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NF03-587 Management Program to Prevent Smut Diseases of Wheat (Revised September 2005)

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Wheat Disease Fact Sheet No. 6

Management Program to Prevent Smut Diseases of Wheat

by John E. Watkins, Extension Plant Pathologist

Cause and Occurrence

Common Bunt/Stinking Smut	Cause: *Tilletia tritici* Occurrence: heading to harvest
Loose Smut	Cause: *Ustilagi tritici* Occurrence: heading to harvest

Key Symptoms

Common Bunt/Stinking Smut	• Affected heads are slightly greener and more open than normal. • Bunt balls (infected seed) in harvested grain are dull gray and about the same size but rounder than normal kernels. • When crushed, bunt balls release masses of powdery, black spores. • A distinct fishy odor is noted during combining and in harvested grain.
Loose Smut	• Becomes evident at heading when all parts of the head are converted to a mass of powdery, black spores. • Spores are dislodged from infected heads by wind, leaving an empty ("naked") rachis.

Cultural Management Practices

- Plant certified, smut-free seed.

Fungicide Seed Treatment Program

- Treat seed with a systemic fungicide that will control both common bunt and loose smut.
- When treating seed with an on-farm treater or in the drill box, it is very important to get good, uniform coverage of the seed.
- The preferred method is to either buy treated seed or have it cleaned and treated by a commercial seed conditioner.

Economic Significance

- Grain containing bunt balls of stinking smut will be rejected by the elevator, often resulting in a total loss of harvested grain.
- Grain containing stinking smut often cannot be used as feed because the strong odor causes livestock to reject it.
- Grain containing stinking smut may be used in ethanol production.

Table I. A partial list of wheat seed treatments for control of fungal infection of the seed such as common bunt, loose smut, black point and scab.

Fungicide common name	*Some trade names and application method** (D, DB, M, L, S. RTA, RTU)*
Carboxin + Captan	Enhance (DB)
Carboxin + Maneb	Enhance Plus (DB); DB-Green+Vitavax (D/DB)
Carboxin + PCNB	Vitavax - PCNB (S/M)
Carboxin + Thiram	Vitavax 200 (S/M); Vitaflow 280 (S); RTU-Vitavax-Thiram (L/S)
Carboxin + Imazalil + Tiabendazole	RTU Vitavax Extra (S)
Difenoconazole + Mefenoxam	Dividend XL (S), XL RTA and Extreme (S); Incentive RTA
Metalaxyl + PCNB + Carboxin	Prevail (DB)
Tebuconazole + Metalaxyl	Raxil MD and XT (S)
Tebuconazole + Metalaxyl + Imazalil	Raxil MD Extra (S/M)
Tebuconazole + Thiram	Raxil-Thiram (L/S)
Triadimenol	Baytan 30F (S)
Triadimenol + Thiram	RTU-Baytan-Thiram (S/M)

*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 method: D = Dust, DB = Drill Box, M = Mist, L = Liquid, S = Slurry, RTA = Ready to Apply and RTU = Ready to Use.

Application

- Uniformly coat the seed when applying the seed treatment product.
- For drill box application, fill the drill box one-third full of seed, sprinkle one-third of the fungicide over the seed and mix. Repeat until the proper amount of fungicide has been added and mixed.
- Read and follow all label directions for mixing and application.

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