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NF04-614 Management Program for Powdery Mildew of Wheat (Revised August 2005)

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Wheat Disease Fact Sheet No. 7

Management Program for Powdery Mildew of Wheat

By John E. Watkins, Extension Plant Pathologist

Cause and Occurrence

Cause:	*Blumeria graminis* f. sp. *tritici* (formerly *Erysipha graminis* f. sp. *tritici*)
Occurrence:	May to July, during periods of overcast, humid, moderate weather

Key Symptoms

- Most conspicuous on upper leaf surfaces and heads; also present on stems.
- Heads on the later, shorter tillers can become heavily diseased because they remain lower in the wheat canopy where humidity is high.
- Fungus initially forms cottony white patches which later turn light gray or buff color.
- When severe, individual patches often merge and cover large areas of the leaf surface and head.
- Leaf tissue on the opposite side of the mildew pustules becomes yellow, later turning tan or brown.
- As the season progresses the older, gray colonies of powdery mildew become dotted with small black bodies called cleistothecia.

Cultural Management Practices

- In most years powdery mildew will not be a yield limiting disease in Nebraska; however, sporadic, widespread, moderately severe outbreaks may occur, as happened in 2004.
- Dense stands of heavily fertilized, irrigated wheat are most prone to mildew.
- In Nebraska some of the better yielding and more popular wheat varieties are susceptible to powdery mildew, so growing mildew resistant varieties is an option, but rust resistance (definitely stem and possibly leaf and stripe) is the top priority in selecting disease resistant varieties.
- Use a balanced fertility program based on soil test analysis. Heavy applications of nitrogen and high seeding rates produce a dense canopy that favors mildew development.

Fungicide Treatment Program *(Table I)*

- Scout fields for mildew, rust and other leaf diseases and assess incidence and severity from tiller elongation through flowering.
- It is important to keep disease levels on the top two leaves (flag and flag-1 leaves) and the head to a minimum to prolong the grain filling period.
- Base the decision to spray the field on the level of disease present, susceptibility of the variety, stage of development, the potential yield and the current selling price of the grain.

Table I. Fungicides registered for foliar diseases of wheat.*

Product	*Rate/acre*	*Timing*
Quilt (azoxystrobin + propiconazole) (Syngenta)	7-14 fl oz	Up to Feekes 9 (ligule of flag leaf just visible) growth stage
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 (propionazole) (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 F-45 M-45 (mancozeb) (Dow AgroSciences)	2.1 lb 1.6 qt 2 lb	Feekes 10 (boot) and again at 10.5 (late head emergence)
Pencozeb 80WP 75DF (mancozeb) (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. No criticism is intended of products not listed, nor is endorsement by the University of Nebraska–Lincoln Extension given to those listed.

Application

- Read and follow all label directions for mixing and applications.
- Apply fungicides in sufficient enough water to ensure good coverage of the leaves and heads.

File under: PLANT DISEASES
C-20, Field Crops
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