Organic Solutions for Cutworms

A Factsheet from Toxic Free NC

About Cutworms

Cutworms are caterpillars that live in the soil, and eat the stems of young seedlings and transplants of all garden crops. The seedlings or transplants may be entirely eaten, or may be felled like tiny trees at soil level, almost always overnight.

Some species may climb up older plants and feed on leaves, or make holes in lettuce and cabbage heads. Unless found and killed, a single cutworm can cause new damage night after night. A heavy or uncontrolled cutworm problem can kill entire crops.

Cutworms in the garden can be very frustrating when you are trying to get young crops going at any time of year, but you can beat them at their game using the tips below.

Sustainable pest management strategies usually work best when used together. Think about your garden, your resources, and your time, and put several of these tips together into a plan that works for you.

Cutworm and damaged seedling.
Photo credit: W.M. Hantsbarger.

Identifying Cutworms

Cutworms are the caterpillar stage of several different species of brown or gray moths. The adults do not damage crops. Eggs are dome shaped and may be found alone or in groups, but they are very tiny and hard to see. The caterpillars are 1-2 inches long, smooth-skinned, and gray to brown in color with a somewhat “greasy” appearance. They curl up into a C shape when disturbed. At night hey may be found on the soil surface or munching on young seedlings. By day they may be found just under the soil surface near damaged seedlings.

Cutworm close-up.
Photo credit: Frank Peairs, Colorado State University.

Life Cycle

Eggs are laid in early May to early June. The caterpillars hatch after a few days and feed for 3-5 weeks before digging into the soil to pupate. In North Carolina there are typically 2-4 generations per year.

Depending on the species, they may spend the winter as eggs on weeds and leftover dead plants, or as larvae or pupae in the soil. Species that have spent the winter underground may come out during the first warm days of early spring.

Cutworm eggs.
Photo credit: Frank Peairs, Colorado State University.

Prevention

1) Protect seedlings with collars. At transplant time you can put a "collar" of paper, cardboard, plastic, or metal around the stems of your plants to keep cutworms out. These should fully circle the stem of the plant, and be large enough for the stem of the plant to grow. Collars should extend at least an inch above and below the soil.

Many gardeners use toilet paper rolls, plastic soda bottles, tuna cans or other household "trash" to make these collars. This is a great strategy for small gardens, but may be hard to do in much larger areas.

2) Plant more than you need. When planting seeds directly into the garden, sow the seeds thickly and plan to thin them to their final spacing later. Cutworms may kill some of your seedlings, but if you scout them out and kill them, there will still be plenty of seedlings left to grow. Likewise, if you are transplanting seedlings into the garden, grow a few extra and keep them on hand. You may lose a few to cutworms early on, but once you have scouted and killed them, you can quickly replace them with one of your extra transplants.

Cutworm adult moth.
Photo credit: Mark Dreiling.

3) Keep the garden area weed-free. Cutworms eat and lay eggs on many varieties of plants, not just crops. Weedy and grassy areas in and around the garden can be important egg laying sites and food sources for them. Remove weeds and till at least 10 days before planting your crops.

Maintain a grass-free and weed-free zone around the garden to keep cutworms from migrating in from the neighboring lawn. Keep the garden weed-free during the growing season and throughout the fall and winter. Remove and compost leftover dead plants, and don't let them hang around the garden providing food for cutworms.

Getting Rid of Cutworms Without Toxic Chemicals

1) Scout and hand pick. Scout the garden every morning early in the season, or anytime you have new seedlings or transplants. When you see cutworm damage, dig shallowly around the base of the affected plant with a stick or trowel until you find the cutworm, usually within 2-3 inches from the stem. Look closely – the brown-gray worms will be very well camouflaged in the soil.

When you find them, kill them by snipping in half with scissors or dropping into soapy water. Trying to squish them in the soft garden soil may be hard, and only bury them deeper. You can also scout the garden at night with a flashlight, when you may find the cutworms eating plants or moving along the soil surface.

2) Attract natural enemies. You can attract parasites and predators of the cutworm to your garden by creating homes for beneficial insects nearby. Pollen and nectar plants with small flowers, such as wildflowers and herbs, will attract parasitic wasps and flies to the garden. Other helpful creatures such as toads, ground beetles, spiders, lacewing larvae, and even birds may also make their homes in perennial herb and wildflower beds and shrubs.

3) Apply parasitic nematodes to the soil. The parasitic nematode *Steinernematidae carpocapsae* has been shown to be an effective control for cutworms. Nematodes must be purchased from trusted dealers and applied carefully according to directions. This can be an expensive solution and may not be appropriate for the small garden. Search seed catalogs and gardening stores with well-stocked organic sections.

4) Bioinsecticide BTK. BTK (Bacillus thuringiensis, var. kurstaki) is a type of bacteria. When eaten by the cutworm, BTK makes a poison in the caterpillar's gut. This causes the pest to stop feeding and eventually die. It is somewhat selective, killing many caterpillars but not harmful to other creatures.

Spraying seedlings is not a good way to control cutworms since the cutworms can easily kill your plants before they have a chance to eat enough BTK to kill them. However, you can make a bait with BTK by mixing it with bran or rolled oats and molasses. Sprinkle the bait on the planting area several days before planting. Since the area will have no plants yet, the cutworms will feed on the bait and hopefully die before your plants go in.

To find BTK, check gardening and seed catalogs. Make sure to check the BTK product you select is on the Organic Materials Review Institute's list of products approved for certified organic farms. Because cutworms spend most of their time hiding underground, the use of other insecticides is not recommended for cutworm control.

Sources

Ellis, Barbara and Bradley, Fern Marshall, editors. The Organic Gardener's Handbook of Natural Insect and Disease Control: A Complete Problem-Solving Guide to Keeping Your Garden and Yard Healthy Without Chemicals. Rodale Press, 1996.

Flint, Mary Louise. Pests of the Garden and Small Farm: A Grower's Guide to Using Less Pesticide, 2nd Edition. University of California Press, 1998.

"How can I organically control cutworms?" ATTRA: National Sustainable Agriculture Information Service. Viewed March, 2012: [link]

"Cutworms." Insect and Related Pests of Vegetables. Center for Integrated Pest Management, North Carolina State University, NC Cooperative Extension Service. Viewed March, 2012: [link]