

# Tar spot

## Spreading across Ontario



### THREAT

Tar spot was first confirmed in Ontario's most southwesterly four counties in September 2020. Progression of the disease continues to move east quickly in 2021.

Tar spot, a foliar fungal disease, has been in the Midwest U.S. since 2015. It is a highly devastating disease. It can spread quickly and significantly reduce yields. Farmers need to be vigilant around discovery and treatment.

Tar spot appears as small, raised, black tar-like spots (stroma) scattered across the upper and lower leaf surfaces and husks. A tan halo may (or may not) appear around the black spots. Tar spot can be confirmed by rubbing the lesion; if the raised black spots do not rub-off, it is likely tar spot. •

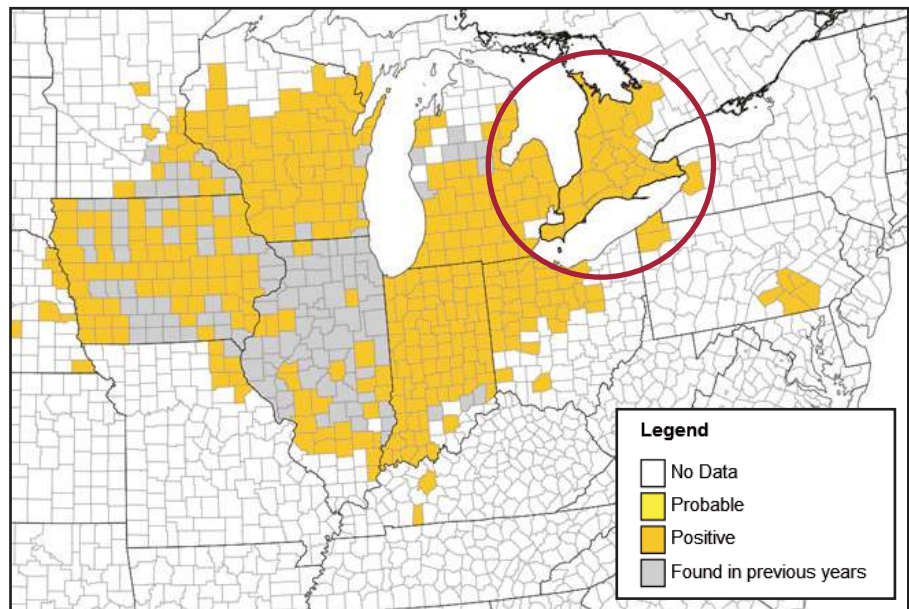


FIGURE 1. TAR SPOT OF CORN DISTRIBUTION IN 2021 (AS OF OCTOBER 14, 2021). MAP IMAGE COURTESY OF CORN IPM PIPE. SCOUT AND BE PREPARED TO TAKE ACTION IN AREAS THAT HAD POSITIVE IDENTIFICATION IN 2021 FOR TAR SPOT INFECTION, AS WELL AS FURTHER EAST.

## IDENTIFICATION



FIGURE 3. TAR SPOT LEAF SYMPTOMS. HYBRID INFECTION RANGED FROM HAVING BOTH STROMA WITH AND WITHOUT HALO (A), LARGE STROMA (B), TO ONLY PIN-POINT STROMA AT LOW 15% (C) TO HIGH 50% (D) SEVERITY. PHOTO COURTESY OF DARCY TELENKO, PURDUE UNIVERSITY.

## CONDITIONS AND CONTROL

### FAVOURABLE CONDITIONS

The ideal conditions for tar spot development are temperatures between 15°C to 21°C and high relative humidity (greater than 75 per cent) for seven to eight hours. Saturated soils and leaf wetness also contribute to the quick spread of this disease, which can go from three per cent to 30 per cent severity in several weeks. Typically, tar spot develops during the mid to late grain stages (R3-R6) when cooler and wetter conditions occur, often in the late summer. This was the case in Ontario in 2020, and now in 2021. When moderate temperatures and humid/wet conditions occur earlier in the season, as it did in 2015 and 2018 in the Midwest U.S., significant yield loss can occur. The pathogen did overwinter as expected in Ontario and the disease was observed in early July 2021 with ideal temperatures and humid/wet conditions present.

Yield losses from 20 to 60 bushels per acre were reported in 2018 by farmers in severely affected areas in the U.S. Estimations of 0.32 to 1.36 bushel per acre yield loss for every 1 per cent increase of tar spot on the ear leaf. Infection on hybrids ranged

from a few percentage points up to 50 per cent in most states, while Indiana was as high as 60 per cent, with yield losses from 23 to 41 bu/ac. In 2020, yield losses in Ontario, due to late occurrence of the disease, were minimal; but yield losses are anticipated in certain fields this year.

### CONTROL

- Select a more tolerant hybrid (talk to your seed retailer)
- Apply a fungicide that controls tar spot when forecast risk level is high (favourable weather) and where disease has been identified in the local area in previous years
- Best economic returns occur when controlling tar spot during corn growth stages V8 to R4
- Manage plant stress through proper populations and fertility
- Residue management and crop rotation

Continued work in this area has been taking place with OMAFRA's involvement in the Tar Spot Working Group and Crop Protection Network, which is partially funded by Grain Farmers of Ontario. ●

## WHAT YOU CAN DO

- Find out if the disease is present in your area by checking maps (<https://corn.ipmpipe.org/tarspot/>)
- Talk to local agronomists, farmers in your area, and OMAFRA specialists.
- In season, scout your fields to check for disease development and presence.
- Download the Tar Spotter app on your phone or computer to determine your in-season disease risk and aid in fungicide timing if required.

Tar spot is here to stay! Identifying tar spot in your area now can help assess the future risk. Taking these important steps immediately allows you to make management adjustments to limit the damage this new disease may cause in the future. •