

Wheat Variety Disease and Insect Ratings 2011

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Diseases and insect pests reduce wheat yields in Kansas almost every year. Genetic resistance to diseases and insect pests is usually the most effective, economical, and environmentally sound method of control. The resistance ratings in this publication represent the results of multiple field and greenhouse evaluations by public and private wheat researchers (Table 1). The ratings are intended to help producers select wheat varieties and the paragraphs below contain suggestions for using this information to minimize the potential for serious yield losses. Growers should consult the latest K-State wheat

performance test report for details about other important characteristics including yield potential and maturity class.

Although great efforts were made to confirm the accuracy of these ratings, no guarantee can be made that the information is without error. Disease and pest reactions may vary with weather and changes within populations of pathogens or pests.

How to Use the Variety Ratings

Evaluate which diseases and insects are important for your region. The importance of any disease or insect pest depends

on its potential to cause yield loss and how often it reaches damaging levels within a given region of the state.

In western Kansas, wheat streak mosaic, leaf rust and stripe rust are among the most damaging and common diseases (Figure 1) and these diseases should be top priorities when selecting wheat varieties for that region.

In eastern and central Kansas, the environment is often more conducive for disease development, and additional factors should be considered when selecting a variety. Important diseases to consider in these regions of Kansas include: soilborne mosaic, wheat spindle streak mosaic, barley yellow dwarf, leaf rust, stripe rust, tan spot, and Septoria leaf blotch.

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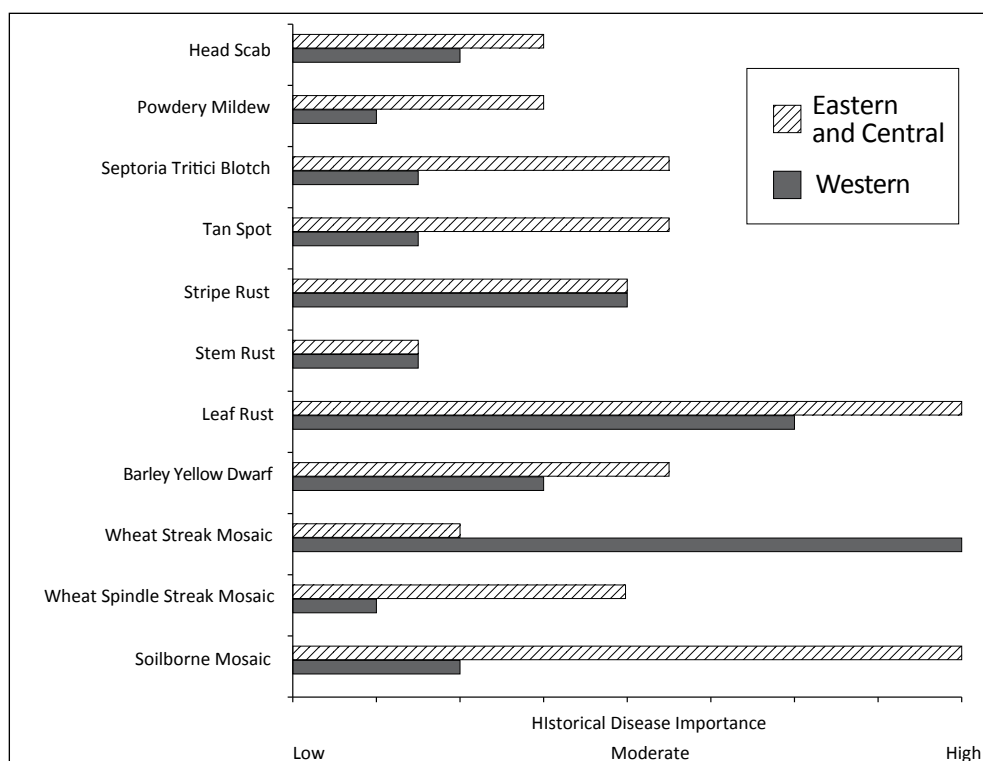


Figure 1. Regional importance of wheat diseases in Kansas. *The importance of wheat diseases is based on their potential to cause yield loss and how often it reaches damaging levels in different regions of the state. The relative importance of the diseases is the product of historical records of disease losses in Kansas and expert opinion by wheat disease specialists. Not all diseases and insect pests are considered in the figure. Growers may need to adjust their priorities based on previous crop production practices on their farms.*

Table 1. Disease and insect resistance ratings.

