

## Fast facts about tar spot

- Caused by fungus *Phyllachora maydis*
- First identified in the U.S. in 2015
- Now found in 13 states<sup>1</sup>
- Appears as small, raised black circles on leaves that do not rub off
- Damages corn by reducing photosynthetic capacity of leaves
- In severe cases, can cause yield losses up to 50%<sup>3</sup>

## Tips for managing tar spot

- Select hybrids with higher tar spot tolerance.
- Know the risks:
  - Monitor incidence of tar spot in your immediate area and wider region – spores are airborne.
  - Watch the weather as tar spot favors cool temperatures, cloudy days, high humidity and 7+ hours of nighttime dew.
  - Fields with high productivity and high nitrogen fertility may be more susceptible to severe disease.
- Scout fields to spot infestation early.
- Apply a fungicide with multiple modes of action against tar spot and consult with a crop protection specialist on ideal timing and rate.

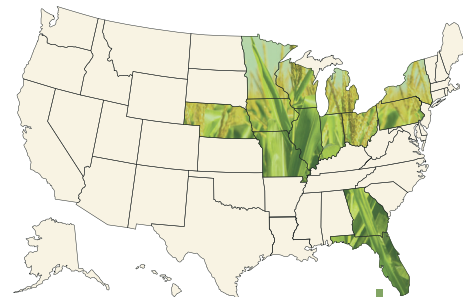
Information about tar spot is also available in the Corteva Agriscience Corn & Soybean Disease ID Guide (<https://www.corteva.us/content/dam/dpagco/corteva/na/us/en/files/resources/DOC-Corn-and-Soybean-Disease-ID-Guide.pdf>).

## Getting defensive about tar spot

Since tar spot began causing significant issues in Midwest corn fields in 2018, farmers, agronomists and industry innovators have been working to understand it better and develop new ways to protect yields and profits from this fungal disease.

### A growing problem in U.S. corn fields

It may feel like tar spot came out of nowhere, but it's actually not a new disease. Tar spot was first identified in Mexico in 1904. It wasn't seen in U.S. farm fields until 2015, and then really made its debut in 2018 with a severe outbreak in the Midwest. By 2021, cases had been seen in 13 states.<sup>1</sup> Like many fungal diseases, tar spot can overwinter in fields in the residue. But unlike other diseases, tillage and rotation don't seem to help much. That's because when tar spot stomata (the dark structures on the leaf) release their spores, they can travel in the air as far as 800 feet.<sup>2</sup> Infections can quickly spread across a wide area with storm systems.



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Tar spot causes damage by reducing the photosynthetic capacity of corn leaves. It spreads from lower to upper leaves, to leaf sheaths and eventually the husks of developing ears. Severe cases can reduce stalk quality, impacting the plant's ability to defend against soil-borne pathogens and leading to stalk rot and lodging. In serious cases of infection, corn yield losses can be as high as 50%.<sup>3</sup>

### Favorable conditions for tar spot

Scientists are still learning more about what makes tar spot thrive. According to the Purdue University Extension, tar spot is associated with cool temperatures (average day temperatures of 59–70°F), humid conditions (85% relative humidity) and periods of leaf wetness lasting more than 7 hours.<sup>4</sup> Other research has shown a correlation between high-productivity, high-nitrogen-fertility fields and increased risk and

severity of tar spot infection.<sup>2</sup> Once tar spot begins producing spores, it will keep producing them (and infecting more plants) as long as conditions remain favorable.

## Identifying tar spot

Tar spot appears as small, raised black circular spots which cannot be rubbed off. Sometimes these spots are surrounded by a tan halo, which is called a fish-eye lesion. If tar spot is suspected, it's a good idea to follow up with laboratory testing to distinguish tar spot from other possible pathogens. If tar spot was an issue in your region last season, it's likely to appear again, so being prepared with management strategies is essential.

## Managing tar spot

Choosing hybrids with strong tolerance and using an effective fungicide are currently the best defenses against tar spot. One option is Aproach® Prima fungicide, which has two powerful modes of action against tar spot. With each season, agronomists are learning more about the best application rates and timing for fungicides against tar spot, so farmers should definitely consult closely with their crop protection team about the right strategy for their acres. Scouting is vital to spot early stages of infection and get fungicide on the fields. Growers should also evaluate their hybrids for tar spot susceptibility.

