

Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants and Extension Personnel

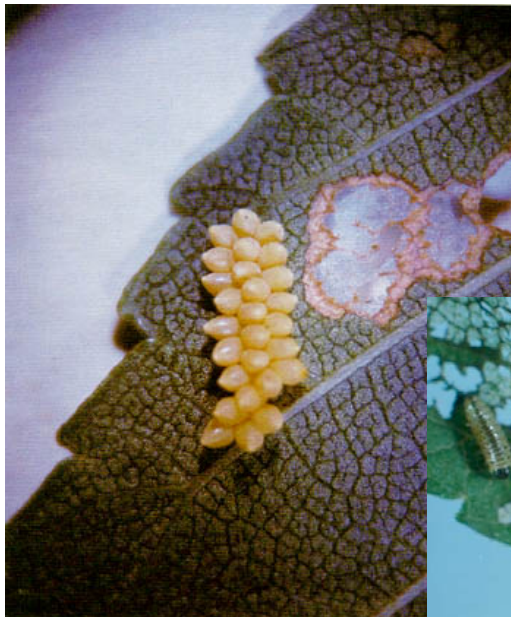


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Elm Leaf Beetles

We have had a number of reports of elm leaf beetles defoliating elm trees in central Kansas this past week (Fig. 1). It appears to have been a good spring for the first generation and the more damaging second generation is now well under way with all life stages present on the trees. Eggs are yellow and typically laid in a cluster of two or three parallel rows on the underside of leaves (Fig. 2).



Most leaf damage is caused by developing larvae as they skeletonize leaves (Fig. 3). Although trees with heavy larval populations may take on an unsightly brownish hue, they usually recover quite easily and produce new,

healthy foliage the following year, provided they are not otherwise stressed. Chemical controls are usually not recommended for various reasons. To be effective, young, newly-hatched larvae have to be targeted by foliar sprays and most infestations are not noticed until larval development is substantially advanced. Foliar treatment of large trees can be difficult and costly and there are always hazards associated with potential drift of

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insecticides in urban settings. Trunk injection systems are available that deliver systemic insecticides directly into the vascular system of the tree and can provide a good degree of preventive control, but most homeowners will find this option prohibitively expensive. Nevertheless, trunk injection or soil drenches with systemic materials may be considered for protection of particularly high value trees. A non-chemical alternative is to band tree trunks with a sticky material that will trap mature larvae descending the trunk (Fig. 4), but this may be only partially effective, as the material may need to re-applied at regular intervals and many larvae may simply drop to the ground or pupate in bark crevices. There is also a need to band all susceptible trees in the vicinity, as some migration between trees will occur. Affected trees may warrant inspection the following spring so that preventive measures can be taken in a timely manner in the event the population reoccurs in large numbers.



More information available here:

<http://www.ksre.ksu.edu/bookstore/pubs/mf2392.pdf>

J.P. Michaud, Hays, KS

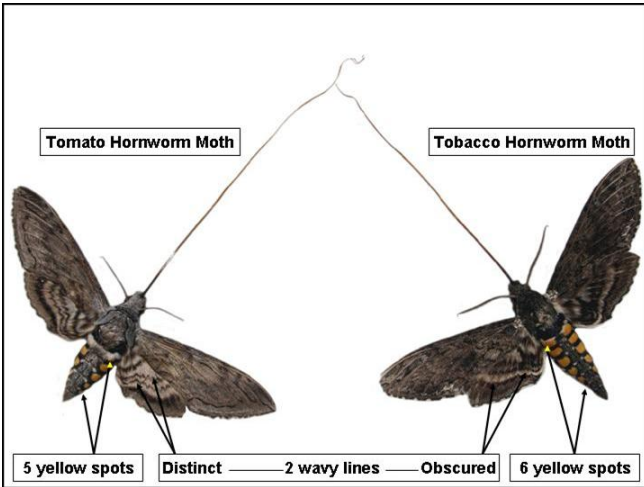
In the offing ---- Tomato/Tobacco Hornworms?

Blacklight traps are useful for detecting potential insect pests. One of several traps operated in Manhattan sits in usual place --- my back yard. This allows me easy access to collect on a daily basis. On Tuesday morning, August 6, there were 3 fat/gravid female tomato hornworm moths in the catch bucket.

