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NF599 Wheat Disease Fact Sheet No. 1: Management Program for Rust Diseases of Wheat

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Wheat Disease Fact Sheet No. 1 Management Program for Rust Diseases of Wheat

John E. Watkins, Extension Plant Pathologist

Cause and Occurrence

Leaf Rust	Cause: <i>Puccinia triticina</i> Occurrence: mid-May to early July; September to October
Stripe Rust	Cause: <i>Puccinia striiformis tritici</i> Occurrence: May to July
Stem Rust	Cause: <i>Puccinia graminis tritici</i> Occurrence: mid-May to early July

Key Symptoms

Leaf Rust	• Circular to oval reddish-orange pustules on leaves; orange spores that rub off onto fingers.
Stripe Rust	• Bright yellow-orange pustules arranged between the veins in stripes.
Stem Rust	• Reddish-brown oblong pustules with frayed margins on leaves and stems.

Cultural Management Practices

- Plant varieties with at least a moderate level of resistance.
- Use variety complementation by selecting varieties that differ in parentage, maturity and disease reaction.
- Consult the "Nebraska Seed Book, Fall Planted Crops" published by the Nebraska Crop Improvement Association for current information on the disease reactions of wheat varieties recommended for Nebraska.

Fungicide Program

Apply a fungicide based on the following criteria:

- Severity of rust in Oklahoma and Kansas in May. (Severe rusting of wheat in Kansas puts the Nebraska crop at risk.)
- Earliness or lateness of the winter wheat crop. (Late crops are more at risk.)
- Susceptibility of varieties grown.
- Current and 30-day weather forecasts for mid-May to mid-June. (Wet weather favors rust.)
- Irrigated or dryland wheat. (Irrigated is more at risk.)
- Note when rust is first detected on lower leaves. (Early rust increases risk.)
- Potential yield of crop should be at least 45 bu/a dryland and 75 bu/a irrigated.

The goal of a spray program is to keep the flag and flag-1 leaves free of infection since they contribute significantly to yield.

Table I. Fungicides registered for rust on wheat.*

<i>Product</i>	<i>Rate/acre</i>	<i>Timing</i>
Quilt (azoxystrobin + propiconazole) (Syngenta)	7-14 fl oz	Up to Feekes 9 plant stage (ligule of flag leaf just visible)
Quadris (azoxystrobin) (Syngenta)	6.2 - 10.8 fl oz	Feekes 6 (immediately after jointing) to 10.5 (late head emergence)
Headline (pyraclostrobin) (BASF)	9 fl oz	Feekes 10.5 (late head emergence)
Stratego (propiconazole + trifloxystrobin) (Bayer)	10 oz	Feekes 8 (emerging flag leaf)
Tilt (propiconazole) (Syngenta)	4 fl oz	Feekes 10.5 (full head emergence)
PropiMax EC (propiconazole) (Dow AgroSciences)	4 fl oz	Feekes 10.5 (full head emergence)
Manzate 75DF (mancozeb) (Griffin L.L.C.)	2 lb	Feekes 10 (boot) and again at Feekes 10.5 (late head emergence)
Dithane DF (mancozeb) F-45 M-45 (Dow AgroSciences)	2.1 lb 1.6 qts 2 lb	Feekes 10 (boot) and again at 10.5 (late head emergence)
Pencozeb 80WP (mancozeb) 75DF (Elf Atochem)	1-2 lb 1-2 lb	Feekes 10 (boot) and again at 10.5 (late head emergence)

*Fungicides listed represent the best information available. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by University of Nebraska–Lincoln Extension is implied.

Application

- Apply sufficient spray solution to ensure good coverage of the leaf surface.
- Read and follow all label directions for mixing and application.

File under: PLANT DISEASES
C-12, Field Crops
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