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Grape colaspis damage occurring in central Iowa

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Abstract

With the dry weather over parts of the state, grape colaspis feeding has manifested itself as visible injury to corn (stunting, wilting, and discoloration). Without rain, the injury may result in stand loss in seed corn fields in central Iowa. The actual population of grape colaspis larvae does not appear to be higher than those observed in previous years. The lack of moisture is probably the factor that has allowed the symptoms to appear.

Keywords

Entomology

Disciplines

Agricultural Science | Agriculture | Entomology



Insects and Mites

Grape colaspis damage occurring in central Iowa

by Benjamin Kaeb and Jon Tollefson, Department of Entomology

With the dry weather over parts of the state, grape colaspis feeding has manifested itself as visible injury to corn (stunting, wilting, and discoloration). Without rain, the injury may result in stand loss in seed corn fields in central Iowa. The actual population of grape colaspis larvae does not appear to be higher than those observed in previous years. The lack of moisture is probably the factor that has allowed the symptoms to appear.

Current damage

On June 7, a number of fields in Grundy County had a significant amount of injury. One field in particular really caught our attention. In this seed corn field, injury was visible across the entire field; most of the plants were discolored from apparent potassium deficiency and many were already severely stunted. Soil tests from this location show potassium and phosphorus to be at optimum levels. On closer inspection, at least four grape colaspis were found feeding on most plants; several plants had many more, with one plant having 14. Feeding injury was clearly visible on the roots of the corn. The seed in this field is treated with Poncho® 250 and Force® had been applied at the rate of 4 lbs/acre.

Most of the damage that has been reported in Iowa in recent years has been to seed corn planted after soybean. There have been reports of damage to corn following corn. Damage to soybean has not been reported in Iowa.

Grape colaspis larvae feed on the surface tissue of roots, moving along the root while feeding. The feeding injury often appears as a groove in the surface tissue of the root. This feeding removes many of the root hairs, which impedes the uptake of water and nutrients by the plant. The roots are not cut off and the larvae do not burrow into the roots as rootworms might.

Current status

The colaspis larvae collected this week varied in size, and just one of ten measured had reached the tenth and final instar. This means that they will be feeding for a few more weeks and injury symptoms will continue to intensify if there is no rain.



Field injury caused by grape colaspis (top). Severely stunted corn plants, apparently from potassium deficiency (middle). Grape colaspis larvae (right) are small, cream-colored grubs ($\frac{1}{8}$ to $\frac{3}{16}$ of an inch), covered with bunches of hair. Light tan heads help differentiate them from other grubs. (Benjamin Kaeb)



Scouting

Aboveground injury symptoms alone should not be used to scout for the grape colaspis, as other factors can cause similar symptoms. When grape colaspis injury is suspected, plants need to be dug up and observed for grape colaspis larvae. To scout for larvae, a trenching shovel and putty knife work well in the field. Remove the plant from the ground with the roots and soil around them intact, and use the putty knife to peel the soil back a layer at a time. The larvae are generally found close to the roots. The depth at which larvae are found varies; however, most that are currently feeding will be between $\frac{1}{2}$ " and 3" deep in the soil. Grape colaspis larvae are small, cream-colored grubs ($\frac{1}{8}$ to $\frac{3}{16}$ of an inch), rather

plump compared to other small grubs, and covered with bunches of hair. They have light tan heads, which allows them to be differentiated from manure grubs or small white grubs, which have longer bodies and darker colored heads.

Life cycle

The grape colaspis has a single generation per year in Iowa. The adults emerge from the soil from late June into August and feed on the foliage of a wide variety of plants, including soybean and corn. Adult beetles can be found in sweep net samples from soybeans throughout July and August. The population of adults in the field peaks sharply in early to mid-July and then begins to decline by the third week of July. They mate soon after emergence, and the females begin oviposition a few days later. The eggs hatch in 1 to 2 weeks and the larvae feed on the root surface of the soybeans where they cause little damage. The larvae move deep into the soil to overwinter. In the spring, they move up into the root zone as the soil warms and begin feeding on the surface of roots of the newly emerged corn.

Options

There are no known rescue treatments for grape colaspis damage. Infestations should be noted for use in future management decisions. Grape colaspis populations have been found to be consistent in fields for a number of years, and a field that has been damaged should be considered to be at risk for future damage. Management options include planting a crop other than corn, treating corn with the full corn rootworm rate of insecticide, or, possibly, applying insecticide to soybean the year prior to planting corn to eliminate adult beetles. The later technique is still under investigation and will be reported on in a later newsletter article.

Benjamin Kaeb is a research associate in entomology. Jon Tollefson is a professor of entomology and chair of the Department of Entomology, Iowa State University.



Announcements

Soil and water CCA credit opportunity at Tile Installation Field Day—July 12

by **Jim Fawcett, Iowa State University Extension**

Certified crop advisers (CCAs) can obtain 3 hours of credit in soil and water management by attending a special session at the Tile Installation Field Day at the Southeast Iowa Research and Demonstration Farm near Crawfordsville on July 12.

The Tile Installation Field Day will run from 9 a.m. to 4 p.m. and will include the opportunity to see tiling machines in operation in the field as well as educational and commercial exhibits. The CCA session will begin at 11 a.m. with a viewing of trenching and plowing tiling machines in operation. Tile will be placed to compare shallow, narrow spacing of tile to deeper, wider spacing. Controlled drainage also will be featured, as well as a constructed wetland to reduce nitrates in the tile water.

In the afternoon, Matt Helmers, ISU Extension agricultural engineer, will present “Drainage Design Considering Economics and the Environment.” Also featured in the afternoon will be Jim Baker, agricultural

engineer and water quality expert, presenting “Water Quality Research in Iowa.” The afternoon session will conclude at 2:30 p.m.

Registration for CCAs will begin at 10:30 a.m. The registration fee is \$40, which includes lunch. Please pre-register by calling the Johnson County Extension Office at (319) 337-2145 or sending an e-mail to Jim Fawcett (fawcett@iastate.edu) by July 10 to avoid a \$10 late fee. The registration fee can be paid at the door. Rain date is July 13. To reach the research farm go 1¾ miles south of Crawfordsville on Highway 218, then 2 miles east on G-62, then ¾ mile north.

Jim Fawcett is an extension field crops specialist serving Benton, Iowa, Johnson, Jones, Linn, Keokuk, and Washington counties.