2016

Corn Disease Profiles: Diseases Favored by Wet Conditions

Tamra A. Jackson-Ziems
University of Nebraska-Lincoln, tjackson3@unl.edu

Anthony O. Adesemoye
University of Nebraska, West Central Research and Extension Center, tony.adesemoye@unl.edu

Loren J. Giesler
University of Nebraska-Lincoln, lgiesler1@unl.edu

Robert M. Harveson
University of Nebraska-Lincoln, rharveson2@unl.edu

Kevin A. Korus
University of Nebraska-Lincoln, kkorus@ufl.edu

See next page for additional authors

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EC1909

Nebraska Extension Plant Pathology Team
Tamra A. Jackson-Ziems, Anthony O. Adesemoye, Loren J. Giesler, Robert M. Harveson, Kevin A. Korus, Stephen N. Wegulo

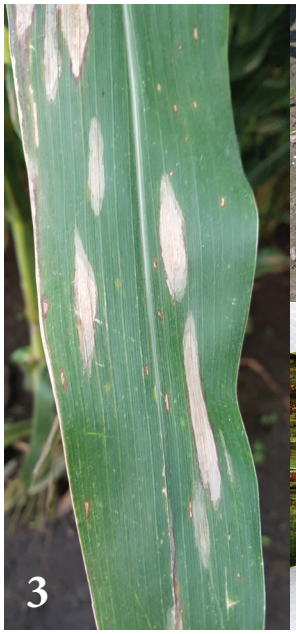


Fig. 1. *(top right)* Pythium Root Rot Seedling Disease
Fig. 2. *(bottom right)* Eyespot (photo by Casey Schleicher)
Fig. 3. *(top)* Northern Corn Leaf Blight

Fig. 4. Leaf Spot

Fig. 5. Physoderma Brown Spot (photo by Casey Schleicher)

6. Rust Diseases

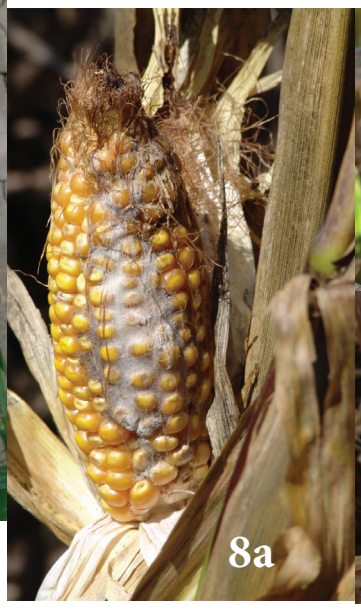
Fig. 6a. Southern Rust

Fig. 6b. Common Rust

7. Stalk and Crown Rot Diseases

Fig. 7a. *(above)* Stalk Rot
Fig. 7b. *(right)* Crown Rot

8. Ear Rot Diseases



Diseases of Corn Favored by Wet Conditions

Extreme weather events are predicted to become increasingly common and could bring periods of more intense rainfall. Wet conditions are favorable for many plant pathogens and the development of diseases. Seasonal timing when these conditions occur, as well as other factors such as temperature, impact which diseases develop and when. Listed below are some common corn diseases favored by wet conditions.

Timing	*Disease*	*Description*
Early Season	**Pythium Root Rot** *Pythium* spp. Management: **C, F, N**	A seedling disease caused by one of several fungal-like *Pythium* species that require water so zoospores can swim toward and infect roots. Can cause root rot and pre- or post-emergence damping off of seedlings, reducing stand establishment (*Figure 1*).
	Eyespot *Aureobasidium zeae*, aka *Kabatiella zeae* Management: **C, F, N, R**	The fungus-causing eyespot prefers cool, wet conditions. The fungus survives in residue, and lesions develop on the lower leaves first. Infection and spread are slowed by warm and dry conditions. Lesions are small (up to 1/10 inch in diameter) and may have a defined margin, giving them an appearance similar to an eye (*Figure 2*).
Mid-Season	**Northern Corn Leaf Blight** *Exserohilum turcicum* Management: **C, F, N, R**	Fungal disease favored by extended periods of time with mild temperatures (64–81 F). The fungus overwinters in infested debris from previous seasons and can be worse in continuous corn and minimum tillage. Look for medium to large lesions with rounded ends (*Figure 3*) that initially develop on lower leaves and eventually in the mid- to upper canopy if conditions persist.
	Gray Leaf Spot *Cercospora zeae-maydis* Management: **C, F, R**	Fungal disease favored by extended periods of warm temperatures (70–90 F) with high relative humidity or leaf wetness (>95 percent for at least 11 hours). The fungus overwinters in infested debris from previous seasons and can be worse in continuous corn and minimum tillage. Look for rectangular, gray lesions (*Figure 4*) that develop on lower leaves and eventually higher on the plants if conditions persist.
	Physoderma Brown Spot *Physoderma maydis* Management: **C, F, N**	Fungal-like pathogen overwinters in infested debris from previous seasons and can be worse in continuous corn and minimum tillage. Look for lesions often developing in bands across the leaf with small yellow- to-brown spots on leaf blades and larger dark brown to black lesions in the midrib (*Figure 5*). Infections at nodes can lead to stalk lodging.
	Rust Diseases *Puccinia* spp. Management: **F, N**	Rust diseases of corn are caused by fungi whose spores do not overwinter in Nebraska, but instead must be blown north from southern locations. Common rust often develops early in the growing season and is favored by cooler temperatures (61–77 F). Southern rust usually develops during late summer (77–82 F) and can limit yield if it develops during grain fill. It abundantly produces orange spores, usually on the upper leaf surface (*Figure 6a*). Common rust is less damaging on dent corn hybrids and produces brick red to brown spores in pustules on both upper and lower leaf surfaces (*Figure 6b*).
Late Season	**Stalk and Crown Rot Diseases** Multiple, such as: *Fusarium* spp. and *Diplodia* spp Management: **C, R, N**	Usually caused by fungi that overwinter in crop debris or soil. Disease development is more likely following stressful growing conditions such as too much or little moisture, wounding, lost leaf area due to diseases, or hail. They may lead to discolored, weakened, hollow stalks or crowns (*Figure 7*) that are prone to lodging, resulting in harvest difficulty and plants that may die prematurely.
	Ear Rot Diseases Multiple, such as: *Fusarium* spp., *Gibberella* spp., and *Diplodia* spp. Management: **C, R, N**	Usually caused by fungi that overwinter in crop debris or soil. Disease development is more likely following wounding of ears, premature plant death due to frost, and wet conditions. Cottony fungal growth and/or discoloration may be evident on or between kernels, cobs, and/or husks (*Figure 8*). Most ear rot pathogens can continue to grow in storage bins, and some may also produce mycotoxins.

*Management Codes: C–cultural practices, such as the use of crop rotation or tillage; F–fungicides; R–resistant hybrids; N–management may not be necessary, practical, or possible

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