

News Column

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Wheat Flag Smut

During the 2015 growing season a fungal disease of wheat that has been absent in Kansas for decades re-emerged in the state. The disease is of 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.

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.

Surveys of wheat fields this year have once again detected flag smut in Ellis County and other counties as well. As mentioned earlier the disease is of concern because some countries have import restrictions on grain produced in areas where flag smut is known to occur. In other words countries that buy our wheat might refuse to do so one day? Flag smut presents no human or animal health concern and has no impact on grain quality.

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 and persist in fields already affected and planted again with infected seed.

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, which is necessary for adequate control.

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.