KANSAS DEPARTMENT OF AGRICULTURE

Plant Disease in Kansas

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Special points of interest:

- *Wheat viruses in the spring crop*

Wheat viruses in the state crop

Plant disease pressure has been slow to build in the state's wheat crop. Normally, we talk about the rust diseases and their imminent buildup at this time of the year. Because of dry droughty conditions prevalent in Kansas, Oklahoma, and Texas, the rust diseases have been slow or absent in progression. That is a good thing but hardly makes up for the drought impact on the crop.

Currently, our concern is viral diseases. Last fall, survey found some significant infestation of the wheat streak mosaic complex in north central/northwest Kansas. Wheat was difficult to survey because plants available for examination were small from dry fall planting conditions. Survey conditions were less than ideal. What we are seeing now are fields in this same general area where there was some indication of a problem last fall, with specific reports in Phillips, Osborne, Gove, and Rooks. Wheat streak mosaic (Figure 1) is common to fields and in extreme situations, infection exceeds 30-100 %. Some fields have been lost and growers have cultivated out the diseased crop. Reports from KSU indicate a mixed virus infection of wheat steak mosaic and High Plains virus in some of these fields.

Figure 1. Wheat streak mosaic complex with yellow striping and necrosis.

A little about the disease and spread: Dry conditions in fall and early spring increase the chance of this viral complex infecting fields because of the behavior of the vector, microscopic eriophyid mites. The mites feed on wild grasses and volunteer wheat where they acquire the virus. The mite during these droughty conditions multiply in high numbers and disseminate by climbing to the tips of plants and hitching a ride on wind currents spreading themselves into planted wheat. When infected, plants appear stunted with yellow streaking and curled leaves. WSM plants are first found near field margins or when severe, consistently through entire fields.

The other viral disease of concern is Barley Yellow dwarf. This disease is transmitted by aphids that migrate into fields in fall and early spring again by wind currents. The disease is reported statewide and presently the top candidate for disease loss of the spring crop. Southeast Kansas is reported to have high levels (D. Jardine, E DeWolf KSU) and export survey has identified major problems (10-50% field infection) in central Kansas and spotty problems in western counties (KDA staff). Flagged yellow to purple leaves are symptomatic for infected plants and fields often will have areas of a few feet in diameter of these flagged plants stunted in severe cases (Figure 2, second page).

Forecast: Look for the rust diseases, particularly leaf rust to build up in south central Kansas with recent rains. Stem rust has been reported near Kansas in Oklahoma. Scab is likely going to be a problem in southeast where rains have been frequent. Common bunt at harvest in western counties may be of significance. Many farmers planted late last fall waiting on moisture or seed did not germinate till soils cooled. Cools soils favor seedling infection by the fungus.

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INVASIVE SPECIES

Plant Protection and Weed Control Program

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, plants 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 quarantine pests;
- Provide customers with inspection and certification services.

The Plant Disease Survey in Kansas has been conducted since 1976. The survey addresses disease situations in field crops, native ecosystems, and horticultural trade. The Kansas Department of Agriculture works cooperatively with Kansas State University and Extension programs, United States Department of Agriculture, and various commodity groups.

Tree diseases

Tree or ornamental disease appear to about normal for this time of year. Cedar apple rust is common to cedars and appear as bright orange jelly like galls during wet periods. Anthracnose of sycamore and elm have been observed causing leaf spotting and defoliation.

Hosta virus x of hostas continues to found at some retailers by KDA staff. Levels are much lower after regulatory emphasis of a few years ago.

A few pine wilt plants are being reported but many of the tests recently have been negative from western Kansas. Drought and Diplodea perennial canker are responsible usually for death of pines this time of year.

What to be looking for: landowners should be aware of 1000 cankers disease of black walnut. See www.ksda.gov.

Pine sawyers emergence begins in late May and extends into the summer. By early July, some pines in nearby vicinity to carry over dead pines, will start showing wilting and death from pine wilt disease carried by the insects. Pines can still be removed to reduce disease pressure.

Sub soil moisture is still short in many places of Kansas and trees and shrubs will continue to need water and should be mulched.

Figure 2. Barley yellow dwarf of wheat with flagged yellow (arrow) or purple tipped leaves and a stunted area of about 3 feet in diameter. From page 1.