

GREENBUG DAMAGE FOUND ON KENTUCKY BLUEGRASS

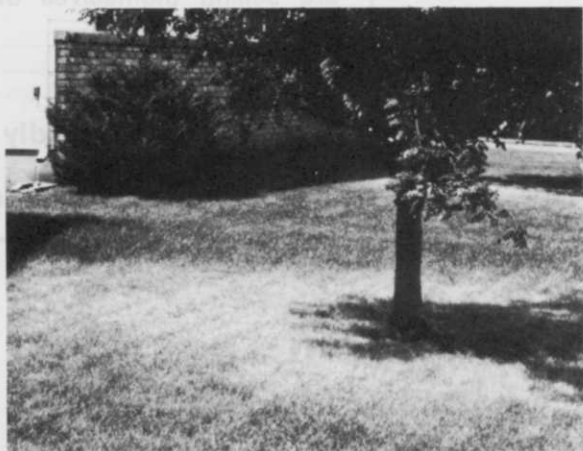
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The greenbug, *Shizaphis graminum*, is a widely distributed aphid in North and South America, Europe, Africa, and Asia. It is a well-known and serious pest of grain crops including oats, wheat, and barley, particularly in the central states from Texas to North Dakota and Minnesota. It also feeds on other small grains, corn, rice, sorghum, and forage grasses. Heavy infestations of greenbugs have caused total destruction of both winter and spring grain crops.

In 1970 and 1971, Dr. Roscoe Randell, of University of Illinois reported noticeable damage to Kentucky bluegrass by the greenbug in central and eastern Illinois during the late summer months. This was the first time that the aphid was observed as an epidemic on turf. Prior to this, aphids were considered as incipient turf pests that contribute slightly to the total stress on turfgrass, but not sufficiently to cause economic damage and justify separate control. Greenbugs and their damage have been observed occasionally on turfgrass areas from 1971 through 1977 in Illinois.

Lawns damaged — In June 1978, large circular to slightly irregular patches of dead grass were observed under trees, as well as in open, sunny areas on lawns and other turfgrass areas. These patches usually ranged in diameter from 3 to 15 feet or more. Initial observation suggested dormant or drought-stressed grass, especially since much of the damage occurred underneath the tree canopy. The outside perimeter of brown, dead turf was surrounded by a narrow band of yellow to reddish-orange (rusty) grass. Immediately outside the narrow band the grass was green. Upon closer



A common site of greenbug damage is turf underneath a host tree.

observation, individual plants taken from the chlorotic turf were found to be hosting large numbers (100 or more) of aphids. Aphid feeding continued during the July and August months.

Greenbug description — The adult greenbug is approximately 2-3 mm long, soft-bodied, somewhat pear-shaped, and pale yellow to bright green with a dark green stripe running down the back. It has one pair of antennae and 3 pairs of legs, characteristic of members of the order Insecta. The predominant form of the greenbug is winged and wingless females and their young. The young are produced parthenogenetically (without fertilization) and viviparously (bear living young). Young develop via simple metamorphosis with the young passing through several nymphal instars in about a week. As a rule, existing parthenogenetic biotypes live about one month and produce 50 to 100 young. As many as 20 generations of the viviparous females may develop during one season.

The specific biotype and migration habits of the greenbug feeding on turfgrass have not been clarified. Outbreaks of other greenbug biotypes in the north are considered to arise from the migration of winged aphids originating in southern grain fields. The aphids leave wintering places in the south during March and April with strong southerly winds. These migrants feed on grain crops in the central states. When grain in these areas mature in May, aphids are again produced in large numbers and carried by southerly winds to more northerly states. Present greenbug biotypes are not believed to survive in any of their stages in the north due to the extreme cold winter temperatures. Future research needs to be conducted to define the specific biotype feeding on turfgrass and its overwintering habits.

Feeding and damage — Like other aphids, the greenbug has specialized mouth parts called stylets that are well adapted for sucking juices from the plant. There is also a duct for the ejection of salivary secretions. The salivary fluids contain enzymes that break down the cell and their contents and kill the living tissue. Turfgrass blades resulting from greenbug feeding first show yellow spots with necrotic centers, then turn a rusty color, and eventually turn brown. The greenbug appears to be primarily a feeder on Kentucky bluegrass, causing no damage to fine fescues and other turfgrasses in adjacent areas.

Control — Although most commonly used turfgrass insecticides are effective for greenbug control, malathion is the only insecticide presently carrying a label for use on grasses. The recommended rate of malathion, 57% liquid concentrate, is one tablespoon in 3 gallons of water per 1000 square feet applied to the area infested by the aphid. Under most situations, it is felt that spot treatment would be sufficient to keep the problem to a minimum.

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