

Ohio Scientists Attack New Turf Insect Problem

Wooster, Ohio--Ohio entomologists are planning a stepped up effort to learn more about a tiny insect that's been causing increasing levels of damage to turfgrasses in Ohio and other states. Studies will focus on gathering data on the biology, ecology and control of the greenbug, an aphid with the scientific name Schizaphis graminum (Rondani).

Dr. H. D. Niemczyk and Dr. L. R. Nault, entomologists at the Ohio Agricultural Research and Development Center, will be the principal investigators in the study which will be supported by various segments of the turfgrass industry.

The greenbug is not a new insect pest. It's been a problem in a number of grassy crops including barley, wheat, oats and sorghum. Perennial bluegrass is also a host, but in the past the aphid has rarely caused serious damage in turfgrass. The recent losses may indicate a new association between the greenbug and turfgrass.

Various "biotypes" of the greenbug have developed which attack specific grass hosts. The Ohio scientists speculate that a new bluegrass adapted biotype of the greenbug has evolved in Ohio and other midwestern and eastern states.

They say the greenbug damages grasses in several ways. With piercing-sucking mouthparts it feeds on phloem sap. Large numbers of the insects seriously weaken plants. In addition, the greenbug secretes a salivary phytotoxin which is injected into the plant resulting in yellow and orange spots on the foliage. There is the possibility the toxin may also move within the plant and weaken the root system.

The scientists plan to check the possible involvement of the greenbug in the transmission of virus diseases. The aphid is known to be a vector (carrier) of three isolates of the barley yellow dwarf virus. There may be implications for bluegrass in the virus vector picture. Greenbug damage first appears in late June and continues through September. In some cases, sections of lawns have been damaged so severely that turf had to be replaced. Some degree of control has been achieved with liquid sprays of Dursban but as many as three or four followup applications were needed to keep damage under control.

Niemczyk and Nault say the new research effort will attempt to establish whether or not there actually has developed a bluegrass-specific greenbug biotype and if so, they will determine whether or not it overwinters in bluegrass and if certain management practices affect overall populations. They plan to screen different varieties of bluegrass to see if any exist with resistance or tolerance to the greenbug.

Infested turfgrasses will be indexed for barley yellow dwarf virus and other possible greenbug transmitted viruses to determine the possible involvement of virus diseases and their impact on blue grass. Greenbug populations will be carefully screened to determine whether or not the insect has developed resistance to various organo-phosphate insecticides, a problem already occurring in certain other insects attacking turf and other crops.

Finally, various insecticides will be tested to determine their effectiveness in controlling the greenbug. Optimum rates, times of application and volume of carrier will be determined. The entomologists plan to conduct these tests on home lawns where greenbug populations have reached damaging levels.

The goal of the new industry-supported study is to learn more about the greenbug and to develop effective and economical methods of controlling damage. Information on the insecticides tested in the study could lead to the granting of a state or national label for the use of materials not presently registered for greenbug control.