

Corn Disease Profile I

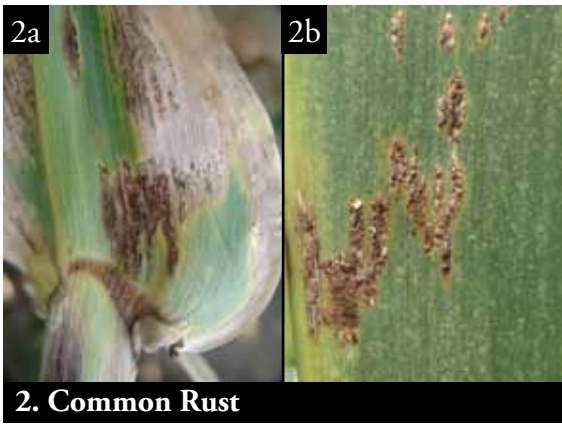
Foliar Diseases

UNL Extension Plant Pathology Team

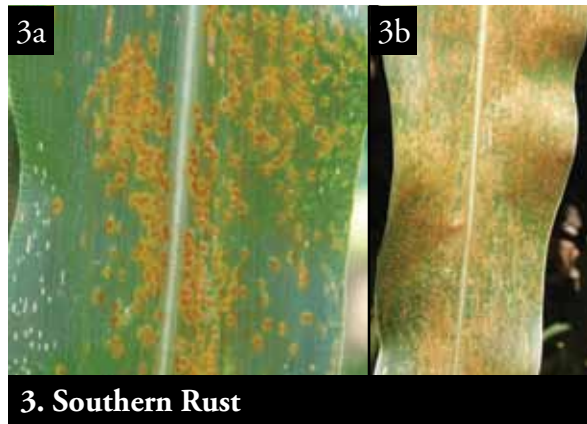
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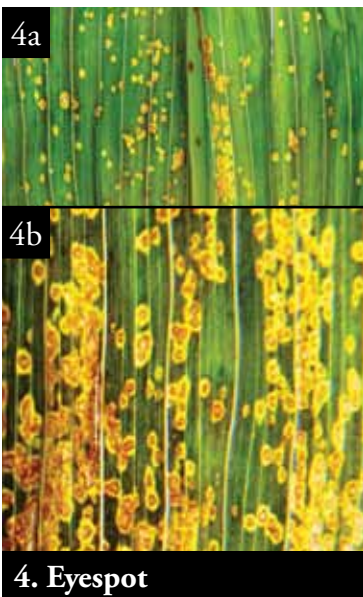
1. Gray Leaf Spot



2. Common Rust



3. Southern Rust



4. Eyespot



5. Physoderma Brown Spot



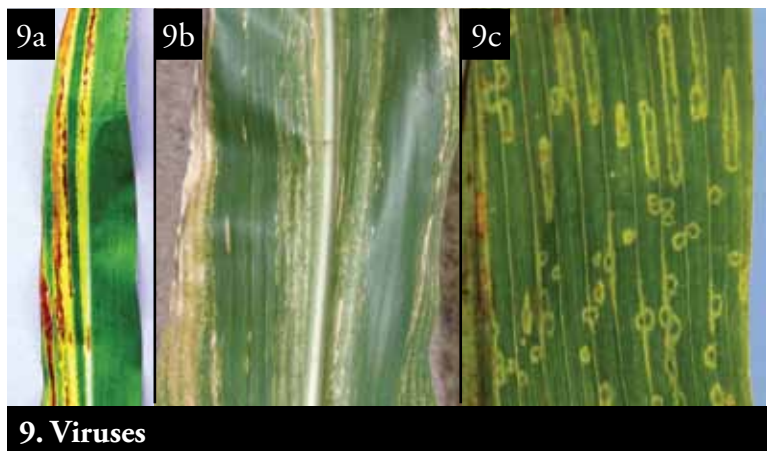
6. Goss's Bacterial Wilt and Blight



7. Holcus Spot



8. Stewart's Bacterial Wilt



9. Viruses

Disease	Description
1. Gray Leaf Spot <i>Cercospora zea-maydis</i> *Management: C, F, R	The fungus causing gray leaf spot overwinters in infected crop residue and needs high humidity (more than 90%) for 12 hours or more for spore germination and infection. Lesions tend to develop on lower leaves and advance upward; they are rectangular and fill in the area between leaf veins with a gray color (<i>Figures 1a and 1b</i>).
2. Common Rust <i>Puccinia sorghi</i> Management: F, N, R	The fungus causing common rust is favored by lower temperatures (61-77°F) than southern rust so it typically develops earlier in the season and tends to be less severe and aggressive. Spores tend to be brick red to brown and their pustules can develop equally well on both the upper and lower leaf surfaces (<i>Figures 2a and 2b</i>).
3. Southern Rust <i>Puccinia polysora</i> Management: F, N, R	This fungus prefers warmer temperatures, 77-82°F, so it tends to develop later in the growing season than common rust. The spores tend to be more orange to tan in color and are more abundant on the upper surface than on the lower surface (<i>Figures 3a and 3b</i>).
4. Eyespot <i>Aureobasidium zeae</i> syn. <i>Kabatiella zeae</i> Management: C, F, N, R	The fungus causing eyespot prefers cool wet conditions. Since the fungus is residue borne, it tends to develop on the lower leaves first. Infection and disease spread is slowed by higher temperatures. Lesions are small (up to 1/10 inch in diameter) (<i>Figures 4a and 4b</i>).
5. Physoderma Brown Spot <i>Physoderma maydis</i> Management: C, F, N	The fungus requires water for its swimming spores to move and infect. Infection often occurs in the whorl and may lead to the development of bands of small brown lesions across the leaves, but may also develop on other plant parts. Lesions may appear larger or darker in color when they develop in the midrib (<i>Figure 5</i>).
6. Goss's Bacterial Wilt and Blight <i>Clavibacter michiganensis</i> subsp. <i>nebraskensis</i> Management: C, R	The bacterium overwinters very well in infected crop residue. The organism can infect through wounds created by hail, high winds, sandblasting, etc. The foliar blight phase is most easily recognized by the development of dark "freckles" near the edges of lesions that can eventually become glossy as bacteria are oozed onto the surface (<i>Figures 6a and 6b</i>).
7. Holcus Spot <i>Pseudomonas syringae</i> pv. <i>syringae</i> Management: N	The bacteria survive in infected crop residue and infection can occur through natural plant openings, such as stomata. Lesions frequently develop near the tips of lower leaves and may be confused with some types of minor herbicide drift from products in the class of cell membrane disruptors, such as paraquat. The disease is usually not severe, but may be confused with other leaf spot diseases (<i>Figure 7</i>).
8. Stewart's Bacterial Wilt <i>Pantoea stewartii</i> Management: N, R, insecticide	The bacteria are vectored by the corn flea beetle. Disease may develop as a systemic wilt on young plants that may develop a decayed cavity inside the stem near the soil line. Infection is more common later in the season as a foliar blight; those lesions are usually long and brown with wavy margins (<i>Figure 8</i>).
9. Viruses High Plains, Maize Chlorotic Mottle, Maize Dwarf Mosaic, Wheat Streak Mosaic, or Corn Lethal Necrosis Management: C, N	Several viruses can develop in corn. Most of these viruses are vectored by one or more insects or mites and produce similar symptoms, such as mosaic and mottling (<i>Figures 9a, 9b, and 9c</i>). These can be difficult to diagnose without the assistance of a qualified testing laboratory.

Photo Credits: Figures 4a and 4b courtesy of Casey Schleicher, University of Nebraska–Lincoln.

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