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More on Stewart's wilt

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Abstract

Iowa State University Extension continues to receive questions on Stewart's wilt, a relatively new corn disease for many Iowa producers. This article gives some of the most common questions, along with input from my research and extension colleagues on what is currently known.

Keywords

Plant Pathology

Disciplines

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INTEGRATED CROP MANAGEMENT

More on Stewart's wilt

Iowa State University Extension continues to receive questions on Stewart's wilt, a relatively new corn disease for many Iowa producers. This article gives some of the most common questions, along with input from my research and extension colleagues on what is currently known.

How is the pathogen transmitted?

The bacterium causing Stewart's wilt can be seedborne or insectborne. At the beginning of a season, bacteria carried by overwintering flea beetles are the major source of inoculum. The proportion of beetles that carry the bacterium varies from season to season and can be as high as 20 percent. Second- and third-generation flea beetles obtain the bacteria by feeding on plants infected with the pathogen by first-generation flea beetle feeding. The larger the second-generation flea beetle population, the more quickly the disease spreads in a season.

Does corn show resistance or tolerance to Stewart's wilt?

Corn varieties tolerant to this disease are available, with some varieties more tolerant than others, but they are not immune or resistant. Inbred lines and sweet corn are more susceptible to the disease than hybrid corn. The disease generally is a problem in sweet corn or inbred lines. Some hybrids are susceptible to this disease. Check with seed dealers for resistance information.

When does wilting occur?

After wounding, the bacteria can systemically spread in a plant through the xylem and result in wilting, mainly in younger plants. Wilting is not limited to the seedling stage if varieties are highly susceptible. For younger plants, insect and chemical damage also can result in wilting, which can be misidentified as Stewart's wilt. If varieties are tolerant, wilting is less likely to occur. Wilting also has been observed in plants taller than 24 inches. In growth stages after tasseling, infections by Stewart's wilt bacteria are more likely to cause localized leaf blight. Infected leaves have pale green-to-yellow streaks paralleling veins.

How can the disease be identified?

Plants that are infected by the Stewart's wilt bacterium often show a bacterial stream: masses of bacteria may move out from cut edges of infected leaves or from the stem when the edge or stem is placed in drops of water. Microscopic examination as well as experience is

needed to see this bacterial stream. Send symptomatic samples to the ISU Plant Disease Clinic for confirmation of Stewart's wilt infection.



Leaf symptom of Stewart's wilt.

[Enlarge](#) [1]

What are control measures?

Controlling flea beetle populations is the key for disease control. Future spread of Stewart's wilt will be dictated by the second and third generations of flea beetles. The higher the populations of these generations, the more likely Stewart's disease will be a disease concern. Current threshold values for flea beetle control are based on physical damage to the plants; Stewart's wilt has not been taken into consideration.

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