult moths emerge, mate, and repeat the cycle. In Wisconsin, three generations emerge each year.

Symptoms

Newly hatched larvae feed on leaves but are unable to chew entirely through, creating a "window pane" effect. As they mature, they create small pinholes in the leaves; large infestations of cutworms can completely defoliate plants. During the fourth instar, larvae begin cutting plant stems. The ½-inch worms chew through the stem at or just below the soil surface. This type of injury is common during extended periods of dry weather. If plants are larger, larvae may not be able to cut through the stem but will burrow into it below ground level, causing plants to wilt and die.



Young cutworms feed on leaves, creating small pinhole damage.



Cutting damage with a black cutworm larva curled up in a characteristic C-shape.



Mature cutworms grow to 1½ inches long.

Scouting suggestions

Timely detection is critical for insecticide treatments to be effective or economical. The best way to do this is to monitor for the arrival of the moths. Watch the Wisconsin Department of Agriculture, Trade & Consumer Protection (DATCP) pest bulletins (pestbulletin.wi.gov) for their reports.

Alternatively, monitor for the return of the adults using a black-light trap. When 9 or more moths have been caught on each of two consecutive nights, begin calculating degree day accumulation.

Degree days offer a way to track insect development based on temperature and will help you determine when the damaging fourth instar will appear. Calculate the daily total using the formula below and keep a running total. Expect leaf cutting to begin at 300 degree days and end around 1000.

<p>Degree days = $\frac{\text{daily high} + \text{daily low}}{2} - 50$</p> <p>Use a maximum of 86°F for the daily high and a minimum of 50° for the daily low.</p>
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As a second check, begin scouting fields weekly when plants emerge, looking for evidence of spotty emergence. If seedlings aren't coming up evenly, dig the soil to spot check for cutworms.

Control

Non-chemical controls

A number of parasitic wasps, flies, and predaceous ground beetles help keep cutworm numbers down. Birds also help control the population by feeding on the larvae.

Cutworms are most problematic in low, wet, grassy areas. Since female moths prefer to lay eggs in weedy areas, keeping weeds controlled will lessen the possibility of damage. Avoid planting susceptible crops in low, wet areas or in rotations following sod. Cultivate as

needed in fall and spring to disrupt the cutworms' life cycle and to destroy host weeds.

Chemical controls

If non-chemical control measures aren't sufficient for adequate control, begin treating at the first sign of pests cutting and repeat every 7 days until 1000 degree days are reached. For a complete listing of available insecticides, refer to the latest copy of Extension publication *Commercial Vegetable Production in Wisconsin* (A3422).

Economic treatment thresholds for black cutworms have been developed for the following crops:
 —Snap bean = 2 larvae / row foot
 —Potatoes = 4 larvae / row foot
 —Sweet corn = >5% of the plants damaged
 —Leafy greens = <3% of the stand affected.

Black cutworm activity at various degree days

Degree days	Life stage	Activity
0 (biofix)	Intensive moth capture	Egg laying
90	Egg hatch	—
91–311	1st – 3rd instar	Leaf feeding
312–364	4th instar	Cutting begins
365–430	5th instar	Cutting
431–640	6th instar	Cutting slows
641–989	Pupa to moth	Cutting stops



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