



PLANT DISEASE IN KANSAS

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FUSARIUM WILT, A COMMON PROBLEM IN CHRYSANTHEMUMS

Fusarium wilt, a common foliar wilt of chrysanthemums, was found in several commercial greenhouses in Kansas this summer and fall. It was also identified in a sample received by the Kansas State University plant diagnostic lab. This disease, caused by *Fusarium oxysporum* f. sp. *chrysanthemi*, affects the leaves and stem of the plant and may only affect one section of the plant while the rest of the plant remains healthy. It grows best in hot, humid conditions, preferring temperatures of 84-95°F during the day and 75-84°F at night. It may also infect gerbera, Paris daisy, and African daisy. When the plants are at cutting stage, they may be positive for the disease but appear healthy until they become more mature. It's characterized by foliar wilt and eventual death of some of or all of a chrysanthemum plant (Fig. 1). It is a soil borne pathogen and may infect a healthy plant placed into infected medium. The roots remain unaffected by this pathogen.

Once a plant is infected it may not be cured. A good method of control is to rogue infected plants and do not compost them but throw them in the trash. Do not take cuttings from plants showing symptoms, and disinfect media prior to reusing it or do not reuse it. Place plants on a table with good drainage rather than on the ground if possible and regularly clean up plant debris, as infected debris can harbor the disease. If using tools to prune plants or take cuttings, disinfect tools between plants to avoid spreading disease from one plant to another.



Figure 1: *Fusarium* wilt of chrysanthemum is characterized by a foliar wilt on some or all of a plant.

CURRENT STATUS OF BACTERIAL STREAK OF CORN IN KANSAS

In 2018, KDA and Kansas State University continued surveying bacterial streak of corn, caused by *Xanthomonas vasicola* pv. *vasculorum*. This was the third year of survey for this disease in Kansas. It was first found in 18 counties in Kansas in 2016 during a targeted pest survey. During this survey members of KDA, USDA, and KSU scouted many counties across the whole state for infected plants, but focused most on irrigated fields as the irrigation would have helped the pathogen spread and survive. It was somewhat difficult to spot the disease, however, as it was late in the growing season and many other foliar diseases had infected the plants by that point. Members of KDA and KSU confirmed 20 more counties in 2017, and identified 8 additional counties: Grant, Greeley, Hodgeman, Morton, Reno, Stafford, Washington, and Wichita counties (Fig. 1). This brings the total to 46 counties, mainly in the western half of the state. This is due to the fact that it has a generally drier climate and irrigated fields are more common, and it is overall hotter there, which favors the growth of the pathogen. All but 11 counties have been scouted. As in 2017, they went out earlier in the growing season to avoid the same difficulty detecting it that occurred in 2016. This disease has been found on corn plants as early as V7 stage, earlier than many common foliar diseases of corn. Much of KDA's scouting occurred in the southern half of the state, as KDA performed a survey on corn in this area. The northern half was targeted by KDA in 2017. KDA and KSU plan on continuing to monitor for the disease in the counties not yet identified as positive.

Bacterial streak is a foliar disease caused by the bacterial pathogen *Xanthomonas vasicola* pv. *vasculorum*. It enters the plant leaves via natural openings, such as stomata. It is characterized by

irregular-shaped small brown lesions on the leaves (Fig. 2). When backlit, the lesions are translucent and appear yellow (Fig. 3). This is in contrast to the common fungal disease gray leaf spot, which has small rectangular lesions that are not translucent when held up to a light. Backlighting the lesions is a good diagnostic tool to tell these two diseases apart, as the lesions look very similar and can cause misdiagnosis. The disease may be spread by water splashes and may be seed-borne. It is most common in irrigated fields planted to continuous corn, although it can also be found in non-irrigated fields and fields with crop rotation. It favors warm temperatures. It is not known if this disease affects yield, although the necrosis that occurs because of the bacterial lesions may have a detrimental effect on photosynthesis, which in turn may decrease the potential yield of an affected plant. This pathogen does not spread to soybeans but has been found both in corn and in sugarcane, where it causes a vascular wilt called gumming disease. The vascular wilt symptoms have not been found in corn.

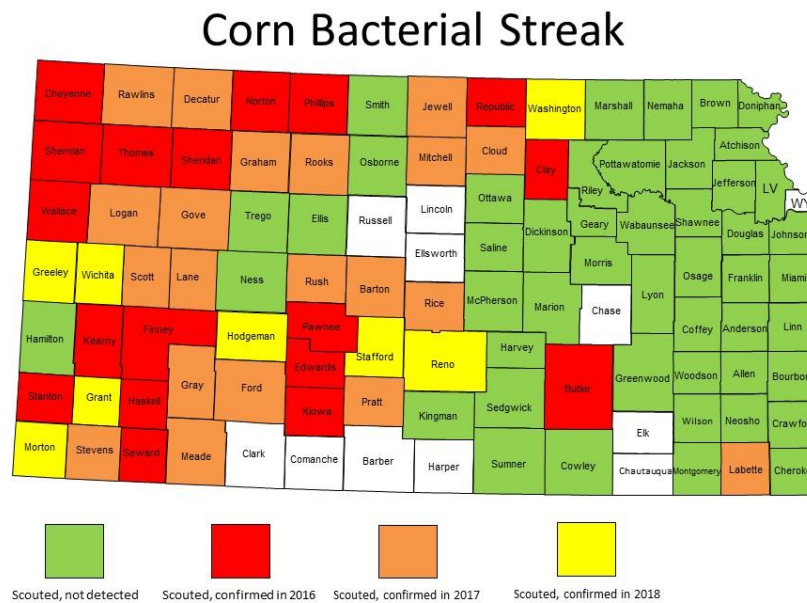


Fig. 1: Map of Kansas counties scouted by KDA, KSU, and USDA for bacterial streak in 2016, 2017, and 2018. Counties confirmed positive in 2016 are depicted in red, counties confirmed positive in 2017 are depicted in orange, and counties confirmed positive in 2018 are depicted in yellow.



Fig. 2: Brown lesions with uneven edges characteristic of bacterial leaf streak in corn.



Fig. 3: When backlit, the brown lesions appear translucent yellow.

Plant Protection and Weed Control staff work to ensure the health of the state's native and cultivated plants by excluding or controlling destructive pests, diseases, and weeds. Staff examine and analyze pest conditions in crop fields, rangelands, greenhouses, and nurseries. Action taken to control potential infestations of new pests, whether they are insects, plant diseases, or weeds, is beneficial to the economy and the environment.

Our mission is to:

- Exclude or control harmful insects, plant diseases, and weeds;
- Ensure Kansas plants and plant products entering commerce are free from quarantined pests;
- Provide customers with inspection and certification services.

Visit our website at: agriculture.ks.gov

Author:
Gaelle Hollandbeck
State Plant Pathologist
1320 Research Park Drive
Manhattan, KS 66502
Phone: (785) 370-1046
Fax: (785) 564-6779