Kansas State University Extension Entomology Newsletter

For Agribusinesses, Applicators, Consultants, Extension Personnel & Homeowners

Department of Entomology
123 West Waters Hall
K-State Research and Extension
Manhattan, Kansas 66506
785-532-5891
http://blogs.k-state.edu/kansasbugs/
http://www.entomology.ksu.edu/extension

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Squash Vine Borer

Squash vine borer, *Melitta curcurbitae*, larvae feed on squash, pumpkin, cucumber, and muskmelon plants. Adults are moths that are 5/8 inches long, orange-red, with gray bands and three to four black markings along with orange-red hairs on the abdomen (Figure 1). Adults are active during the day with females laying eggs at the base of plants near the soil. Eggs are 1/30 inches in diameter, red-brown, and flattened (Figure 2). A single female can lay up to 200 eggs during her lifetime. Larvae that emerge (eclose) from the eggs are white, with a dark head capsule. Young larvae are 1/4 to 3/4 inches in length and taper toward the end of the abdomen. Mature or fully-grown larvae are 1 to 1-1/2 inches long (Figure 3).

Figure 1. Squash Vine Borer Adult

Figure 2. Squash Vine Borer Eggs At Base of Plant

Larvae that emerge (eclose) from eggs immediately tunnel into the base of plants and feed for approximately 30 days inside the plant

Figure 3. Mature Squash Vine Borer Larva inside Plant Stem (Raymond Cloyd, KSU)

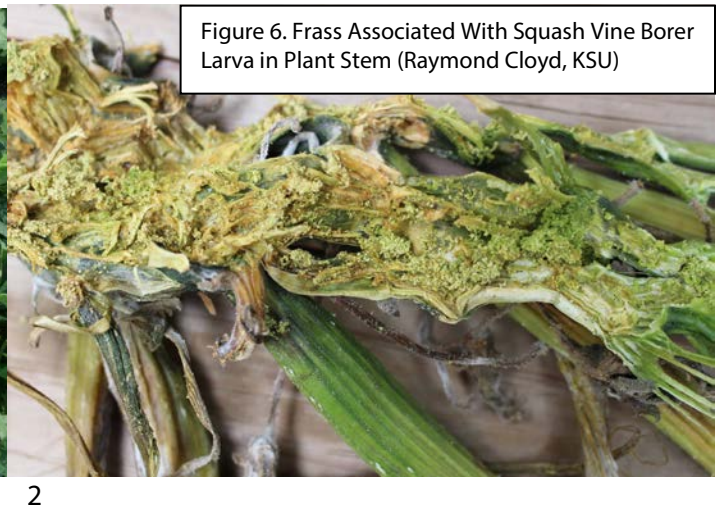
Figure 4. Squash Vine Borer Larvae Collected From Two Pumpkin Plant Stems (Raymond Cloyd, KSU)

stem. The larvae increase in size as they mature. There is usually one larva per stem; however, multiple larvae may be present in a single stem. On July 24, 2021, we found over 20 larvae in two pumpkin plant stems (Figure 4). **It was awesome** ☺. Mature larvae emerge from plant stems, burrow into the soil and construct brown, silken cocoons for overwintering. Squash vine borer overwinters as a pupa in the cocoon located 1 to 2 inches deep in the soil. In early spring, adults emerge from the soil. There is one generation of squash vine borer in Kansas.

During this time of year, squash vine borer larvae are feeding within the internal vascular tissues, inhibiting the ability of plants to take-up water and nutrients. Consequently, you may notice sudden wilting of vines and/or plants collapsing (Figure 5). Once larvae are inside the plant, there is not much you can do to manage squash vine borer and prevent plant damage. The tunnels inside infested plants are filled with

Figure 5. Plant Wilting Due To Feeding By Squash Vine Borer Larvae (Raymond Cloyd, KSU)

Figure 6. Frass Associated With Squash Vine Borer Larva in Plant Stem (Raymond Cloyd, KSU)



moistened frass (fecal matter) (Figure 6). Yellow-green sawdust-like frass may also be found around feeding sites at the base of vines or plants, which is a direct indication that larvae have entered the plant.

Because larvae are feeding inside the plant there is not much that can be done to kill the larvae. However, there are plant protection strategies that can be implemented during the remainder of the growing season such as, sanitation and physical control.

Sanitation: remove and dispose of all wilted plants before larvae exit and enter the soil. Discard all plant debris, including vines and fruits after harvest.

Physical control: rototilling in fall will kill squash vine borer pupae directly or cause the pupae to reside on the soil surface where they are exposed to cold weather or predation by birds. In addition, the process of deep plowing may bury the pupae deeper in the soil profile, which may inhibit adult emergence from the soil. Another technique that may have limited use in large plantings, but may be an option for smaller plantings, is to locate infested stems and vines, and create slits at the base of the plant. Then, tweezers may be used to remove larvae from inside the plant stem. Larvae should be killed and the plant base covered with moist soil and mulch, which will stimulate the production of secondary vines and/or root growth, thus helping the plant to re-establish. The previous technique will only be effective if there are one or two squash vine borer larvae inside the plant stem.