Hard Red Winter Wheat^a														
Variety	Soilborne Mosaic	Spindle Streak Mosaic	Wheat Streak Mosaic	Barley Yellow Dwarf	Leaf Rust	Stem Rust	Stripe Rust	Septoria Tritici Blotch	Glume Blotch	Tan Spot	Powdery Mildew	Head Scab	Hessian Fly ^b	Russian Wheat Aphid ^c
2137	1	5	6	5	7	6	8	5	7	5	4	8	5 ^d	9
2145	1		9	6	8	3	5	5		8	8	8		9
2174	1	5	8	5	7	8	7	5	7	5	2	6		9
Above CL ^{e,f}	9		5	7	9	3	8	6		7	1			9
AP503 CL2 ^f	2	5	6				9				7			9
Armour	1	1	7	6	5	3	4	6	7	5	2	7	7 ^d	9
Art	1	1	7	8	3	2	6	5	7	6	3	6	6 ^d	9
Bill Brown	8	8	7	7	2	8	6			8			7	9
Billings	2	5		5	2	3	2				7		1	9
Centerfield ^f	2			5	7		4	7		7		8	1	9
CJ	3		4	7	6		7			5	5	7	1	9
Coronado	1	4	6	6	7	5	6	6	6	6	5	9		9
Cutter	3	4	6	7	8	2		6		6	7	8		9
Deliver	1	3	7	6	2	5	2	4		5	3	9		9
Dominator	1	4	7	6	9	4	6	5	4	5	4	7		9
Dumas	8	7	7	7	6	3	7	6		7	6	5		9
Duster	1	1	7	4	3	6	4	7		7	3	9	1	9
Endurance	2	8	7	5	5	5	5	5		7	5	6	5	9
Everest	1	1	7	4	3	6	4	4	5	7	3	4	4	9
Fuller	1	1	5	7	5	5	7	6	6	6	6	7	9	9
Hatcher	7	8	8	8	7	3	4	5		5	5	6	7	9
Hawken	1	1	9	6	2	2	8	3		5		8		9
Hitch	1	1	7	7	2	2	9	6		4	6	5	9	9
Ike	1	5	9	6	9	3	6	7	6	8	6	6	2	9
Jackpot	1	1		7	6	4	5	6		4	6	7	4	9
Jagalene	2	3	5	7	9	2	9	4		7	9	8	5	9
Jagger	2	4	5	7	9	5	7	3	6	4	7	7	9	9
Karl/Karl 92	1	3	9	8	8	6	5	5	3	3	4	6		9
Keota	1		7	6	9	7		7		6	7	8	9	9
Longhorn	9	7	5	6	4	4	6	7	5	6	4			9
Millennium	9		8	5	2	3	3	7		7		4	2	9
OK Bullet	4	4	6	6	8	6	6	6		5	7	7	3	9
Onaga	1	5	5	6	6	8	6	5		8	6	5		9
Overland	8		5	4	2	5		6		7		5		9
Overley	1	4	5	5	8	2	5	5	9	5	7	9	9	9
PostRock	2	5	6	7	6	6	7	8	7	5	8	7	4	9
Protection CL ^f	4	3	7	8	9	4	7	6		7	7	8	9	9
Santa Fe	1		7	6	3	4	7	3	6	5	6	7	7 ^d	9
Shocker	1	2	8	7	4	1	7	4		6	5	8		9
Smoky Hill	1		8	8	5	6	9	4		4	6	8	9	9
Stanton	8	5	6	8	2	2	7	7		9	9	7		9
Sturdy 2K	2			5	4		6	6		7	5	8		9

Variety	Soilborne Mosaic	Spindle Streak Mosaic	Wheat Streak Mosaic	Barley Yellow Dwarf	Leaf Rust	Stem Rust	Stripe Rust	Septoria Tritici Blotch	Glume Blotch	Tan Spot	Powdery Mildew	Head Scab	Hessian Fly ^b	Russian Wheat Aphid ^c
Sy-Gold	1	1	6		2	5	9	5		5	5	7	1	9
T81	8	4	8	6	8	3	3	7	7	6	3	5		9
T158	2			5	7	6	2	7					2	9
TAM 110 ^e	9	9	5	8	9	4	8	6	6	7	1	8		9
TAM 111	8	8	7	7	8	3	3	5		6	6	7	5 ^d	9
TAM 112	8	8	5	6	7	2	8	5		6	1	8	9	9
TAM 203	1	2		8	2	2	4	6		7	4			9
TAM 304	4	2		6	2	7	4			7	3	8	5 ^d	9
Tarkio	3				2					7		9		9
WB-Cedar	1	1	7	6	5		3		6	5	2	7	9	9
WB-Stout	1	1		6	2	3	7			5	5	6	2	9
Wesley	1	4	8	7	6	5	2	5		6	7	7		9
Winterhawk	1	1	7	5	7	8	2	7		6	6	7	5 ^d	9