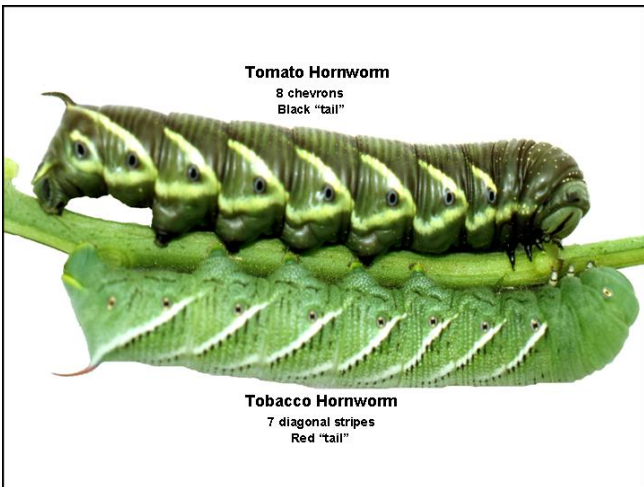


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Tomato and tobacco hornworms are closely related species of “sphinx moths” (which also are commonly referred to as hummingbird moths or hawk moths). But there are distinct differences between the two species.



Similarly, larvae are can be differentiated. Because overall body coloration varies and overlaps between and within both tobacco hornworms and tomato hornworms, that cannot be used to identify species. But unique body markings (shape and number) and color of the horn are species specific.

All of this being said, it is academic as to which species is encountered in the garden. It may be one or the other, or both. Their seasonal life cycles and developmental stages mirror each other.



Comes the question, “How destructive are tomato/tobacco hornworms?” Not-overly-concerned commercial growers likely will respond differently than home gardeners. And for home gardeners, responses will vary depending on acceptability of/tolerance towards the presence of hornworms. In situations where foliage is lush (left), plants are able to absorb foliar feeding. With heavy fruit set (below),



one for the larvae and for the gardener seems fair.

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Informed individuals know that large hornworms (which usually are what people observe) are at the end of their feeding cycle, and are content to simply let them be, rather, marveling at the beauty and antics of the hornworms.

For overly protective individuals or those repulsed by “worms”, the presence of a single hornworm brings out the “take action” response. The simplest method is to handpick and dispose larvae. People will find that hornworms cling tightly to the plant by wrapping their fleshy prolegs (the tips of which are equipped with crochets ---- rings of small gripping hooks/claws) around the tomato vines making them somewhat resistant to being easily picked off.



of

Extension Publication MF 3075, April 2013, presents more detailed information on hornworms, their development, seasonal life cycles and management considerations. The pdf is electronically available by visiting: KSRE Bookstore. In the search box, insert MF 3075.

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Home and Horticultural PESTS

Tomato and Tobacco Hornworms

Hornworms are the larvae of a wide variety of moths in the Sphingidae family (Order: Lepidoptera). They are named for the distinctive spine that protrudes from the rear abdominal segment. Common names include sphinx moth (when disturbed, larvae rear their heads and resemble the Egyptian Sphinx), hawk moth (for their fast flight), and hummingbird moth (for their ability to hover and probe flowers for nectar).

Of the more than 125 species of sphingid moths in North America, the two most familiar to vegetable gardeners are the tomato hornworm (*Manduca quinquemaculata*) and the tobacco hornworm (*Manduca sexta*). Moths of both species possess a wingspan of up to 5 inches. The unfurled proboscis may reach 4 inches in length. Tomato and tobacco hornworms can be distinguished by the number of orangish-yellow spots on the abdomen and wing pattern (Figure 1).

Tomato Hornworm
eight chevrons, black "tail"



Tobacco Hornworm
seven diagonal stripes, red "tail"

Figure 2.

Tomato and tobacco hornworms undergo complete metamorphosis, progressing through egg, larva, pupa, and adult stages (Figure 3).

Tobacco Hornworm

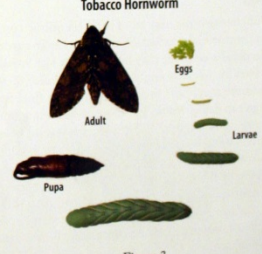


Figure 3.

Seasonal Life History

In Kansas, moths of both species are present throughout the summer. Two flight peaks suggest tomato and tobacco hornworms each produce two generations per year.

Figure 1.

Tomato Hornworm Moth: distinct wavy lines, five yellow spots

Tobacco Hornworm Moth: obscured wavy lines, six yellow spots

Larvae are similar to each other in shape, size, and color. Both are various shades of green. The tomato hornworm possesses a black horn and eight light-colored chevrons. The tobacco hornworm has a red horntail and seven diagonal lines (Figure 2).

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Where oh where can the bagworms be, oh where oh where can they be?



This image was taken Wednesday, August 7. It illustrates that we are at a time of the year that bagworms are approaching maximum size, the resultant (of their sating their ravenous appetites) being the “burnt appearance” of juniper plantings (as seen above) and eastern red cedars in tree lines/shelter belts. This image also illustrates that bagworm populations may be restricted in their distribution.



