

TIMELY INFORMATION

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Resistance of Wheat Varieties to Common Diseases An Update for the 2006-2007 Production Season

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Alabama's wheat is the target for a variety of potentially yield robbing diseases. Planting a wheat variety with a broad disease resistance package is critical to minimizing the impact of diseases, particularly rust diseases and powdery mildew, on the quality and yield of wheat, as well as holding down the cost of production inputs. A listing of selected wheat varieties and their reaction to common diseases can be found in Table 1. While fungicides will give good protection from many of the diseases listed below, the cost-effectiveness of such treatments is questionable in most areas of Alabama except for the Gulf Coast region and for wheat grown for the commercial seed market.

Common Diseases of Wheat

Leaf Rust – Is the most common and destructive disease found on wheat in Alabama. Planting a resistant variety is the best control measure. **RTU-Baytan-Thiram** seed dressing will give some early season control of leaf rust. Fungicides will give good control but cost-effectiveness is questionable.

Stripe Rust – Occurs sporadically in the Tennessee Valley and less frequently in other areas of Alabama but can cause a severe decline in crop quality and yield. Planting a resistant variety is the best defense. Fungicides will give good control but cost-effectiveness is questionable across much of Alabama.

Powdery Mildew – Commonly found on wheat in late winter but usually fades out as crop matures. Powdery mildew has less impact on yield than rust or blotch diseases. Yield gains from fungicide treatment usually will not cover cost of fungicide inputs and application. **RTU-Baytan-Thiram** seed dressing will give some early-season control of powdery mildew.

Leaf and Glume Blotch – Serious yield loss will occur, particularly when the flag leaf and glumes are blighted. In Alabama trials, most wheat varieties are susceptible to this disease but some differences in their sensitivity have been seen. Fungicides will protect flag leaf and seed head, as well as enhance seed test weights. Cost effectiveness of fungicide inputs is questionable except the Gulf Coast region and on wheat grown for seed.

Soilborne Wheat Mosaic and Wheat Spindle Streak Mosaic Virus – Occurs sporadically in Alabama during unusually wet winters and usually causes little loss. Diseases are most noticeable where wheat is cropped for several consecutive years. Planting a resistant cultivar is the only defense against either of these virus diseases.

Black Chaff/Bacterial Streak – Heavy rainfall during heading favors disease development but the occurrence of this disease is very sporadic. Frequent cropping of wheat may increase risk of disease outbreak. Disease resistant varieties are the only defense.

Fusarium Head Blight or Scab– Risk of disease outbreak may be increased in wheat grown behind corn, probably grain sorghum, or several successive wheat crops. Severe outbreaks are rare. Scabby wheat often is contaminated with one or more toxins that are produced by the causal fungus and are highly toxic to livestock. Wet weather during flowering favors disease development. Under the right conditions, all wheat cultivars are susceptible to this disease. Foliar fungicide applications provide no control. Fungicide seed dressings will reduce the risk of seed transmission.

Barley Yellow Dwarf – This aphid-transmitted virus disease is endemic in Alabama wheat. While wheat varieties differ in symptom expression, yield response is not closely tied to the severity of BYD symptom severity. The insecticide seed dressing **Gauche TX** may slow early season disease spread by controlling the aphids that transmit BYD.

Take-All Root Rot – Disease severity is directly linked to wheat cropping frequency. Rotation with other winter grasses and balanced soil fertility will minimize the impact of this disease on wheat yields. Frequent heavy rains appear to favor disease development. All wheat cultivars are susceptible to take-all. **Dividend Apron XL LS** and **Dividend XL RTA** seed dressings will help suppress take-all.

Loose Smut – A common and often over-looked disease that can cause sizable yield losses, particularly on farm-sourced wheat seed. This disease is easily controlled with the use of a machine-applied or hopper box fungicide seed dressing.

A complete listing of recommended fungicide seed dressings and foliar fungicides can be found in the Small Grain IPM Circular 2006IPM-458 (www.aces.edu/pubs/docs/A/ANR-0500-A/VOL1-2006/small-grains.pdf). The revised Small Grain IPM Circular will be posted to the web and from local county extension offices in December. Descriptions of the above diseases of wheat can be found in ANR-543 “Wheat Diseases and Their Control” (<http://www.aces.edu/pubs/docs/A/ANR-0543/>).

Table 1. Reaction of Selected Wheat Varieties to Common Diseases.

Wheat Variety	Zone ^Z	Leaf Rust	Stripe Rust	Glume Blotch	Powdery Mildew	SBWM ^Y	BYD ^X
AgriPro Beretta	N	Good	Fair	Fair	Poor	Fair	--
AgriPro Natchez	C, N	Good	Good	Good	Poor	Good	--
AgriPro Panola	All	Fair	Good	Fair	Good	Fair	--
AGS 2485	S	Good	Poor	Fair	Good	Poor	Fair
AGS 2000	S	Good	Poor	Fair	Good	Poor	Fair
Coker 9152	S	Good	Good	Good	Good	Good	Fair
Coker 9553	All	Fair	Good	Poor	Fair	Poor	--
Coker 9663	All	Fair	Poor	Fair	Poor	Poor	Fair
Coker 9835	All	Poor	--	Fair	Fair	--	Fair
Crawford	S	Good	Good	Fair	Good	Good	Fair
Fleming	C	Good	Fair	Fair	Good	Poor	Poor
Gore	--	Poor	--	Fair	Fair	--	Fair
Pioneer 26R24	C, N	Poor	Poor	Fair	Good	Good	Fair
Pioneer 26R38	C, N	Poor	Poor	Fair	Good	Good	Fair
Pioneer 26R61	S	Fair	Good	Fair	Good	Good	Fair
Pioneer 2684	All	Poor	--	Fair	Fair	--	Fair
Pioneer 2691	S	--	--	Fair	Fair	--	Fair
SS 520	C, N	Poor	Poor	Fair	Good	Fair	Fair
SS 535	C, N	Poor	Poor	Good	Fair	Good	Fair
Vigoro Tribute	S	Good	Fair	Fair	Good	Poor	Fair
Savage	C, N	Fair	Good	Fair	Good	--	Fair
USG 3209	S	Fair	Fair	Fair	Good	Good	Fair
USG 3592	S	Good	Poor	Good	Good	Good	Fair

Source: Characteristics of Recommended Wheat Varieties for Georgia (<http://commodities.caes.uga.edu/fieldcrops/Grain/wheatprod05/chaarofrecvaro5.htm>),

2004-2005 Georgia Small Grain Variety Tests

(<http://www.griffin.uga.edu/swvt/2005/sm05/RR699-contents.pdf>)

2005-2006 Georgia Small Grain Variety Tests (<http://www.griffin.uga.edu/swvt/2006/sm06/RR705-contents.pdf>).

^ZPlanting zones: S = South, C= Central, N = north, All = all of Alabama.

^YSBWM = soilborne wheat mosaic and the similar virus-incited disease wheat spindle streak mosaic.

^XBYD = barley yellow dwarf.

^W-- = information not available.