

Tobacco Hornworm

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FIG. 1

Type Pest: chewing insect (*Manduca sexta* Linnaeus)

Type Metamorphous: complete (egg, larva, pupa, adult stages)

Plants Affected

- Tomato, tobacco, eggplant, pepper, potato, datura and some weeds

Period of Primary Occurrence: late April through August

- Over the spring growing season
- Tobacco hornworms can also be a problem on fall grown tomatoes

Identifying Characteristics of Insect Pest

EGG STAGE

- Female moths deposit greenish-yellow eggs individually on the undersides of host plant leaves (Fig. 2)
- Eggs hatch in about 7 days (depending on temperatures and other conditions)

CATERPILLAR STAGE

- 3 – 4" long when full size
- Pale green caterpillar with 7 straight oblique white lines laterally, white lines are edged with black on upper edge.
- Caterpillars develop through five stages (instars) for 3 – 4 weeks until they pupate 3 – 4" deep in the soil
- One of the last abdominal segments has a red colored horn-shaped structure — gives this insect its name

PUPAL STAGE (Fig. 6 & 7)

- Winter is spent as a pupa in the soil
- Pupa is about 2" long, dark brown in color and spindle-shaped, with the encased mouthparts prominent and separated from the body, appearing like a handle (Fig. 6)
- Unless the pupa overwinters, adults can emerge in about 3 weeks, producing two generations per year



FIG. 2



FIG. 3



FIG. 4

ADULT STAGE

- Adult stage is a large moth (sphinx moth)
- Moths are grayish colored (Fig. 4 & 5)
- Abdomen marked with six orange-yellow spots
- Moths are large-bodied with a 4 – 5" wingspan that resemble humming birds in flight as they hover around flowers from which they obtain nectar at dusk
- Adults have siphoning mouths and feed on nectar
- Adults are attracted to lights at night

OFTEN CONFUSED WITH:

TOMATO HORNWORM *MANDUCA QUINQUEMACULATA* (HAWORTH)



FIG. 5



FIG. 6



FIG. 7

TOBACCO HORNWORM	TOMATO HORNWORM
Common in southern US and along Gulf Coast	Common in northern states
Five orange-yellow spots on abdomen	Eight whitish or yellowish 'V' shaped marks laterally - pointing anteriorly. The 'V' is not edged in black

LINK: <http://entomology.ifas.ufl.edu/creatures/field/hornworm.htm>

Description / Symptoms

- The caterpillar stage is the damaging stage
- Caterpillars feed on the leaves and stems of the tomato plant (Fig. 3)
- Caterpillars leave dark green or black droppings

Best Management Practices (BMP)

CULTURAL CONTROL

- Hand picking is an effective control in small gardens
- Plants will continue to grow and produce under light to moderate infestations

BIOLOGICAL CONTROL

- This insect is parasitized by various insects including a small braconid wasp
- Larvae of braconid wasp will kill the hornworms when they emerge from their cocoons
- Leave parasitized caterpillars alone as the newly emerged braconid wasp adults will seek out other hornworms to parasitize
- The bacterium *Bacillus thuringiensis* (commonly known as Bt) is effective as a spray if it is used against young larvae

CHEMICAL CONTROL

- Several insecticides provide effective control of tomato hornworms

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Use pesticides only according to the directions on the label. Individuals who use chemicals are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. If the information does not agree with current labeling, follow the label instructions. The label is the law.

Always remember to read and heed six of the most important words on the label: "KEEP OUT OF REACH OF CHILDREN"

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