

Cutworms, Wireworms, Leaf Miners, Armyworms, and Webworms in Table Beets

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Insects are occasional pests of table beets. At high populations, they may cause defoliation and yield loss. However, the most typical concern is reduced marketability of fresh market beets sold with their tops. Below is a summary of the pests that you may encounter in table beets in New York:

BLACK CUTWORMS

The larvae feed on newly emerged vegetable crops and often clip many young plants at or below the soil line each night. Crops grown from seed are more prone to damage than transplants. Scout fields near any woods or weedy hedgerows that border fields. Look closely for plants that have been sheared off at ground level or areas where plants are not emerging well. There may or may not be cut leaves laying nearby. Cutworms sever young plants near the soil line and pull the plant into the ground as they feed. In 2019 in western, NY severely infested fields had beautiful stands of beets that seemed to disappear overnight! If you dig up the cut off plants, you will likely find cutworms in the soil near the base of the plant or just underground. You may also see holes where the worms come in and out of the soil. The larvae are nocturnal feeders, however, on rainy days you may see cutworms coming out of their holes and feeding during the day. The larvae curl into a characteristic C-shape when disturbed.

Black cutworm moths fly up from the south and lay their eggs on weeds near field borders. The larvae then crawl to the crop field. Thus, damage is typically seen near field borders. The best control is to apply an insecticide along the edges of the field where the caterpillars are feeding. It is usually not worthwhile spraying the entire field; however, if cutworm damage is detected deeper within large fields, then the entire field could be treated. In a perfect world, insecticides would be applied in late evening or at night so that the chemical would directly contact the caterpillars.

Several pyrethroid products are labeled in New York for the control of cutworms. These include Sniper LFR (bifenthrin) and Hero (bifenthrin+zeta-cypermethrin). For organically grown crops, our current best thinking is that a mixture of azadirachtin and pyrethrin provides the best chance of control. Contacting the caterpillars with the spray might improve efficacy, so spraying in the late evening or night might be beneficial. While *Bt's* (*Bacillus thuringiensis*) are labeled, the caterpillars must ingest the product and it may not be very effective on large caterpillars.

[For more information on black cutworm biology and management, see:](http://labs.russell.wisc.edu/vegento/pests/black-cutworm/)
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WIREWORMS

Wireworms are the larvae of click beetles. The adult beetles have a mechanism on their back that enables them to flip themselves over if they are upside down. The flipping-over process makes a clicking noise, hence the name. The larvae are the stage that feed on crop roots and germinating seeds and damage crops. Wireworms (the larvae) have cylindrical, hard bodies that are tan to copper color. Click beetles have a long life-cycle, lasting 2 to 6 years. All stages overwinter and populate fields at any given time. They move up and down in the soil profile depending on soil conditions.

High-risk fields include:

- Long-term grass, pasture, or grass hay
- Planted after small grains (wheat, barley)
- Weedy cultivated fields
- Red/sweet clover rotations more than one year
- Some wireworm species are worse on heavy, wet soils

Wireworm management:

- Do not plant susceptible crops in infested fields
- Avoid rotations with grasses and pastures
- Sampling for wireworms – fall/spring; sifting soil with ¼ inch hardware cloth
- Bait stations, see: <http://www.omafra.gov.on.ca/english/crops/facts/00-047.htm>
- Pheromone traps for monitoring adults
- Entomopathogenic nematodes (EPNs). The nematodes arrive in wax worm hosts and must be rinsed-out through a strainer into the tank water. CCE ENY Commercial Horticulture Program has tested EPNs in beets and other root crops and documented significant reductions in wireworm populations. For more info: <http://www.alfalfasnoutbeetle.org>. If you are interested in testing EPN's on your farm, contact Teresa Rusinek or Chuck Bornt of the CCE ENYCHP <https://enych.cce.cornell.edu/> or in the region served by CCE Cornell Vegetable Program <https://cvp.cce.cornell.edu/> in western, NY contact Julie Kikkert or Robert Hadad.

BEET/SPINACH LEAFMINERS

Leafminers are the larvae of flies that emerge from the soil in May to June. The flies lay clusters of white, cylindrical eggs on lower leaf surfaces. Leafminer larvae burrow or mine between the leaf surfaces. Damage first appears as tunnels meandering across leaves and eventually cause large blotches of mined leaf areas. The mature larva cuts a hole in the leaf, drops to the ground to pupate and emerges 2-4 weeks later as an adult fly to repeat the cycle.

Leafminer Management:

- Crop rotation 2-3 years
- Weed management: chickweed, lambsquarters, nightshades, pigweeds, pliantain
- Barriers – row covers
- Early detection – scout for eggs and early damage
- Treat if 50 percent of the plants have eggs or early leafminers – if selling tops
- Entrust SC (spinosad) or other labeled product

BEET ARMYWORMS

Beet armyworms are an occasional pest of table beets in New York, as they do not overwinter here. The moths arrive from southern states during the period of July through harvest. Pheromone traps can be used to detect moth activity. The adult females lay clusters of 50 to 150 eggs on the undersides of leaves. Eggs are oblong and appear white to greenish. Young larvae are pale green or yellow, but eventually acquire pale stripes. Larvae vary in color, and have a characteristic black spot on either side. Larvae will reach about 1 ¼ inch long. The larvae feed for a period of 2 to 4 weeks.

Management options are to monitor adult flights and to scout for ragged holes on the foliage. High populations can defoliate beets. Pesticides labeled for control include Coragen, Lannate, Radiant, and Entrust SC.

BEET WEBWORM SPECIES

Webworms are Southern pests, but may occur in NY in warm months. Female moths lay eggs on undersides of leaves near veins. The larvae can cause severe damage in large numbers because they skeletonize leaves and defoliate plants. Larvae are green with numerous hairs. They may spin a web, causing leaves to fold. Labeled pesticides include: Radiant, Avaunt, Entrust, Lannate, some Bt's. For more information: <https://plant-pest-advisory.rutgers.edu/hawaiian-beet-webworm-returns/>