

# Field Corn XI

## Rust

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### Identification and Life Cycle

Several rust diseases occur on corn, but only common rust caused by the fungus *Puccinia sorghi* is found in the High Plains. In North America, windblown urediospores from tropical and subtropical environments are the primary inoculum source. Plants are infected from mid-June to mid-July when moderate temperatures (60-77°F) and high relative humidity (greater than 95%) coincide. The pathogen overwinters on living hosts.

### Plant Response and Damage

Common rust symptoms are small, reddish brown to black, linear streaks or pustules that commonly occur in bands on leaves. The fungus sporulates on both sides of leaves about 7 days after infection. Defoliation and plant stunting may occur. Yield losses of 3 to 8% per 10% area of the leaf area infected have been reported.

### Management Approaches

#### Biological Control

Practical biological control strategies have not been developed for common rust.

#### Cultural Control

Resistant varieties are available and should be planted. Several races of the fungus exist, so single-gene resistance needs to be matched against the prevailing

rust races present. Varieties with general resistance are available that do not completely control disease, but reduce the number and size of lesions.

## **Chemical Control**

Well-timed fungicide applications effectively control common rust, and should be applied before significant secondary inoculum develops. Fungicides are most effective when combined with varieties with general resistance.

### *Product List for Rust:*

| <b>Pesticide</b>                                       | <b>Product/Acre</b> | <b>Interval</b> | <b>Preharvest Interval, remarks</b>  |
|--|---------------------|-----------------|--|
| <b>Chlorothalonil</b>                                  | Varies              | 4-7 days        | Various formulations available, including Bravo Ultrex, Bravo WeatherStick, Echo 720, and Echo Zn; 7-14 day PHI  |
| <b>EBDC</b>  | 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>                                    |                     |                 |  |
| 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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|------------------|---------------------|-----------------|-------------------------------------|
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