



BUG BIZ

Pest Management and Insect Identification Series



Sphenophorus venatus vestitus, Hunting Billbug (Coleoptera: Curculionidae)

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Description

Numerous members of the billbug genus *Sphenophorus* are major pests of turfgrass in the southern U.S. Among them, the hunting billbug, *Sphenophorus venatus vestitus*, also known as the zoysia billbug, is one of the most common. The characteristic snout found on adults and the specific epithet *venatus* (meaning “the chase”) are the origins of the common name.

Adults are dark brown to reddish brown in color and are often coated with a fine layer of soil. They possess distinctive snouts typical of many weevils and a characteristic arrangement of small pits on top of the thorax (pronotum). This area of punctures forms a V-shaped pattern. Adults are 1/3 to 1/2 of an inch (8 to 12 mm) in length, with females slightly larger than males. Their elytra (hardened forewings) also possess punctures arranged into rows (striae). Larvae of billbugs are similar to other large weevil larvae, ranging in length from 1/20 of an inch (1.2 mm) in hatchlings to 2/5 of an inch (10 mm) in mature larvae. They are legless, soft-bodied and white in color with a yellowish or brown head. Pupae are initially cream colored, but eventually turn reddish brown prior to adult emergence.

More than 60 species of *Sphenophorus* are known to occur in the United States with at least 13 species in Louisiana based on specimens identified in the Louisiana State Arthropod Museum. Billbugs are sometimes placed in a separate family, Dryophthoridae. The species *Sphenophorus venatus* comprises four recognized subspecies. *Sphenophorus venatus vestitus*, the hunting billbug, is the most widely distributed member of the complex. The many members of the genus can be challenging to correctly identify, and multiple species can be involved in turfgrass infestations. In cases of suspected billbug infestation, specimens should be submitted to a knowledgeable entomology diagnostician for positive identification.

Hunting billbug, side view, museum specimen (Mike Ferro, Louisiana State Arthropod Museum).



Hunting billbug, top view, museum specimen (Mike Ferro, Louisiana State Arthropod Museum).



Billbug damage to residential lawn (David Shetlar, The Ohio State University Bugwood.org).

Life Cycle

The hunting billbug completes two to six overlapping generations per year. Billbugs overwinter in sheltered areas as adults and emerge in spring. The female lays eggs in thick-stemmed, actively growing grasses. Using tiny mandibles on the end of her beak, the female chews holes in grass stems near the soil surface and lays an egg in each hole. Larvae hatch after three to 10 days, depending on temperature. After three to five weeks of feeding on grass roots and stems, larvae complete development and prepare an underground soil chamber, where they pupate. A complete generation can be completed in eight or nine weeks under favorable conditions at 77 F to 81 F (25 C to 27 C).

Ecological Significance and Pest Status

Turfgrass is functionally and recreationally important in managed monocot landscapes, including golf courses, residential lawns and public parks. Demand for zoysia (*Zoysia* spp.) has increased in recent years for golf courses and lawns, and the hunting billbug has been implicated as one of the more important pest species on zoysia. It was first identified as a serious pest in 1956, when it was discovered in zoysia sod in Florida. Zoysia is a slow-growing grass that is slow to recover from pest damage. Hunting billbug has been documented in cool season turfgrass along with up to four other billbug species. Hunting billbugs also feed on, and can be pests of, bermudagrass (*Cynodon* spp.). The type of damage caused by billbugs is the same, regardless of the species involved.

Damage caused by billbugs in turfgrasses is often misdiagnosed as being caused by nematodes, summer dormancy, drought, inadequate soil fertility, compaction and other culprits. Adult males attack the stems and blades of grass whereas adult females bore holes into stems for egg laying. Larvae attack plant crowns and roots which cause wilting and dead patches that merge



Billbug larva (LSU AgCenter).

in severe infestations. Visual checks for billbug damage require digging up grass along the leading edges of dead zones and looking for fine, powdery, sawdust-like material in root mats and base of stems. Adults migrate after emergence and can often be observed on paved and barren surfaces.

Management

Cultural methods. Healthy grass is much more resistant to infestation and recovers more quickly from limited infestation. Maintaining appropriate standards of fertilization, watering and mowing are essential. Selecting turfgrass varieties that are adapted to local stressors such as drought and excessive heat can reduce risk of infestation. In recent years, increased use of endophyte (non-pathogenic fungi) enhanced turfgrass has been demonstrated to reduce damage by various turfgrass pests, including billbugs. Diversification of lawns by reducing coverage of monocultural stands of non-native turfgrass in favor of native vegetation is an environmentally friendly and rewarding alternative that eliminates potential turfgrass pests entirely.

Biological control. Some commercially available biological control formulations include insect-parasitic nematodes (e.g., *Heterorhabditis bacteriophora* and *Steinernema carpocapsae*) and fungi (*Beauveria bassiana*) that are effective against various life stages of billbugs. The products may require careful attention to when and how they should be applied and may have a limited shelf life. Always follow label directions exactly and be certain the product is labeled as effective against the pest in question.

Chemical control. Proper identification of the insect species and life stages involved are essential

in choosing correct insecticides. Pyrethroids such as bifenthrin specifically target adult billbugs during the spring season before they lay eggs. Billbug larvae are typically targeted using systemic insecticides because the larvae are not exposed to surface applications of contact insecticides. Systemics that move through plant tissues on which

larvae are feeding include the neonicotinoids imidacloprid and clothianidin, and the diamides cyantraniliprole and chlorantraniliprole. Ideally, these should be applied early enough to allow the chemical to be absorbed by the plants before larvae have a chance to do obvious damage. As stated previously, always follow label directions exactly.

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Contact Us: For advice about arthropod identification or diagnosis, contact the LSU AgCenter Department of Entomology. Reach the department through the Contact Us webpage: <https://bit.ly/36c4awm>.

