Tar Spot in Sweet Corn: Be Alert!!

Sarah J. Pethybridge, Cornell AgriTech, Geneva, NY; **Julie R. Kikkert**, CCE Cornell Vegetable Program, Canandaigua, NY, and **Darcy E.P. Telenko**, Purdue University, Lafayette, IN.

There is a new disease on the block for sweet corn in New York! Tar spot is a fungal disease found first in Indiana and northern Illinois field corn in 2015. It has since spread throughout the Midwest. The disease was found in western NY corn fields every year for the past 3 years, and in central NY last year. **Tar spot has potential to severely reduce yields of susceptible corn varieties,** so we are closely monitoring disease spread and impact.

In sweet corn, tar spot causes crop loss by contributing to defoliation, reducing ear size, affecting ear shape and uniformity, reducing processing sweet corn kernel recovery, and decreasing ear marketability through unsightly tar spots on the husks. So far this year, the disease was detected earlier in the season in other parts of the country, and more recently in Ontario, central Pennsylvania, and eastern Michigan **(Figure 1)**.

Tar Spot Symptoms & ID

The fungus *Phyllachora maydis* causes tar spot. **Disease symptoms are small, raised, black spots that have a 'tarry' appearance and occur randomly across upper and lower leaf surfaces (Figure 2)**. Spots are usually 1/16th to 3/4th of an inch in diameter and typically extend through the leaf so that they can be viewed on both sides. They can also appear on corn husks and leaf sheaths. These black spots are fungal structures that contain spores.

In addition to the black spots, tan to brown lesions with dark borders ('fisheye') may also appear around the fungal structures. Black spots can be mistaken for older common rust pustules (which progress from orange red to black with age) or insect droppings. Insect droppings only appear on one side of the leaf and may easily be scraped off. Tar spots cannot be scraped or washed off and are typically raised from the leaf surface.

Scouting

Tar spot is most likely to be found in fields with a history of sweet or field corn and where corn has been planted in low lying areas and near windbreaks. Consider scouting fields on a weekly basis. The disease will likely first appear in the lower part of the plant canopy in fields with a history of foliar diseases.

Disease Cycle

The tar spot pathogen can survive between seasons on infested sweet and field corn residue left on the surface of the soil. There are also no alternative hosts – the fungus only survives on corn! Tar spot is not seedborne.

Tar spot is favored by growing seasons with high relative humidity (>75%), foggy days, and long dew periods (~7 hours of leaf wetness), just like conditions often experienced across New York! **Wind and rain splash disperse the fungal spores**. Canopy closure also modifies the environment and makes conditions conducive for the disease. Early disease detection will enable us to plan for subsequent outbreaks and develop protocols for minimizing crop loss.

If you see any suspicious black, tar spots on sweet corn leaves, please notify Sarah Pethybridge (Plant Pathologist, Cornell AgriTech, Geneva; sjp277@cornell.edu; **315-744-5359) or Julie Kikkert** (Cornell Vegetable Program; jrk2@cornell.edu; **585-394-3977 x 404).**

Figure 1. The distribution of tar spot in field and sweet corn by state and county to date in 2024. Source: Tar Spot - Corn ipmPIPE.

[Alt text]: Map of US states and counties with gray, orange, or blue shading.

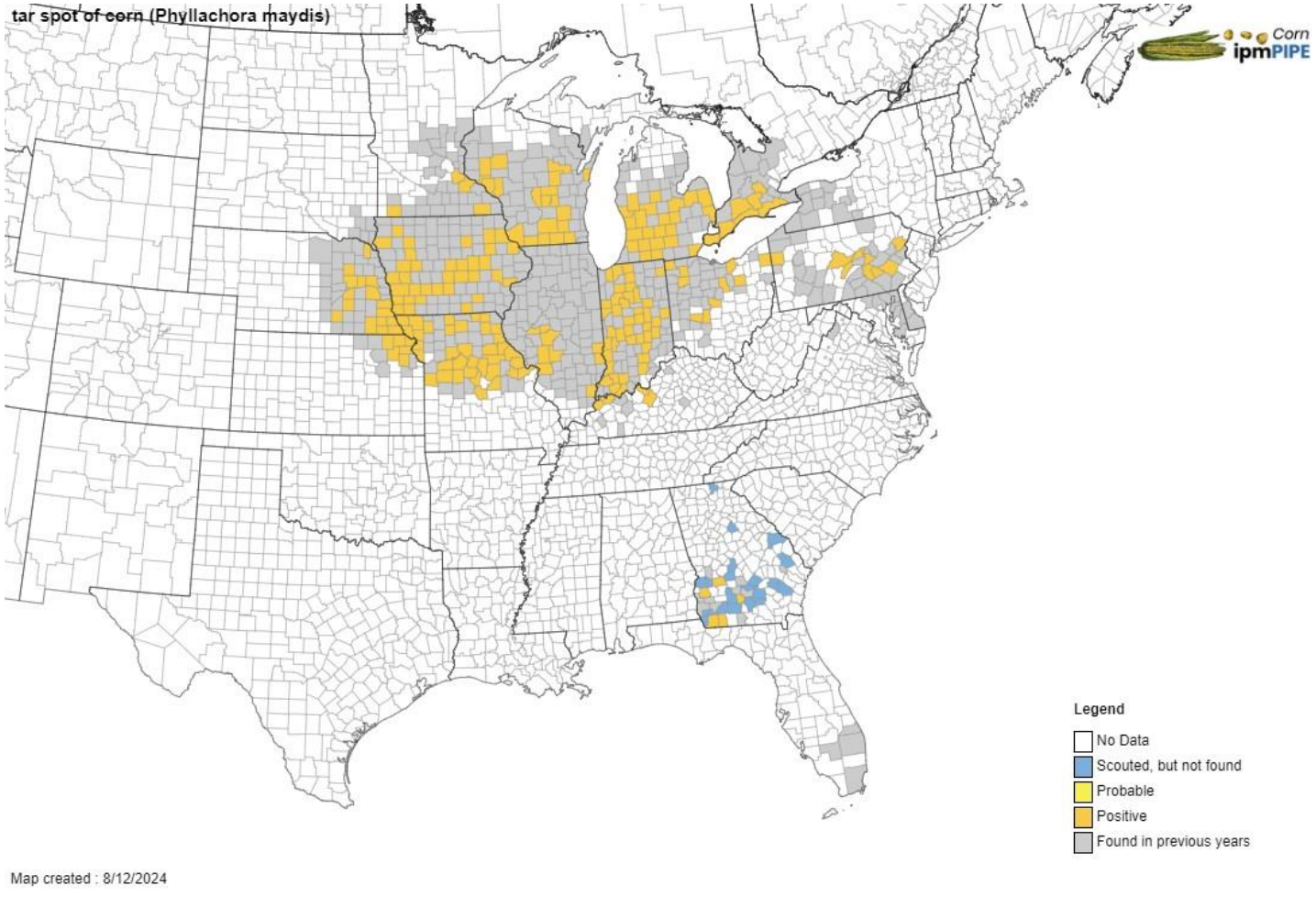

Figure 2. Symptoms of tar spot on corn leaves. Images courtesy of Darcy Telenko, Purdue University

[Alt text]: Three photos horizontally arranged into one figure. Left: Green leaf with numerous black spots. Center: Corn plants in a field with tan leaves. Right: Close up of a tan corn leaf that is covered in black spots.