New bacterial pathogen found in corn in Texas

October 17 2016, by Kay Ledbetter

The initial lesions of bacterial leaf streak may extend beyond the veins. Credit: Texas A&M AgirLife photo by Dr. Ron French

A new bacterial pathogen, bacterial streak, was found in the Texas Panhandle corn crop this year, and while its effects were inconsequential, it bears watching in the future, according to Texas A&M AgriLife Extension Service specialists.

In June and July, corn leaves with brown, tan, orange to reddish streaks or stripes were observed and fully confirmed in a few fields in Hansford and Hutchinson counties in the Texas Panhandle, said Dr. Ron French, AgriLife Extension plant pathologist in Amarillo.

French visited a couple fields with infected plants and saw that in initial development, leaf lesions were limited to between-leaf veins. But in later development, the lesions extended beyond the veins with a wavy, uneven shape rather than rectangular shape.

The lesions varied in length from half an inch to several inches and occurred throughout the leaf blade, French said. The lesions were translucent when held up to the light. These foliar symptoms were also seen in several other states where the disease has been found.

The disease, bacterial streak, caused by the Xanthomonas vasicola pv. vasculorum bacteria, was confirmed in Texas by French's plant pathology lab in Amarillo, the Great Plains Diagnostic Network Regional Lab at Kansas State University, and by the U.S. Department of Agriculture Animal and Plant Health Inspection Service in Maryland, he said.

The lesions of bacterial leaf streak are translucent when held up to the light, according to Dr. Tom Isakeit, Texas A&M AgriLife Extension Service plant pathologist. Credit: A&M AgriLife photo by Dr. Tom Isakeit

The good thing, said Dr. Tom Isakeit, AgriLife Extension plant pathologist in College Station, is this disease has not been confirmed in other corn production areas of Texas. Also, there is no indication that this disease can cause adverse impacts in yield or quality in any of the states where it has been found.

"Although we don't anticipate that this disease will be as important as some other diseases corn growers have to deal with in Texas, it's a new disease, and we need to learn more about it in order to provide better disease management strategies," Isakeit said. "So if growers think they have it, they should contact us or their local AgriLife Extension county agent."

French said while many diseases caused by other Xanthomonas can be seed borne on other crops, it is not known if bacterial leaf streak of corn is seed borne.

The specialists advised when scouting for bacterial leaf streak in corn, producers should be careful not to confuse its early symptoms with gray leaf spot, a fungal disease caused by Cercospora spp. Gray leaf spot appears as rectangular lesions or stripes, which are smooth and tend to stay within the veins. These lesions are initially tan and later may appear gray as the fungus produces spores.

A corn leaf found in the Texas Panhandle exhibits the longer lesions or streaks caused by the bacterial leaf streak pathogen. Credit: Texas A&M AgriLife photo by Dr. Ron French

Advanced symptoms of gray leaf spot are quite different from bacterial leaf streak, French said. Because gray leaf spot is dependent on hot weather, high relative humidity and moisture on the leaves, it may be more prevalent during flowering, while bacterial leaf streak has been observed as early as V7 or seven leaf collar.

In Texas corn production areas, gray leaf spot is a minor disease, if it occurs at all, Isakeit said.

"As a general recommendation for managing bacterial diseases, crop rotation should be practiced and weeds, especially grasses, should be controlled," French said. "For bacterial diseases of corn, there are no

chemical treatments available.

"Time will tell whether bacterial leaf streak becomes an important disease in Texas, but as this disease becomes the subject of research, we can expect to see more information on hybrid susceptibility and factors affecting disease severity."

More information: For more information on this and other corn diseases, go to: sickcorn.tamu.edu

Provided by Texas A&M University

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