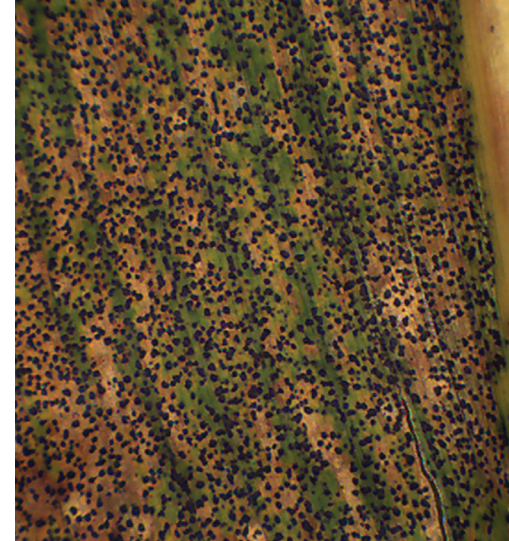
Weather is a key factor in tar spot infestations, so rates of infestations this year will be highly dependent on field conditions. While everyone hopes for a light disease year, whenever tar spot shows up, researchers are taking the opportunity to learn more. With each season, we're getting smarter about this new threat to yields and developing new and better ways to combat it.

## Identifying hybrids with tar spot tolerance

Corteva Agriscience researchers are also working to identify and develop hybrids with tolerance to tar spot. Scott Heuchelin, Corteva Agriscience North America Pathology and Global Phytosanitary Lead, said Corteva has already identified hybrids that are showing very good tolerance. Meanwhile, researchers are zeroing in on the best lines to breed for tar spot tolerance and working to isolate genes that play a role. "Over the past four years, we've been looking at hybrid performance in tar spot across the Corn Belt and we're able to use that data to make predictions about the hybrids that would be favorable options," Heuchelin said. Corteva's network of IMPACT testing plots is key to this effort. "We're looking at products in very specific micro-environments favorable to tar spot," Heuchelin explained, helping Corteva bring better-performing tar-spot-tolerant hybrids to market faster for farmers who need them all across the Corn Belt.



**Scott Heuchelin,**  
Corteva Agriscience North  
America Pathology and  
Global Phytosanitary Lead



*Tar spot appears as small, raised circles which may also be accompanied by a halo, creating a fish-eye lesion. Unlike spots seen with other diseases or pest damage, the black spots do not rub off.*

<sup>1</sup> "Tar Spot." Corn ipmPIPE. February 17, 2022. <https://corn.ipmPIPE.org/tarspot/>.

<sup>2</sup> "Corn & Soybean Disease ID Guide." Corteva Agriscience. April, 2021. <https://www.corteva.us/content/dam/dpagco/corteva/na/us/en/files/resources/DOC-Corn-and-Soybean-Disease-ID-Guide.pdf>.

<sup>3</sup> "Field Facts: Tar Spot." Corteva Agriscience. February 9, 2022. [https://www.corteva.us/Resources/inputs-and-insights/field-facts-disease-tar-spot.html?cid=mkch%3Aeml\\_mkt%3Aaql\\_etry%3Aus\\_brnd%3Acpm\\_agny%3AlHA\\_cp%3ACPN-57\\_cpno%3A101055\\_cpds%3Ainputs-and-insights-2022\\_](https://www.corteva.us/Resources/inputs-and-insights/field-facts-disease-tar-spot.html?cid=mkch%3Aeml_mkt%3Aaql_etry%3Aus_brnd%3Acpm_agny%3AlHA_cp%3ACPN-57_cpno%3A101055_cpds%3Ainputs-and-insights-2022_).

<sup>4</sup> Telenko, Darcy, and Tom Creswell. "Diseases of Corn Tar Spot," Purdue University Extension. August, 2019. <https://extension.purdue.edu/fieldcroppathology/1864-2/>.

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