Hard White Winter Wheat

Variety	Soilborne Mosaic	Spindle Streak Mosaic	Wheat Streak Mosaic	Barley Yellow Dwarf	Leaf Rust	Stem Rust	Stripe Rust	Septoria Tritici Blotch	Glume Blotch	Tan Spot	Powdery Mildew	Head Scab	Hessian Fly ^b	Russian Wheat Aphid ^c
Aspen	1	1	7	7	6	4	3	5		6	2	6	6	9
Danby	7		5	8	8	2	8	6		8	7	7	9	9
NuFrontier	4		8	6	9			7		7	2	4		9
NuHills	2	2	6	6	9			7		7	8	5		9
Platte	4	4	6		4	3	9	7		7	7			9
RonL	4		2	7	7	6	3	6		7	5	8	9	9
Snowmass	6				6	6	4						9	9
Tiger	2	3	6		2	3	2			7			2	9
Trego	2	4	7	7	8	3	8	7	5	8	8	9		9

- a Rating codes are: 1 – Highly resistant; 3 – Moderately resistant; 5 – Intermediate; 7 – Moderately susceptible; 9 – Highly susceptible. Blanks indicate insufficient information.
- b Hessian fly ratings are undergoing revision. Ratings are based on results of greenhouse tests with Kansas (Great Plains) biotype of Hessian fly. Hessian fly populations are often a mixture of biotypes thus results can vary among years and locations.
- c New Russian wheat aphid biotype is thought to be virulent on all currently available commercial varieties.
- d Indicates resistance has been inconsistent in greenhouse testing.
- e Resistant to greenbug biotypes E, I, and K.
- f CLEARFIELD® variety, which is resistant to Beyond herbicide.

Table 2. Experimental wheat disease resistance summary. *The wheat disease resistance summary combines resistance ratings for multiple diseases. It weights each disease relative to its historical regional importance in Kansas. Varieties with genetic resistance to the historically important diseases within a region are ranked above average relative to more susceptible varieties. The summary is intended to facilitate comparisons among varieties. The more complete lists of disease and insect ratings (Table 1.) should be consulted after narrowing the list of potential varieties.*

Disease resistance summary	Eastern and Central	Western	
Above average: Varieties have moderate or high levels of genetic resistance to most diseases common in this region	Armour Art Aspen (W) Billings Duster Everest Hitch Santa Fe Sy-Gold WB-Cedar WB-Stout	Armour Art Aspen (W) Bill Brown Billings CJ Duster Endurance Everest Fuller	Hitch Jackpot Overley Santa Fe Shocker Sy-Gold WB-Cedar WB-Stout Winterhawk
Average: Varieties have moderate or high levels of genetic resistance to some of the diseases common in this region	2137 CJ Endurance Fuller Jackpot Karl/Karl 92 Overley Shocker Smoky Hill Winterhawk	2137 Danby (W) Hatcher Jagalene Jagger Karl/Karl 92 OK Bullet	PostRock Protection CL Smoky Hill T81 TAM 111 TAM 112
Below average: Varieties are susceptible to many of the diseases common in this region	Bill Brown Danby (W) Hatcher Jagalene Jagger OK Bullet PostRock Protection CL T81 TAM 111 TAM 112		

(W) White wheat varieties.

Narrow the focus. Sorting through all the information available about wheat varieties can be a complex and exhausting process. The disease resistance summary simplifies the comparison of wheat varieties in Kansas (Table 2). The disease resistance summary combines the historical estimates of regionally important diseases with the variety disease ratings. Varieties with genetic resistance to historically important diseases are considered above average, compared to more susceptible varieties. When combined with the yield potential and other important agronomic traits, the summary helps narrow the search for acceptable wheat varieties. The specific disease and insect ratings should be consulted once several candidate varieties are identified (Table 1).

Consider management options. Wheat varieties often have one or more weaknesses that are not adequately addressed by genetic resistance. When resistance is not available, it may be possible to minimize the risk of severe yield losses with other management options. For example, foliar fungicides could be used to manage leaf rust when genetic resistance is lacking in an otherwise desirable variety. Pursuing this management option, however, may increase the input costs required to produce the crop if leaf rust emerges as a problem. This approach will be less effective for viral diseases, including soilborne mosaic, wheat streak mosaic, and barley yellow dwarf, because these diseases are difficult to control with other cultural practices.

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