

News Column

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### **Wheat fungus re-emerges in Kansas after decades**

At the recently held Ellis County Extension Pre-plant Wheat School one of the presentations was about Flag Smut. Our meeting room was full but I figure that quite a few farmers may still have questions about this disease that has re-emerged after being absent for many years in the state.

Flag Smut is a fungal disease of wheat that occurs in many wheat-producing regions of the world. Flag smut was first identified in arid regions of Australia in the late 1800s. Historically, flag smut was known to occur in the northwestern United States, but it had not been detected in the Great Plains since the 1930's. In May of 2015, flag smut was detected in multiple counties within central and western Kansas. The counties it was found in were Phillips, Smith, Rooks, Graham, Wallace, Logan, Trego, Ellis, Lincoln, Wichita, Scott, Ness, Rush, Barton, Pawnee, Edwards, Stafford, Kiowa, Pratt and Dickinson..

Weather conditions during the growing season for this year's wheat crop have been ideal for the spread of flag smut, particularly in the more arid regions of the state.

Flag smut presents no human or animal health concern and has no impact on grain quality. The disease is a concern because some countries have import restrictions on grain produced in areas where flag smut is known to occur. It can have a negative impact on wheat yield, the severity of which is determined by the infestation level of the field.

Symptoms of flag smut include stunted plants with deformed tillers. The leaves of infected plants are twisted and have long gray lesions that break open to release black, powdery spores.

The spores of the fungus that causes flag smut can survive in the soil for at least 4 years, but viability of the spores decreases rapidly during this time. Spores may survive longer in arid regions where the dry soil conditions prolong viability of the fungus. The fungal spores also can survive on the seed surface. Seed contaminated with the fungus can introduce the disease to new fields.

Flag smut can be moved to adjacent fields by wind, plant debris, or equipment. The fungus also can be moved on seed contaminated with the fungal spores.

Fungicide seed treatments are the most effective way to manage flag smut. There are many seed treatment fungicides labeled for control of flag smut and many of the widely marketed fungicides should provide excellent control of the disease. Commercially applied seed treatment is recommended to insure that all seeds are coated with the fungicide treatment.

Crop rotations with non-host crops such as soybeans, sorghum, or corn provide time for the fungal population to decline between wheat crops and lower the risk of infections in subsequent years. It also may be possible to reduce the risk of severe disease by avoiding early planting conditions that place seed into warm moist soils, which are known to favor infection by the flag smut fungus.

K-State Research & Extension (KRSE) has a publication “Wheat Flag Smut” MF-3235 and “Seed Treatment Fungicides for Wheat Disease Management 2015” that can be found at the KRSE bookstore <http://www.bookstore.ksre.ksu.edu/> or stop by your local K-State Research & Extension County Office for those publications.