

## Common Rust of Corn

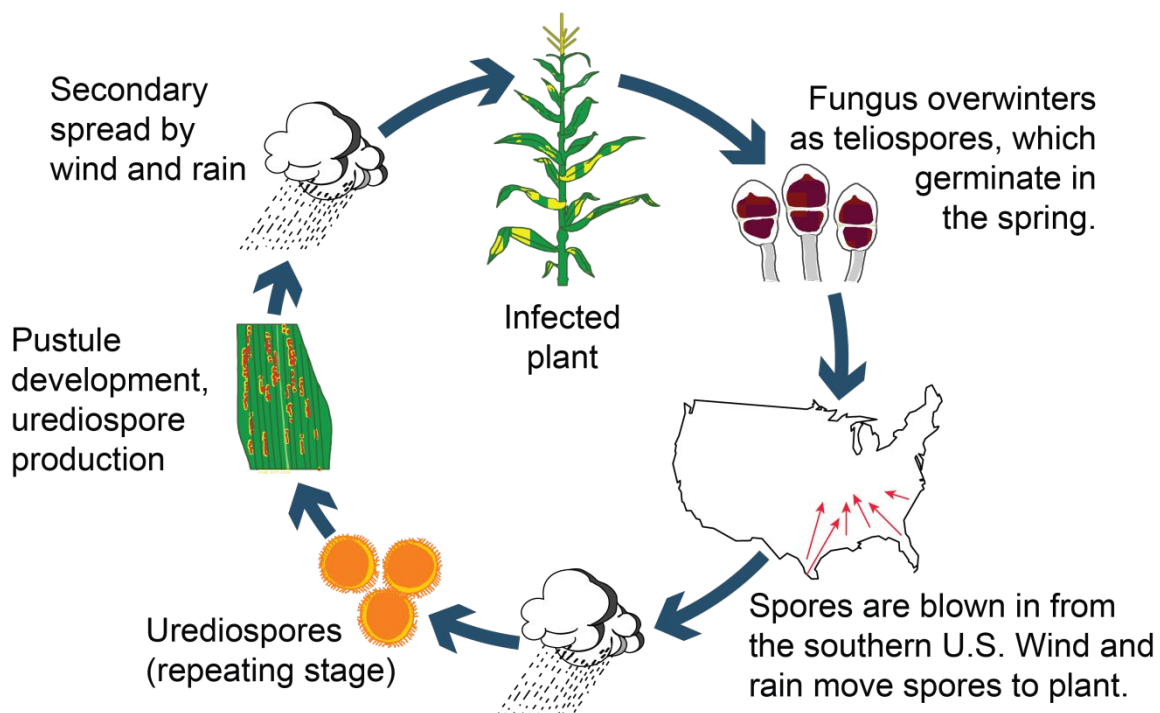
### Disease Facts

- Fungal disease caused by *Puccinia sorghi* pathogen
- Favored by moist, cool conditions (temps in the 60s and 70s)
  - Hot, dry conditions typically slow or stop development
- Spreads by windblown spores from southern corn growing areas
- Typically progresses as corn matures in late summer if conditions are persistently wet and cool
- More often a problem in seed production and sweet corn fields than in hybrid fields
- Less likely than southern rust to cause significant yield loss to hybrid corn, so important to distinguish common and southern rust
- Hybrids differ in resistance

### Impact on Crop

- Disease lesions reduce functional leaf area and photosynthesis
- Less sugars are produced, so plant uses stalk carbohydrates to help fill kernels
- Stalks are weakened and stalk rot potential increases
- Yield losses may result from poorly filled kernels and lodging-induced harvest losses
  - Significant damage to upper leaves early in the life of the hybrid results in higher yield losses
  - If damage is confined to lower leaves or occurs after corn is well-dented, yield losses are lower
- Latest-planted corn in an area is at higher risk for yield loss

## Common Rust Disease Cycle (*Puccinia Sorghi*)



## Symptoms

- Lesions begin as flecks on leaves that develop into small tan spots
- Spots turn into elongated brick-red to cinnamon brown pustules with jagged appearance
- Found on both upper AND lower leaf surfaces (unlike southern rust)
- Pustules turn dark brown to black late in the season
- Occurs on leaf only, NOT on sheaths, stalks, ear shanks and husk leaves

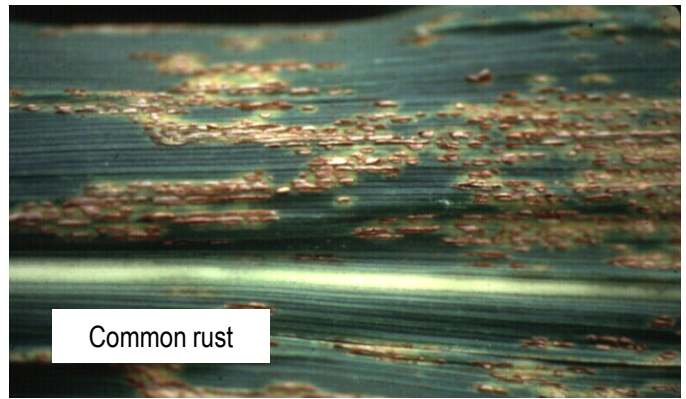


Common rust - early lesions



More advanced disease development

## Common vs. Southern Rust



Common rust



Southern rust

## Management

- Genetic Resistance
  - Pioneer researchers screen hybrids and parent lines for resistance and provide ratings for customers
  - Most hybrids are rated from “3” to “6” on a scale of 1 to 9 (9=resistant), indicating there are clear differences between hybrids, but complete resistance is not available
  - Growers should choose hybrids with a “5” or “6” rating in areas that frequently experience common rust
- Scout corn to detect common rust early
- Monitor disease development, crop growth stage, and weather forecast
- Apply a foliar fungicide if:
  - Rust is spreading rapidly or likely to spread and yield may be affected
  - Disease exceeds threshold established by your state extension plant pathologist
  - Commonly used fungicides include Aproach®, Headline®, Headline SC, Headline AMP®, PropiMax® EC, Quadris®, Quilt®, Quilt Xcel®, Stratego®, Stratego® YLD and Tilt®
- Disease is wind-borne and does not overwinter in US; therefore, rotation and tillage are not effective.

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| Common vs. Southern Rust:     | Common Rust  | Southern Rust                               |
|-------------------------------|--|---|
| <b>Ideal Environment</b>      | Cool to warm and moist<br>60-77 ° F                  | Warm to hot and moist<br>77+ ° F            |
| <b>Appearance of Pustules</b> | Large, circular to elongated                         | Small circular, pinhead appearance          |
| <b>Pustule (spore) Color</b>  | Brown to cinnamon-brown                              | Reddish orange                              |
| <b>Location of Pustules</b>   | Upper and lower leaf surfaces<br>Infects leaves only | Upper leaf surface<br>May also infect husks |