TAR SPOT INDUSTRY UPDATE

"Tar spot is a highly devastating corn leaf disease, and one that farmers will need to manage."
– Albert Tenuta, Field Crop Pathologist, Ontario Ministry of Agriculture, Food and Agribusiness

Tar Spot at a Glance

- Tar spot was first confirmed in Ontario in 2020, and in Quebec in 2024.
- It is a fungus and a relatively new foliar corn disease in eastern Canada.
- Heavy tar spot infection can cause lower yield and test weight, and plant standability.
- Spores can overwinter in crop residue and travel in the wind locally or on storm fronts.
- The disease develops during moderate temperatures with high relative humidity.
- Corn genetics and fungicide applications are the most effective tar spot management tools.

Identification

Tar spot appears as small black raised lesions called stromata on the lower leaves in fields with a previous history of tar spot or in the upper leaves in fields with no previous history of the disease. Tar spot lesions will spread to other leaves, leaf sheaths and husks as the infection spreads.

Infection

Tar spot is a fungal disease affecting corn, caused by the fungal pathogen *Phyllachora maydis.*

Moderate temperatures (15- 25°C), high humidity, and prolonged leaf wetness (6+ hrs) create ideal conditions for disease development. These conditions are common in many parts of Ontario and Quebec corn-growing regions. Spores can be dispersed in-field and locally throughout the season and can move as much as 800 ft in the wind or greater distances in storm fronts.

The fungus overwinters in infected residue where the disease has been found, allowing tar spot to persist in these fields and spread to other fields in the region each season under favourable conditions.

Impact

Infected corn leaves can rapidly turn from appearing healthy to extremely infested, leading to premature leaf death (senescence) and significant yield losses.

Severe infections can result in yield losses of up to 50% per acre. Tar spot infection reduces the photosynthetic capacity of the plant which leads to premature plant death and reduced stalk strength. Yield impacts are dependent on environmental conditions, hybrid susceptibility as well as when tar spot infection occurs making it difficult to predict when outbreaks will occur.

"Tar spot is now an annual problem in regions with favourable environmental conditions those being moderate temperatures and high relative humidity or moisture (parts of Ontario and Quebec). That's why corn growers need to be aware of their risk and implement an effective integrated tar spot management program."
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Disease Management

Hybrid Selection	Corn hybrids show varying levels of susceptibility to tar spot indicating that genetic mechanisms of tolerance do exist. Choosing a hybrid with a high level of tolerance to tar spot should be the number one consideration in managing the disease.
Field Scouting	Scout for tar spot regularly and be ready to apply fungicides as needed. If stalk integrity is compromised in heavily diseased fields, consider harvesting early to minimize lodging risks.
Crop Rotation	Crop rotation has a limited effect in reducing the risk of tar spot but can help by allowing residue to break down, which lowers the primary inoculum.
Residue Management	Tillage also plays a minor role in reducing the risk of tar spot. Burying infected residue can speed up decomposition and potentially lower the amount of overwintering tar spot inoculum in the field.
Fungicide Application	Fungicides registered for tar spot can be effective if applied during the early stages of infection or at critical growth stages, like VT to R1 (tasseling to silking). The VT to R1 application timing has been most consistent in Ontario and US trials as well as provides additional benefits such as ear rot and mycotoxin suppression. In heavy pressure environments, a fungicide will be necessary to minimize losses.

"A proactive management strategy involves early planting of a high yielding hybrid with tar spot tolerance, scouting to identify early infection and using forecasting tools to access disease risk and optimum fungicide application timing."
– Albert Tenuta, Field Crop Pathologist, Ontario Ministry of Agriculture, Food and Agribusiness

Your Partner in Tar Spot Management

"Pioneer is committed to providing locally tested and proven corn hybrids with tar spot tolerance for corn growers."
– John Seliga, Pioneer Field Agronomist Lambton-Middlesex

Corteva Agriscience researchers and Pioneer field teams collaborate closely across Eastern Canada to collect data and observations on hybrid performance and disease symptoms, including tar spot. As a result, a tar spot score is published to help you understand and manage the risk of tar spot infection. Talk to your local Pioneer Sales Representative about selecting the right corn hybrid for your farm.

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