In situations such as this, the browned areas appear lifeless. It is a wait-and-see situation as to recovery (if any). The junipers in the east bed (devoid of bagworms) are green/healthy.

At this time, the bagworms in the west bed have moved to/congregated on available greenery. Possibly, if they deplete that food source and still require additional food, they may migrate to the nearby “salad bar” to the east.

Because these bagworms are actively feeding, they can be killed with an insecticide application. That will “save” the yet-to-be consumed greenery, although (as



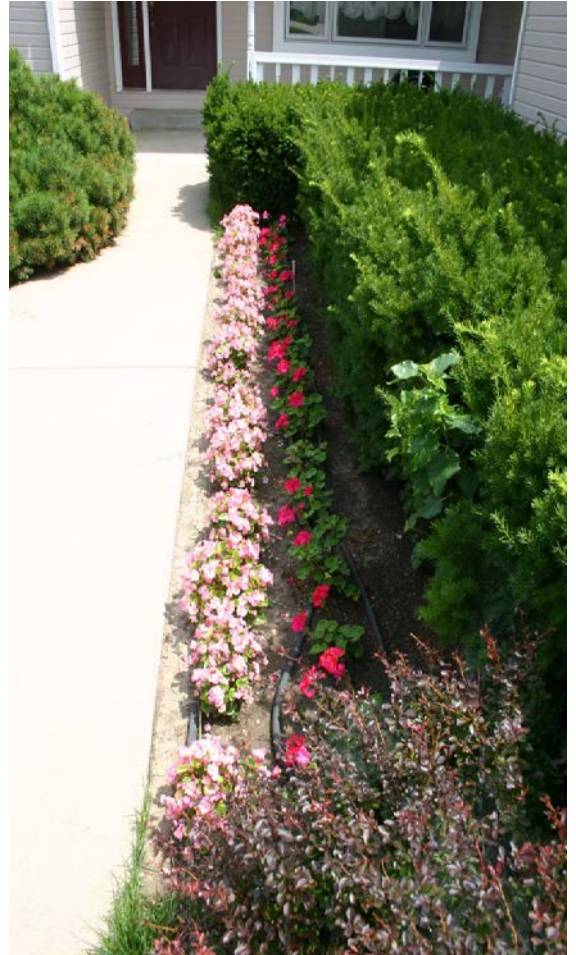
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implied above), the extreme damage may require eventual replacement of the entire planting.

Yes ---- Even entomologists take their lumps Tobacco Budworm

This image of begonia and geranium plants lining the front walkway of my home may be déjà vu for people who have read the Kansas Insect Newsletter over the years. And so, to again address the topic of tobacco budworms attacking geraniums. I don't know why geraniums are a particular favorite of tobacco budworms. Possibly an olfactory attraction drawing moths to plants upon which to deposit eggs. And for newly emerged larvae, tender buds to nibble into and destroy. And ample succulent foliage to support further larval development. Whatever, it is what it is!



From 1993 – 2008, our geraniums never fell victim to tobacco budworms. In 2009, they were riddled. Thus in 2010 and 2011, pheromone traps were used as an alert to the presence of tobacco budworm moths and the need to closely inspect plants for the presence of larvae before they did-their-thing. Of course, zilch! Dispensing with the pheromone trap in 2012, some tiny holes were noted when removing spent blooms. An insecticide application eliminated the small larvae.

This year, I have been closely watching for signs of tobacco budworm larvae in the line of geraniums. Nothing there yet. But perhaps I should have been looking elsewhere.

We keep large planter pots with various flower arrangements (which include geraniums) on our upper deck. Leaving for a 10-day vacation, I moved the pots down the stairs to accommodate our neighbor lady watering them. I have avoided lugging them back up. With the adequate rains, they have not required watering. They simply fell into the “forgotten category”. While doing some hand trimming last weekend, as I bent over, I was at eye-level with the pots!!!!!! A Neem treatment has resolved the situation.



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Bob Bauernfeind

Mosquitoes

Everyone should be aware by now – mosquitoes are a **severe** problem – and it is not going to get any better in the near future. The 1st human case of West Nile Virus in Kansas has been diagnosed already and mosquitoes infected with the virus have been detected in other counties in the state. This mosquito explosion is no doubt due to all the rain and resultant standing water. So, please take the standard precautions when outside – wear repellent with the active compound DEET and try to drain all standing water when possible.

Jeff Whitworth

Holly Davis

Insect Diagnostic Laboratory Report

<http://entomology.k-state.edu/extension/diagnostician/recent-samples.html>

Eva Zurek

Sincerely,

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