



Plant Disease in Kansas

Diseases of Plants in Greenhouse Production and Freeze



Special Points: Winter storm will hurt landscape plants, winter wheat, and delay corn planting.

Over the past few weeks most major greenhouse operations have been inspected for compliance with the plant pest freedom standards of Kansas. Plants being distributed and sold throughout Kansas are subject to the regulations as an effort to protect consumers and producers from the introduction of serious pests into gardens, landscapes, and vegetable production fields.

Impatiens Necrotic Spot Virus which has a history of infection of large plantings was found in one operation in the Wichita area. Other locations were inspected and plants were found to be free of the disease. Thrips (vector of INSV) were found in about half of the locations. The operation that had the virus in production had overwintered a variety of plants. The virus carried over from the older plants

(some tested positive) to new crops of gloxinia, carnation, and coleus by the thrips.

Cucumber mosaic virus was another virus that was detected in production. It was identified in wandering Jew cuttings and baskets. Symptoms included color breaking, leaf distortion, and shortened internodes. The virus has a significant host range including many vegetable plants.

Damping off and Botrytis gray mold are both favored in greenhouse production when weather patterns are cool and damp. The two diseases were an issue in hoop houses. There plants were often on the cold ground with little air circulation and disease was stunting and killing plants in high numbers.

During the inspections, Impatiens were examined thoroughly for downy mildew. Impatiens

are a highly popular bedding plant used for landscape plantings and hanging baskets. Downy mildew has the potential to devastate plantings quickly and so far has not been reported in Kansas although last year DM was reported in Missouri production of impatiens.

Other diseases of interest but at low numbers were Hosta Virus X and powdery mildews. Verbena was found with a powdery mildew and the same mildew can infect pumpkin, squash, and cucumbers when they are in close proximity to each other.

FREEZE DAMAGE NOW POSSIBLE: Trees in bud stage suffer the most from freeze damage. Look for dead buds and poor leaf emergence. Thin skinned bark trees like maple will produce frost cracks on southern exposure side of trunks. See next page-

Wheat disease season has begun! Freeze injury is a possibility.

The wheat crop has slowly been growing over the past five weeks in much of Kansas and appears to be in good health but will digress with the current cold temperatures. Precipitation has been frequent in some areas and cooler temperatures have been prevalent limiting fungal infection. Currently in Kansas, wheat disease pressure is very low. Barley yellow dwarf can be found in southeast Kansas in fields near the Oklahoma border from Columbus to Coffeyville. Symptoms

are not very strong yet and take some examination to be found. Powdery mildew can also be observed on lower leaves and stems in southeast fields.

Freeze damage will stop many fungal infections and will slow up rust epidemics if Oklahoma wheat suffers freeze damage (the good).

As mentioned the most serious concern currently to the crop is in southern counties from freeze damage with the current storm

(the bad). Kansas Ag Statistics report on April 7 had wheat jointed 27 % in SW, 26 % in C, 41% in SC, 44% in SE. Southwest Kansas morning temperatures were around 19-21 F on April 10 and Wichita and Pratt have temperatures predicted to get down to 22-24 F over the next couple 36 hours. Jointed wheat FEEKES 6 stage (1st node exposed above ground and stems are elongated) is at risk and past F6 is more at risk.

The standard is two hours of exposure at 24-30 F degrees that will damage plants. Look for SW, C, SC to have problems. Damage will appear as leaves yellowing and limp, silage smell, brown stems at nodes, and later white sterile heads if the damage is severe. Damage will appear in about 5 days to leaves. Temps in SE KS predicted warmer and wheat should be OK. See images on next page.

PLANT PROTECTION AND WEED CONTROL PROGRAM

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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.



INVASIVE SPECIES

Freeze damage images wheat (2007) and landscape plant damage



Above: Wheat with severe freeze damage (F8-9), loss of stem structure (the ugly), J Appel KDA. Left: darkened node from freeze. J Shroyer,



Example of Frost Damage on young tissue. These euonymus bushes were severely stunted but grew out of it. Trees and bushes have enough food reserves to regrow new leaf tissue under normal circumstances by mid June or so. Plants may be bushy with re-leaf. Plants already severely stressed can die from this injury and will not re-leaf. Don't overwater affected plants. J. Appel, KDA.