



Green Stink Bug

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Order: Hemiptera

Family: Pentatomidae

Species: *Chinavia hilaris* (Say)

Introduction

Green stink bug, *Chinavia hilaris* (formerly *Acrosternum hilare*) (Say), is a highly polyphagous pest of many crops throughout Virginia including soybean, tomato, pepper, snapbean, okra, and tree fruit and nut crops. They are often confused with southern green stink bug, *Nezara viridula* (L.) because of their similar green coloring and habitat during the growing season, but can be properly separated by identifying the elongated scent canal on the ventral side of the metathorax. They can also be distinguished from the shape of their abdominal spine with the green stink bug having a more pointed spine at the base of the hind legs instead of the rounded spine on the southern green stink bug. Also, southern green stink bug is rarely found in Virginia.



Fig. 1. Green stink bug adult in soybean (Photo by K. Kamminga).

Life cycle and Identification

Adult. Green stink bug adults overwinter in leaf litter and under tree bark along the edges of fields. They become active in late spring. Green stink bug is one of the largest stink bugs in North America; adults are around 15 mm (5/8 inch) long, and have the classic five-sided shield shape that many other stink bugs have. They are green with black bands on the antennae and a pointed abdominal spine, and have an orange-yellow border along the outside of the head and pronotum (Fig. 1). As with all stink bugs, these insects have piercing-sucking mouthparts that are present throughout all life stages.

Egg. Eggs are deposited in clusters on the undersides of leaves (Fig. 2), in late spring and early summer. Egg numbers within a cluster (mass) can vary, and can reach as high as around 70 eggs in a mass. Individual eggs are 1.3 – 1.5 mm (~1/16th inch) long and 1.1 – 1.3 mm in diameter and are a pale green color when first laid before becoming more of pink/gray color. Eggs have been described as both cup-shaped and barrel



Fig. 2. Green stink bug egg mass (Photo by K. Kamminga).

shaped. The time it takes for eggs to hatch can be variable dependent on the temperatures to which they are exposed, but can range from 9 – 19 days.

Nymph. There are five instars of the green stink bug. They are identified as being black with orange markings in the early stages and variable colors for the more mature nymphs. The later instars are generally black or green on the head and thorax with a greenish abdomen with black or bronze colored spots on the lateral margins. These insects can develop into adults anywhere from 40 – 70 days depending on temperature.



Fig. 3. Green stink bug 5th instars. The coloration on the left is most common (Photos by K. Kamminga).

Distribution

Green stink bug is native to North America and is found throughout the United States and southern Canada. In Virginia, green stink bug is quite common in several agricultural and forest settings. It is one of the most abundant stink bugs in the state.

Damage

Adults and nymphs use their piercing-sucking mouthparts to suck fluid from fruit and seedpods of their host plant. While feeding, the bug injects enzymes into the structure to assist in



Fig. 4. Example of stink bug damage on tomato (Photo By K. Kamminga).

liquefying the tissue. This feeding results in weakened areas at the feeding site, which can result in malformed or scarred fruit. On okra and bean pods, the damage appears as pimples or wart-like growths. On tomatoes and peppers, white marks, often resembling halos, appear on the fruit. On pecans and beans, the damage shows up as brown spots on the nutmeat or seed. On some tree fruit, stink bugs can cause a deforming condition called cat facing on the fruit. In addition to physical damage, this stink bug can also vector fungal pathogens that cause yeast-spot in beans and soybeans.

Management

Biological. Stink bug eggs are readily parasitized by wasps in the family Platygasteridae (subfamily: Scelioninae). A survey conducted in Virginia revealed that several *Trissolcus* species, including *T. basalis*, *T. edessae*, and *T. euschisti* were the primary parasitoids of green stink bug eggs with parasitism rates averaging around 50 to 70% when the wasps are present in a field (Koppel et al. 2009). Adult stink bugs are regularly parasitized by the tachinid fly *Trichopoda pennipes*, which deposits its egg on the body of adult stink bugs. Parasitism rates by this species can exceed 50% in some years. Stink bug eggs and small nymphs are also attacked by a wide range of predators including green lacewings, predatory stink bugs, and several bird species.

Chemical. When green stink bugs are above economic thresholds and insecticide application may be necessary. Broad spectrum insecticides, such as organophosphates, pyrethroids and neonicotinoids have been shown to provide the best control of stink bugs. In organic settings, pyrethrins and spinosad have been shown to be moderately effective. Insecticide recommendations vary from crop to crop. Because of green stink bug's high mobility, insecticides with a longer residual may be more effective. Please consult the Commercial Vegetable Production Recommendations (VCE Pub. No. 456-420) for a list of registered products and rates. For home gardens, stink bugs can be controlled with general use insecticides (usually pyrethroids) labeled for use in gardens. Treat when both stink bugs and objectionable damage is found. Follow label cautions about time needed between application of insecticide and when harvest can resume.

Mechanical & cultural. In organic farm settings, row covers may be a viable option for growers to control this stink bug. Hand removal may be another option, as these insects are conspicuous as nymphs and adults. Eradication or suppression of certain weeds such as common elder, jimsonweed and goldenrod and other fruit trees adjacent to fields can help reduce populations of green stink bug.

Reference Materials

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