

SUMMARY AND UPDATE ON FLAG SMUT PRESENCE IN KANSAS

During the week of May 6, 2015, during regular and on-going disease survey work, wheat flag smut (*Urocystis tritici*) was initially detected in a field demonstration plot in Rooks County and confirmed by laboratory result. Since that initial detection, the survey teams ramped up efforts to scout for the disease.

Those efforts found disease presence at confirmed sites in Edwards, Ellis, Rooks, Phillips, Wallace and Logan counties. Initially, all sites were KSU variety demonstration plots. At the Rooks County site there is flag smut presence in production fields surrounding the demonstration plot.

KDA is working closely with K-State Plant Pathology and Research and Extension and USDA APHIS PPQ on the investigation and the work is ongoing to determine the extent of the disease in Kansas.

At the confirmed sites, KDA is working cooperatively with the local extension agents and farmers affected. There have been notices of regulatory action issued surrounding these infected plots. Access to the fields has been restricted to prevent any movement of people or equipment in and out of the field. The restriction includes a 30 foot border around the perimeter of the field.

Protocols for handling the diseased sites are currently being developed. The main objective is to prevent the wheat from these fields from entering the grain supply chain. Options will include protocols for equipment cleaning to reduce the likelihood of spreading the flag smut spores to other locations.

Background on flag smut

Flag smut (*Urocystis tritici*) was first identified in arid regions of Australia in the late 1800s. It was known to be in Kansas in 1920-30s. A sizeable research plot in Leavenworth County by the Kansas State Research and Extension focused on smuts and bunts of small grain crops in Kansas. Following the establishment of the KDA/KSU plant pathology disease surveys in 1976, flag smut has not been seen in Kansas.

Flag smut is a fungus carried by spores that can be borne on the seed, blown by wind short distances or moved with machinery. The fungal spores produced near flowering of the crop have the possibility of surviving up to four years in the soil. The spores infect the seed prior to emergence from the soil. Symptoms include dark streaks on the leaves of the infected wheat plant and a twisted flag leaf. Flag smut tends to stunt growth and reduce tillering but has generally low impact on yield when compared with other wheat diseases.

Research has shown that the use of fungicide seed treatment, which is very economical, is highly effective in preventing the presence of flag smut and is an important tool in successful mitigation of the disease.

Primarily, flag smut is an export issue with 17 countries listing it as a harmful organism. It is present in other states in the U.S., including Washington and Oregon. The goal is to remain flag smut free, allowing exports of grain or seed to move out of Kansas.

There is no human or animal health concern or direct effect on grain quality related to flag smut.