For more information on how to manage the squash vine borer, refer to the following extension publication:

Squash Vine Borer (MF3309 July 2016)
http://www.bookstore.ksre.ksu.edu/pubs/MF3309.pdf

Raymond Cloyd – Horticultural Entomology

HOME

Bugs that are Active Now

Lace Bugs

Green June Beetle, *Cotinus nitida*, Adults

Bagworm, *Thyridopteryx ephemeraeformis*

Twospotted Spider Mite, *Tetranychus urticae*

Grasshoppers

Squash Bug, *Anasa tristis*, Nymphs and Adults

Raymond Cloyd – Horticultural Entomology

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Ticks

Usually in Kansas, as spring passes into summer and summer becomes hotter and drier, the threat of tick bites is reduced. However, this year we are still seeing and getting reports about tick activity throughout the state. There are four different species of ticks found in Kansas, but probably the most common tick encountered by agriculturalists and other persons enjoying the outdoors is the American dog tick or sometimes called the wood tick (see fig.1) These are the ticks that most commonly get on us when walking in grassy or weedy areas beside crop fields or walking through those types of areas for recreation or anything else. These ticks need three hosts (blood donors) during their lifecycle but finding these three suitable hosts may take a year or more. These ticks cannot fly, jump or even crawl very fast for very far and thus primarily they just crawl up onto low vegetation and wait there to "ambush" a host. When a suitable host comes within contact of the hungry tick, the tick grabs onto the prospective host and immediately

Figure 1. American Dog or wood tick (pic by Cody Wyckoff)

searches for a suitable feeding site on that host. They then insert their mouthparts and start engorging with blood until satiated, which may take more than 1 day. Once satisfied, they drop to the ground to molt, if they are in the larval or nymphal stage, or to start depositing eggs if an adult female. This searching/feeding activity can occur from March to October depending upon weather. Once a tick becomes attached, removal needs to happen ASAP. The safest way to remove an attached tick from its host is to gently-but firmly-grasp the tick with fine forceps and apply steady pressure until the tick releases its hold. Then always inspect it to make sure the mouthparts are still attached to the tick (see fig 2) then preserve it in alcohol or freeze for later identification if necessary. Ticks may feed for a few days before becoming satisfied and disengaging, however, tick feeding sites may stay red and inflamed for several days afterward (see fig 3-tick removed intact 5 days prior). If a rash or flu-like symptoms develop after about 10 days consult your physician and take the preserved tick with you for specific identification.

Picture 2. Firm grip to remove tick (pic by Cody Wyckoff)

Picture 3. Tick irritation 5 days after removal.

Jeff Whitworth – Field Crops

Horn Flies on Horses

Horn flies are most well known for being a cattle pest where high numbers can cause significant animal stress and production losses. Although seen much less frequently and in lower carrying numbers, horn flies can be bothersome to horses especially those grazing together with or near cattle. On horses, as with cattle these flies are found on the back of the animal, sometimes moving up the neck and down to the rib area. Horn flies will cluster together with their heads pointing down towards the ground as they feed. Each horn fly will take a small blood meal 20-30 times a day. When disturbed, horn flies will fly up briefly but settle back onto the animal quickly. If you suspect your horse may be playing host to a population of horn flies you can use fly spray on the affected area to remove them.

Photos by Cassandra Olds -- Livestock and Veterinary Entomology

Cassandra Olds – Livestock and Veterinary Entomology

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Sorghum Midge Activity in the Southwest

Grain sorghum is in various stages of flowering in the southwest right now. Once flowering begins, growers might want to keep an eye out for sorghum midge. Historically, sorghum midge has not been a significant pest in Kansas and has been primarily observed in the southeast portion of the state. However, in the last several years, there have been localized outbreaks in the south central and southwestern portions of the state. Growers that had issues in previous seasons should pay close attention to their fields, as it is unclear if this pest is going to start playing a bigger role in our annual sorghum pest line up. Sorghum growers in these regions are encouraged to scout for sorghum midge this year. If midges are observed, sharing that information with your local extension specialists would provide useful information as to the distribution of the midge during the 2021 growing season. To scout for sorghum midge, carefully observe a flowering head while the anthers are still bright yellow and look for tiny red flies (Figure 1) on and around the flowers. The best time of day to do this is in the morning before the afternoon sun and wind pick up. Midges are delicate fliers and do not live more than 48 hours. Alternatively, you can use a clear plastic bag to scout. To use the bag, place it over the flowering head and shake the bag. Keeping the bag on the flowering head, look to see if any midges fly up and collect inside at the top of the bag. Later in the season as heads mature, growers can scout for evidence of midge damage as well. The damage will appear as blank zones on the flowering heads (Figure 2). In these blank zones, the grains never formed because the midge larvae consumed the seeds while they were developing; the area where a mature seed should be will be relatively flattened. Be careful not to mistake bird damage for midge damage. Bird damage will have more of a "blasted" look (Figure 3). Sharing reports of damage would be useful as well while we track this pest. At the time of this writing, midge has not been observed on any sorghum flowers so far in the Garden City area. However, sorghum midges were collected in the area from flowering Johnsongrass (another host) on July 1st.

Figure 1: Adult sorghum midge; KSU Entomology


Close up of sorghum midge damage

Figure 2 and 3 by Anthony Zukoff -- Southwest Research and Extension Center

Anthony Zukoff -- Southwest Research and Extension Center

Bug Joke of the Week

Q: How Did The Spider Disrupt The Worldwide Web?

A: It Gave It A Bug!

Raymond Cloyd – Horticultural Entomology

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Sincerely,

Jeff Whitworth
Extension Specialist
Field Crops
phone: 785/565-2371
e-mail: jwhitwor@ksu.edu

Raymond A. Cloyd
Professor and Extension Specialist
Horticultural Entomology/Integrated Pest Management
Phone: 785-532-4750
Fax: 785-532-6232
e-mail: rcloyd@ksu.edu

Cassandra Olds
Assistant Professor
Livestock & Veterinary Entomology
Phone: (509) 715-7611
e-mail: colds@ksu.edu

Anthony Zukoff
Extension Associate – Entomology
Southwest Research and Extension Center
Garden City, KS
Phone: 620-275-9164
e-mail: azukoff@k-state.edu
@westksbugs

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Kansas State University Agricultural Experiment Station and Cooperative Extension Service

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