



# Plant Disease in Kansas

## Alfatoxin issues in the corn harvest

### Special points of interest:

- *Corn alfatoxin problems not unexpected.*
- *Late rains helped sorghum and soybeans*
- *Kansas Department of agriculture has petitioned FDA for a waiver to allow mixing of alfatoxin and non- alfatoxin corn, status pending*

Alfatoxin in this year's corn crop is again an significant issue both for growers and grain elevators as the crop continues to be harvested. The toxin is caused by a very common fungus that is named *Aspergillus flavus* (See image next page). In hot droughty conditions (dominant through our corn growing season) the fungus colonizes the ear and grain of corn at unusually high amounts. Insect damage will increase the severity of the disease.

Growers that have harvested grain and taken it to the elevator may have had a bad experience. Testing at receiving facilities may have found levels of alfatoxin. Depending on the elevator, level of toxin, or intended use the grain is set aside into separate storage bins or refused. Price docking is common and significant. It is important for grain elevator managers and

growers to understand the distribution of the disease in the production field. Pockets of disease in the field produce high to low concentrations of toxin in harvested loads. In a large semi-load of corn with several of these combine dumps, a one time probe is inadequate in getting the true average of the load as one may sample a "high" or "low" dump and not representative of the load. Six samples or some other number is suggested (dependent on size of trailer ) to get a 10 lb composite sample for testing.

FDA does not allow grain elevators to mix alfatoxin and non-alfatoxin contaminated corn but does allow low levels of alfatoxin tainted corn to be mixed with contaminated higher levels to lower the overall level of the higher toxin. Other considerations include for on-farm storage to have moisture levels be-

low 15% for short term storage and 13% for long term storage. Bins should be monitored for crusty or moldy corn periodically as the disease can mold corn in the bin. If sampling, again a 10lb composite of corn from either different parts of the bin or from a grain stream are best.

Can one avoid Alfatoxin issues? Certainly irrigation can reduce levels during production because of the tie with drought conditions. Rotation to other crops can also help as these crops don't have the issues that corn does. This includes wheat and sorghum but does not include cotton. Corn following these crops generally has less alfatoxin. Insect control is of importance along with optimum nitrogen levels and tillage practices of saving soil moisture. Unfortunately resistance is not well developed for hybrids.

## Wheat disease time?

This is the time of the year that wheat streak mosaic can be an invasive to wheat fields from nearby volunteer wheat and some of the grasses in ditches. It is important to provide a clean or tilled strip of 50 ft of so between wheat and volunteer wheat when possible in the western half of the state where the disease is generally more

common. Planting in October reduces the risk as opposed to planting in September or late August.

If a susceptible variety was planted and volunteer wheat is nearby, it is prudent to start scouting those fields in late October. Yellow streaked plants indicate a problem and

should be tested. A little disease (3-5%) usually indicates a much bigger problem next spring.

PLANT PROTECTION AND WEED CONTROL  
PROGRAM

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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.

## Row crop disease this fall

Several diseases in the fall crops have been observed and taken some toll on the harvest. Charcoal rot has been observed in many soybean fields in central Kansas and southeast counties. In sorghum, anthracnose and target leaf spot were significant in some seed nurseries but much lighter in incidence in production fields.

Other diseases of less concern have been *Cercospora* leaf blight in soybean and southern rust in corn.

Drought has been the number one issue to all crops this summer. Some late rains have provided some relief to soybeans,

sorghum, and sunflower.

Soybean rust which was a concern to Kansas and Missouri soybeans when a hurricane tracked in from the Gulf last month, did not spread this far northward.

Figure 1. *Aspergillus* olive green mold colonizing ears of corn. Alfatoxin is produced from this fungus. Image: Agfax.com

