

## DISEASES OF CORN

# Tar Spot

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Tar spot of corn (caused by the fungus *Phyllachora maydis*) was first confirmed in the United States in 2015 on dent corn in seven counties in northwest Indiana and ten counties in north-central Illinois. The disease was detected very late in the growing season and no yield loss was reported in fields where the disease was confirmed.

Our knowledge of the impact that tar spot could have on U.S. corn production is limited, but it is important to understand how to identify the disease in case it appears in future years.

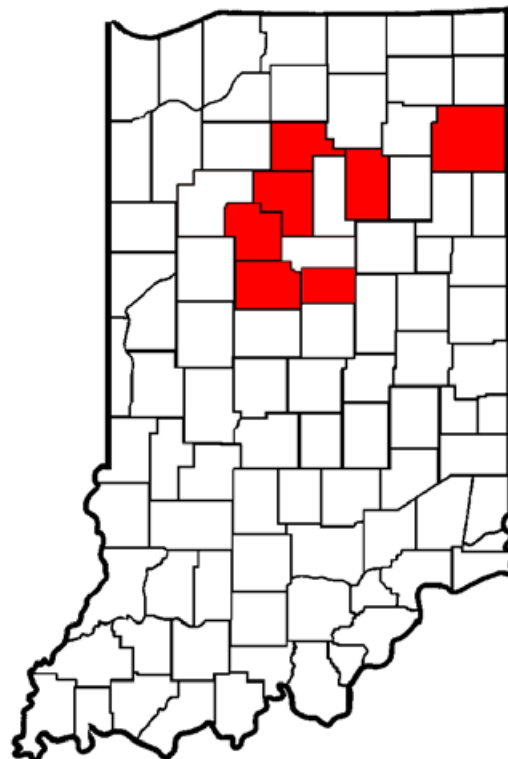


Figure 1. In 2015, tar spot was confirmed in Allen, Carroll, Cass, Clinton, Fulton, Tipton, and Wabash counties in Indiana.

This publication describes:

1. How to correctly identify tar spot
2. Conditions that favor disease development
3. The disease's potential impact

### Identification

Leaves with tar spot have small, raised black and circular spots, which are fungal structures called ascomata (Figure 2). Tar spot symptoms and signs also can be present on leaf sheaths and husks. Ascomata can appear on both healthy and dead tissue, and they are often surrounded by a narrow, tan halo (Figure 3). The ascomata are raised and feel bumpy to the touch. The leaves of infected plants may have few ascomata, or they can densely cover the leaf (Figure 4).

It is easy to confuse ascomata with structures associated with other fungal diseases, such as the black pustules the corn rust pathogen produces. A laboratory diagnosis is required to distinguish tar spot ascomata from rust pustules or other pathogens.

Tar spot also can be easily confused with the black saprophytic organisms that grow on dead leaf tissue; however, saprophytes usually have a dusty appearance and you can rub them off the leaf tissue (tar spot ascomata cannot be rubbed off).



**Figure 2.** The tar spot fungus produces raised, black fungal structures called ascomata.



**Figure 4.** Leaves affected by tar spot can have densely packed fungal structures.



**Figure 3.** Tar spot ascomata can be surrounded by a narrow tan halo.

### Favorable Conditions

The majority of information about tar spot originates in Mexico and Central America, where the disease is prevalent. In these areas, cool, humid conditions with long periods of leaf wetness are favorable for infection and disease development.

The fungus that causes tar spot does not survive well in the absence of a plant host such as corn. And it is not known whether the fungus can survive an Indiana winter on infected corn debris.

Wind-driven rain and storms can spread the disease. In fact, it is suspected that spores of the tar spot fungus arrived in Indiana from a weather event that originated in Mexico and Central America. The tar spot fungus is not known to be seedborne.

### Potential Impact

In Mexico and Central America, the presence of *P. maydis* alone is not known to cause economic damage. However, the presence of *P. maydis* with another fungus that is associated with tar spot (*Monographella maydis*) can result in a disease complex that does result in yield losses.

*Monographella maydis* was *not detected* in any of the U.S. tar spot samples in 2015.

While it is still unknown what impact tar spot could have in the United States, we speculate that the disease occurrence will be limited and we believe that growers do not need to practice preventative management at this time.

The tar spot symptoms that were found in Indiana were observed across a range of hybrids, so we do not know if hybrids differ in resistance to tar spot. There are currently no fungicides registered in the United States to prevent or manage tar spot.

If you suspect tar spot is present in an area, submit corn samples to a National Plant Diagnostic Network university diagnostic lab for diagnosis. In Indiana, contact the Purdue Plant and Pest Diagnostic Laboratory (PPDL) for information about collecting and processing samples: [ppdl.purdue.edu](http://ppdl.purdue.edu).

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