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## Sphinx Moth (Hornworm)

Most gardeners have encountered a sphinx moth at one time or another. The tomato hornworm is a sphinx moth larva and any vigilant tomato grower has plucked a few of these hungry green caterpillars from their tomato plants. Others may have observed adult sphinx moths feeding on sacred datura, petunias, thistles, evening primroses, honeysuckle, verbena, salvia, Nicotiana, four-o'clocks, and other nectar producing flowers. Sphinx moths are also known as hawk moths and hummingbird moths. In southeastern Arizona, 49 species of sphinx moths have been collected. While there may be no scientific data for Yavapai County, it is suspected there may be at least 20 species here.

In general, the life cycle of sphinx moths is similar for most species. The pupae overwinter in the soil in a 1½ to 2-inch-long brownish case. When handled under warm conditions, a pupa will often begin to move. Adults emerge in spring or early summer then mate and lay eggs on suitable host plants for their species. Upon hatching, larvae often initially feed in groups then become solitary as they mature. After feeding for 6 to 8 weeks, the larvae burrow into the soil to pupate. Some species of sphinx moths are known to have up to four generations per year. The number of generations varies by species, location, and climate.

The tomato hornworm (*Manduca quinquemaculata*) and the tobacco hornworm (*Manduca sexta*) are both sphinx moths. The word "hornworm" describes the distinctive pointed structure on the larvae's posterior. The tomato hornworm larva is green with diagonal white lines on the side of each segment that form L-shapes. The adults are large gray moths with a wingspan of five inches. They have four yellow-orange patches on each side of their abdomen. The tobacco hornworm larva is also found on tomatoes but has a red "horn" and straight diagonal stripes. Both feed on tomatoes, peppers, and other Solanaceous plants. The larvae of each species can reach four inches in length.

Crop damage is caused by feeding larvae (caterpillars). Experienced tomato growers monitor for damage and frass (droppings). The bigger the larva, the bigger the frass pellets. Follow the frass trail to find the larva. The larvae are usually in the interior of the plant during daylight hours. Hand picking the larvae is the best control option for protection of home gardens. Additional caterpillar control is facilitated by various wasp and fly parasitoids. This is a good reason to limit pesticide use in your garden.

Another common species in our area is the white-lined sphinx moth (*Hyles lineata*). The larvae of this species feed on a wide variety of native plants. The adult has distinctive pink patches on its underwings and is a very common visitor to flower gardens. During years when sphinx moth larvae are abundant and large migrations have occurred in the desert, there have been reports of dangerous road conditions for vehicles due to an "oil slick effect". This could be an urban legend, but it sounds feasible and sensational enough to make news.

The Great Ash Sphinx Moth (*Sphinx chersis*) larva has been seen on ash trees. It is very similar in appearance to the tobacco hornworm, but does not have a red "horn". There are many species of sphinx moths and several are attracted to a very specific host plant or plant family. Examples include catalpa, poplar, cottonwood, incense cedar, juniper, mints, desert willow, and many other species that grow in our area.

Many people observe adult sphinx moths gathering nectar in the evening from flowers in their yards. These moths are often mistaken for hummingbirds as they also have a distinct "whir" to their wingbeats. Watch for them going from flower to flower with their long, coiled proboscis probing each newly opened flower as they go.



Tomato hornworm (*Manduca quinquemaculata*, Ward Upham, Kansas State University, Bugwood.org).



Tobacco hornworm (*Manduca sexta*) on tomato plant, Mary Barnes.



Tomato hornworm pupa (*Manduca quinquemaculata*, Paul Choate, University of Florida).



Sphinx moth frass (probably from a tobacco or tomato hornworm, Whitney Cranshaw, Colorado State University, Bugwood.org).



Male tomato hornworm adult (*Manduca quinquemaculata*, Wikipedia: [https://en.wikipedia.org/wiki/Manduca\\_quinquemaculata](https://en.wikipedia.org/wiki/Manduca_quinquemaculata)).

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