

## Sweet Corn XXXVI

# Helminthosporium Leaf Blight

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### Identification (and life cycle/seasonal history)

Helminthosporium leaf blight is a general term for several diseases caused by several fungi formerly known as *Helminthosporium* spp. These diseases include Southern corn leaf blight (caused by *Cochliobolus heterostrophus*), Northern corn leaf blight (caused by *Setosphaeria turcica*), and Northern corn leaf spot (caused by *Cochliobolus carbonum*). Infection of susceptible varieties occurs when temperatures are moderate (64 to 81°F) to warm (68 to 90°F) and damp, humidity, weather prevails. Helminthosporium leaf blight pathogens survive between corn crops as spores (conidia) and mycelium in and on crop debris, but can also be transported long distances on wind currents.

### Plant Response and Damage

Disease symptoms from Helminthosporium leaf blights can vary among inbreds and hybrids. Southern corn leaf blight symptoms include tan, elongated lesions between veins with light brown to brown borders. Northern corn leaf blight causes gray-green, elliptical or cigar-shaped lesion approximately 0.1 to 0.6 inches long. As lesions age, they become tan with distinct dark zones. Northern corn leaf spot lesions are varied, but typically include oblong dark brown spots on leaves of maturing plants. Symptoms may also include narrow, grayish tan with a light to dark border lesions on leaf blades, sheaths, and husks. Black felty mold on kernels can also occur with some strains of the Northern corn leaf spot fungus. Yield losses from these diseases are generally minimal in the High Plains region, but can be significant on susceptible inbred lines during weather conditions favorable for disease, especially when infection occurs before silking.

### Management Approaches

#### Biological Control

Practical biological control strategies have not been developed for Helminthosporium leaf blights.

## Cultural Control

Conventional tillage and sanitation of crop residues in the fall along with crop rotation can reduce primary inoculum, and generally are sufficient in High Plains region, but may not be adequate under disease favorable conditions. Resistant varieties are available and should be planted. Several races of the *Helminthosporium* leaf blight pathogens exist, so single-gene resistance may not be effective against all strains of each pathogen. Varieties with general resistance are available that do not completely control disease, but reduce the number and size of lesions.

## Chemical Control

Fungicides applied when lesions first appear effectively control Northern corn leaf blight, but may only be cost effective on high-value seed-production fields of sweet corn. Fungicides may be most effective when combined with varieties with general resistance.

### *Product List for Helminthosporium Leaf Blight:*

<b>Common/Trade Name</b>	<b>Product/Acre</b>	<b>Interval</b>	<b>Preharvest Interval, remarks</b>
Chlorothalonil	Varies	4-7 days	Various formulations available, including Bravo Ultrex, Bravo WeatherStick, Echo 720, and Echo Zn; 7-14 day PHI
EBDC	Varies	3-10 days	Various formulations available, including Manzate, Maneb, and Dithane; Include a nonionic surfactant to improve performance; 7-40 day PHI
<b>Propiconazole and Propiconazole/Trifloxystrobin</b>			
PropiMax	4 oz	7-14 days	Maximum of 16 ounces per season; 30 day PHI
Stratego	10-12 oz	7-14 days	Maximum of 36 ounces or three applications per season; do not make more than 2 consecutive applications before rotating to a fungicide with a different mode of action; 30 day PHI
Tilt	2-4 oz	7-14 days	Maximum of 16 ounces per season; 30 day PHI
<b>Azoxystrobin</b>			

<b>Common/Trade Name</b>	<b>Product/Acre</b>	<b>Interval</b>	<b>Preharvest Interval, remarks</b>
Amistar	2-3 oz	7-14 days	Maximum of six applications per season; rotate with a fungicide with a different mode of action; 7 day PHI
Quadris	6.2 – 9.2 oz	7-14 days	Maximum of 2.88 quarts or six applications per season; do not make more than 2 sequential applications before rotating to a fungicide with a different mode of action; 7 day PHI

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Categories: Sweet Corn, Diseases, Helminthosporium Leaf Blight

Date: 01/09/2005