

TAR SPOT IN DECORATIVE TEXAS CORN

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BACKGROUND

In October 2024, tar spot fungus (*Phyllachora maydis*) was confirmed on leaves of dried corn plants for sale as decorations at large retailers across Texas and other states across the South. In recent years, tar spot has become a significant disease problem in corn grown in Midwestern states, causing significant yield losses and requiring additional inputs of fungicides for management. To date, it has yet to be confirmed in corn grown in Texas and other southern states, with the exception of Florida and Georgia. The finding of infected corn in Texas, even intended for non-farm use, raises concerns about the introduction of the pathogen to the state. Tar spot fungus only infects corn and not other crops, and it is not a human or animal pathogen.

SYMPTOMS OF TAR SPOT

The dried corn leaves seen at retail stores had circular to somewhat circular black spots, flat with the leaf surface or slightly raised (see images to right). They had either no, or a slightly rough texture. Within these spots are spores of the fungus, which are dormant.



Appearance of tar spot on decorative corn for sale.

KEEPING TAR SPOT OUT OF TEXAS

Some pathologists are concerned about interstate movement of corn stover, or grains with leaf or husk pieces, as a means of long-distance movement of the pathogen. This would be the greatest risk for introducing the pathogen to Texas, as these materials could end up on a farm. Most of the infected ornamental corn currently present in Texas is not likely to end up in a field where corn is grown. However, such corn should be destroyed. Burial in a landfill or just burial in the ground would prevent such corn from creating a risk to Texas corn crops next year.

DISEASE RISK FOR TEXAS

Tar spot has been endemic to Mexico and several Central and South American countries for decades. In the U.S., it was first reported in 2015 in Illinois and Indiana. Since then, the disease has been reported in 15 states and southern Ontario, Canada. Tar spot is primarily a problem in Midwestern states. In Southern states, it has been reported only in Georgia and Florida. The initial cause of the introduction of this pathogen to the U.S. is not known.

The fungus is not seedborne, nor can the spores move to any great extent by wind, as is the case with the movement of southern rust spores across the continent. Following activation by wetting, tar spot spores move from crop residue on the soil surface to adjacent corn plants within a field via wind and splashing water. Once infections become established on upper portions of the corn plant, spores move to nearby fields (less than 1-mile) by wind-driven rain, or by movement of dried leaves.

The introduction of this pathogen to a corn field would require placement of infected corn leaf residue on the soil surface quite close to it, plus water from rain or irrigation to release the spores. The climates of the corn-growing areas of Texas have limited favorability for disease development. For infection by the tar spot fungus to occur, the required temperature range is 60°F to 70°F, as well as at least seven hours of free moisture on leaves. Symptoms are seen 14-20 days after infection.

Furthermore, other factors would limit disease establishment in Texas. Specifically, the only host of the fungus is corn and the fungus is not capable of living saprophytically on crop residue. Thus, tillage of crop residue and crop rotation would be useful control measures in Texas. Conditions affecting the overwintering or survival of the tar spot pathogen under Texas conditions are not yet known.

At present, corn germplasm resistant to tar spot is not available. Fungicides are available for managing tar spot, but their use represents an additional expense to growers.

RECOGNIZING TAR SPOT IN A CROP

The symptoms of tar spot on corn leaves include dark brown or black, somewhat circular spots, which may be raised (see image below). Sometimes the spots are surrounded by a light brown or yellow leaf tissue. In Texas, the overwintering stage (telial) of the southern rust fungus could be mistaken for tar spot, but the telial stage will always be found with the repeating stage (uredial) of southern rust.

A microscopic examination can distinguish tar spot from other diseases. The two diagnostic clinics in Texas can be consulted for a diagnosis:

- [The Texas High Plains Plant Disease Diagnostic Laboratory in Amarillo](#)
- [The Texas Plant Disease Diagnostic Clinic in College Station](#)



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