

Tomato Hornworm

Manduca quinquemaculata (Haworth); Family: Sphingidae



Tomato hornworm.
Photo by Whitney Cranshaw,
Colorado State University, Bugwood.org



Adult moth.
Photo by Jim Occi, BugPics, Bugwood.org

Description

The tomato hornworm is a large, pale green caterpillar with white and black markings. It reaches 3 1/3 to 4 inches long, when mature. A brown form also occurs, but is usually less common. The name "hornworm" comes from the fact that these caterpillars have a projection or spike on one of the last abdominal segments.

The adult, called a sphinx moth or hawk moth, is a medium to large, heavy-bodied, and has narrow front wings. The body is spindle-shaped, tapering at both ends, and the antennae are fairly thick. The adult is a mottled gray-brown color with yellow spots on the sides of the abdomen. The wing spread is 4 to 5 inches.

Injury

The hornworm caterpillar feeds on the leaves and new stems of the tomato plant. During July and August they also occasionally feed on the tomato fruits. Hornworms are often noticed in the home vegetable garden because of their large size, or because the foliage of the plant just "disappears."

Life History

In late spring, the adult moth lays eggs on the undersides of tomato leaves. The eggs hatch in 6 to 8 days, and the larva passes through 5 or 6 stages, reaching full growth in 3 to 4 weeks. The full-grown larva then burrows into the soil and transforms into the pupal stage. The pupa may remain in the soil all winter, with the adult moth emerging the following spring, or if the weather conditions are suitable, the moth may emerge in 2 to 4 weeks. The emerging moth makes its way to the soil surface and mates, and then females deposit eggs on the tomato plants for the next brood of hornworms.

Management

There are a number of natural factors that help to control the hornworm. One of the most common parasites in home gardens is a small wasp. Occasionally hornworms are seen with a number of white projections protruding from their bodies. These are the cocoons of the small parasitic braconid wasps. The wasp larvae

feed inside the caterpillar and kill the host upon emergence.

Control is most effective during July and August. Hand picking the hornworms on infested plants in the garden gives good control, and is especially useful in small gardens.

If hornworm caterpillars become too numerous, insecticides registered in New York State in 2009 for home garden use include: Bt (*Bacillus thuringiensis* ssp. *kurstaki*), carbaryl, kaolin clay (for suppression only), permethrin, pyrethrins with other ingredients, or spinosad. Check the product label to make sure that it can be used on tomato, for hornworms. Also check the label for the Days to Harvest, to determine the minimum number of days to wait before picking tomatoes for use, after application. For control using Bt, apply during the time when caterpillars are still small.

Prepared 11/1977 by: Carolyn Klass, Senior Extension Associate, Dept. of Entomology, Cornell University
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