



## Small Grains XII

### Common Bunt (wheat, rye, triticale)

*Howard F. Schwartz, David H. Gent, and William M. Brown, Jr.*



#### Identification and Life Cycle

Common bunt of wheat is caused by two fungi, *Tilletia tritici* (syn. *T. caries*): and *T. laevis* (syn. *T. foetida*). Moisture and cool soil temperature (40 to 60°F) favor spore germination and growth of infectious hyphae that penetrate seed before seedling emergence. The pathogens grow within the host and eventually invade the head and developing ovaries, replacing host tissue with fungal bunt balls. The pathogens may survive on seed and in the soil as teliospores, but seldom overwinter in the High Plains.

#### Plant Response and Damage

Plants infected by common bunt fungi may be stunted, but generally appear to be healthy until heads emerge. Diseased heads are slender and stay green longer than healthy heads. The glumes of infected heads spread apart and expose dull-gray bunt balls, approximately the same size and shape of normal kernels. At harvest, dark spore clouds sometimes can be seen from moving combines. The pathogens produce a pungent, fishy odor. Common bunt reduces both the yield and quality, and bunted grain can be rejected at market. Common bunt spores are also highly flammable and can combust during threshing.

#### Management Approaches

##### Biological Control

No biological control strategies have been developed for common bunt.

##### Cultural Control

The disease can be successfully controlled by planting high quality seed free from the pathogens. Resistant varieties are available. Early planting when soils are warm can reduce common bunt infection, but is not advised because it can increase some insects and other diseases.

##### Chemical Control

Seed treatments effectively reduce seedborne common bunt.

##### Product List for Common Bunt:

Pesticide	Product per 100 lbs seed	Remarks
<b>Azoxystrobin</b>		
<b>Protege</b>	<b>0.153-0.382 fl oz</b>	<b>Broad spectrum, but should be combined with Apron or Maxim</b>
<b>Captan</b>		
<b>Captan 30-DD</b>	<b>1-2 fl oz</b>	<b>Seed treatment; poor control</b>
<b>Captan 400</b>	<b>1.5-4 fl oz</b>	Seed treatment; poor control
<b>Captan 400-C</b>	<b>1.5-4 fl oz</b>	Seed treatment; poor control
<b>Carboxin: various formulations and mixtures available</b>		
Vitavax 200 Flowable	3-4 fl oz	<b>Seed treatment; poor control</b>
RTU-Vitavax-Extra	5 fl oz	Wheat seed treatment; poor control
RTU-Vitavax-Thiram	5-6.8 fl oz	Seed treatment; poor control
Vitavax-PCNB flowable	5-7 fl oz	<b>Seed treatment; poor control</b>
Vitavax-Thiram-Lindane	5 fl oz	Seed treatment; poor control
<b>Copper fungicides: not all formulations are listed</b>		
<b>Champ Flowable</b>	<b>2 fl oz</b>	<b>Seed treatment; poor control</b>
<b>Kocide 4.5LF</b>	<b>2 fl oz</b>	Seed treatment; poor control
<b>ManKocide</b>	4 oz	Seed treatment; poor control
<b>Difenoconazole</b>		
Dividend Extreme	1-4 fl oz	Seed treatment; 55 day PHI
<b>Dividend</b>	<b>0.5-1 fl oz</b>	Seed treatment; 55 day PHI
<b>Fludioxonil</b>		
Maxim 4FS	0.08-0.16 fl oz	Seed treatment; 30 day PHI
<b>Mancozeb: not all formulations are listed</b>		
Manzate 75DF	2.2-4.2 oz	Seed treatment; poor control
<b>PCNB, Metalaxyl, and Bacillus subtilis: various formulations available</b>		
PCNB 2-E Liquid	4.2-12.3 fl oz	Seed treatment
System 3	2 3 oz	Seed/planter box treatment
<b>Tebuconazole: various formulations and mixtures available</b>		
Raxil-Thiram	3.5-4.6 fl oz	<b>Seed treatment</b>
Raxil MD	5-6.5 fl oz	<b>Seed treatment</b>
Raxil MD-W	5 fl oz	<b>Seed treatment</b>
Raxil MD Extra	5 fl oz	<b>Seed treatment</b>
Raxil Xt	0.16-0.20 oz	<b>Seed treatment</b>
<b>Thiabendazole: various formulations available</b>		
Mertect LSP	2-6 oz	<b>Wheat seed treatment</b>
<b>Thiram</b>		
42S-Thiram	2 fl oz	Seed treatment; poor control
Thiram 50WP	3.3-4.1 oz	Seed treatment; poor control
<b>Triadimenol</b>		
Baytan 30	0.75-1.5 fl oz	Seed treatment; poor control

The information herein is supplied with the understanding that no discrimination is intended and that listing of commercial products, necessary to this guide, implies no endorsement by the authors or the Extension Services of Nebraska, Colorado, Wyoming or Montana. Criticism of products or equipment not listed is neither implied nor intended. Due to constantly changing labels, laws and regulations, the Extension Services can assume no liability for the suggested use of chemicals contained herein. Pesticides must be applied legally complying with all label directions and precautions on the pesticide container and any supplemental labeling and rules of state and federal pesticide regulatory agencies. State rules and regulations and special pesticide use allowances may vary from state to state: contact your State Department of Agriculture for the rules, regulations and allowances applicable in your state and locality.

Categories: Small Grains, Disease, Common Bunt, Wheat, Rye, Triticale

Date: 3/8/2005

Supported in part by:

[Western Region IPM Center](#), [EPA Region VIII](#), [National Plant Diagnostic Network](#), [Great Plains Diagnostic Network](#), [USDA CSREES](#), [Colorado State University](#), [Montana State University](#), [South Dakota State University](#), the [University of Nebraska - Lincoln](#), and the [University of Wyoming](#).