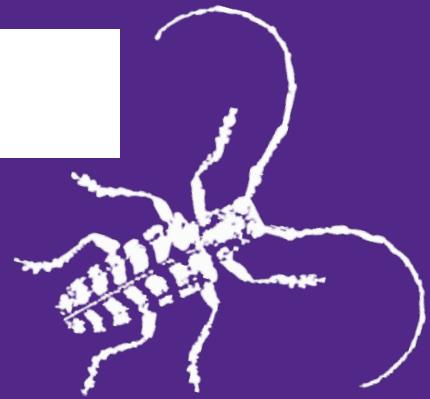


Kansas State University Extension Entomology Newsletter

For Agribusinesses, Applicators, Consultants, Extension Personnel & Homeowners

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Squash Bug

Soybean gall midge detected in Kansas - be on the lookout

Squash Bug

Squash bug, *Anasa tristis*, females are laying eggs and the young nymphs are feeding on squash and pumpkin leaves. Squash bug adults are 1/2 to 3/4 of an inch long. Adults are dark-brown and have wings with brown-to-black and orange markings along the outer edge of the body (Figure 1). Females lay red-orange eggs on the leaf underside (Figure 2) and top of leaves. Nymphs emerge (eclose) from the eggs in seven to 14 days. There are five nymphal instars (stages between each molt) before squash bugs mature into adults. First instar nymphs have a red head and thorax (middle section) and pale-green abdomen (Figure 3). Second instar nymphs have a black head and thorax and a pale-green abdomen (Figure 4). Nymphs gather near the eggs after emerging. Older nymphs (3rd to 5th instar) are gray (Figure 5) and distribute themselves over the entire plant (Figure 6). Nymphs are 3/16 of an inch long and cannot fly because they do not have fully-developed wings.



Figure 1. Squash bug adult (Raymond Cloyd, KSU)



Figure 2. Squash bug eggs on leaf underside (Cloyd)



Figure 3. Young squash bug nymphs (Cloyd)



Figure 4. Young squash bug nymphs (Cloyd)



Figure 5. Older squash bug nymphs (Cloyd)



Figure 6. Older squash bug nymphs on the stem (Cloyd)

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Squash bug nymphs and adults use their piercing-sucking mouthparts to withdraw plant fluids from leaves, stems, vines, and fruits. Damage to leaves appears as small, yellow specks that eventually turn brown (Figure 7).

Below are plant protection strategies that can be implemented to mitigate problems with squash bugs and prevent subsequent plant damage.

1. Plant later in the growing season to avoid the initial emergence of overwintering adults.
2. Check plants for the presence of eggs, nymphs, and adults on leaf undersides at least once per week during the growing season.
3. Destroy eggs, and hand remove nymphs and adults, place into a container with soapy water to kill them. Hand remove every three to four days.
4. Place wooden boards throughout the garden, turning them over daily to collect squash bugs hiding underneath. You can kill the squash bugs by placing into a container of soapy water.
5. Apply a contact insecticide when nymphs are present. The young nymphs are easier to kill than the older nymphs. Contact insecticides are less effective against adult squash bugs because adults have a thickened waxy cuticle (skin) that insecticides cannot adhere to and penetrate. Adults are also protected from insecticide sprays by the leafy plant canopy. Weekly applications of contact insecticides may be required to maintain squash bug populations below levels that will prevent plant damage. Thorough coverage of the leaf undersides is important to manage squash bug populations.

Figure 7. Feeding damage caused by squash bug (Cloyd)



For more information on how to manage squash bug populations, refer to the following extension publication:

Squash Bug (MF3308 July 2016)

<https://www.bookstore.ksre.ksu.edu/pubs/MF3308.pdf>

Raymond Cloyd – Horticultural Entomology

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Soybean gall midge detected in Kansas - be on the lookout

In the past week, soybean gall midge was found infesting soybean in Nemaha county as well as soybean and sweet clover in Marshall county.

The Soybean Gall Midge (*Resseliella maxima*) was first observed in Nebraska in 2011, but was not officially described as a new species until 2018 when this tiny fly established itself as an emerging pest of soybeans in South Dakota, Nebraska, Minnesota, and Iowa. New infestations have been documented every year since and its range has expanded into Missouri. Soybean gall midge has been documented in Nebraska along the Kansas border as recently as 2021. This pest should be actively scouted for during the growing season, especially in counties along the Nebraska border.

Losses from soybean gall midge infestation are due to plant death and lodging (Figure 1). Heavily infested fields have shown the potential for complete yield losses from the edge of the field up to 100 feet into the field and a 20% yield loss from 200 to 400 feet into the field.



Figure 1. Soybean field with damage by soybean gall midge. (Justin McMechan, Univ. of Nebraska)

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Identification and Lifecycle

Adults: tiny (2-3mm), delicate flies with an orange abdomen, slender bodies and mottled wings. Long legs are banded with alternating light and dark markings (Figure 2)



Figure 2. Adult soybean gall midge. (Mitchell Helton, Iowa State Univ.)

Larvae: small, legless, maggots that are clear to white-colored when young but turn bright orange when mature (Figure 3).



Figure 3. Soybean gall midge larvae. (McMechan)

Soybean gall midge overwinter as larvae in the first few inches of soil. After pupation in the early spring, adult midges emerge and lay their eggs on the lower portions of stems or at the base of soybean plants. The eggs hatch and the larvae feed within the stems. Infestation does not occur until the V2 stage when natural fissures and cracks appear in stems allowing entry by larvae. Infestation can continue into the reproductive growth stages. So far, there appears to be at least two generations per growing season. The adult soybean gall midges do not feed on soybeans.

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Scouting

Begin scouting soybean plants at the V2 growth stage. Symptoms of infestation include:

1. wilting or dead soybeans along field edges with decreasing damage into the center of the field (Figure 4),
2. darkening and swelling at the base of stems (Figure 5),
3. brittle stems that break easily near their base, and
4. small orange larvae present in split open stems.



Figure 4. Wilting soybean plant from gall midge infestation. (McMechan)



Figure 5. Darkening and swelling of stem. (Adam Varenhorst, South Dakota State Univ.)

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Management

Being such a new pest, there are currently no published research-based management recommendations. On-farm studies in impacted states are examining the effects of cultural practices and insecticides on preventing losses. Seed treatments have not shown to be effective.

Please report any occurrence of soybean gall midge to your local extension professional or contact the K-State Entomology Department. The Soybean Gall Midge Alert Network, <https://soybeangallmidge.org/>, can be used to track developments regarding this new pest.

Anthony Zukoff—Southwest Research and Extension Center – Garden City, KS

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Sincerely,

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Department of Entomology

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