



# 2012 Wheat Variety Comparison

Jeff Edwards  
Small Grains Extension Specialist

Bob Hunger  
Extension Plant Pathologist

Brett Carver  
Wheat Breeder

Tom Royer  
Extension Entomologist and IPM Coordinator

## Importance of Variety Selection

Variety selection will dictate many of the decisions made in producing a wheat crop. Reactions to foliar diseases or insects, for example, will determine which pesticides are needed and when. Therefore, wheat farmers should carefully review variety characteristics and choose varieties that match their management style. This publication is designed to help wheat farmers make educated decisions about which varieties to grow. Additional information on yield potential of varieties can be found at [www.wheat.okstate.edu](http://www.wheat.okstate.edu)

## Variety Source

The variety source listed in this Fact Sheet indicates the breeding program that released the variety. This may or may not be the same organization marketing the variety. The Oklahoma Crop Improvement Association ([www.okcrop.com](http://www.okcrop.com)) can be contacted to obtain a listing of certified seed producers in Oklahoma.

## Lodging

Lodging ratings are based on a 1 to 5 scale with 1 indicating good straw strength and 5 indicating a greater propensity for lodging. This rating represents the genetic propensity for lodging and does not account for environmental factors, such as excessive nitrogen fertilization, which can also lead to lodging.

## First Hollow Stem

First hollow stem is the stage of growth when cattle should be removed from dual-purpose wheat pasture. A variety with a very late (VL) rating would offer one to two weeks more grazing in most years than a variety with a very early (VE) rating.

## Maturity

Maturity ratings are based on observations within the OSU wheat breeding and variety testing programs. Spreading acreage among a range of wheat maturities is a good way to hedge against spring freeze injury, some wheat diseases, and to spread harvest workload.

Oklahoma Cooperative Extension Fact Sheets are also available on our website at: <http://osufacts.okstate.edu>

## High Temperature Germination

### Sensitivity

Some varieties do not germinate well in hot soils and are not good candidates for early sowing. This chart uses a 1 to 5 scale to rate varieties with a 1 indicating a variety that will germinate well in hot soils and a 5 indicating a variety that does not germinate well in hot soils and should not be sown before October 1. For more information on this topic consult OSU Extension Fact Sheet PSS-2256 "Factors Affecting Wheat Germination and Stand Establishment in Hot Soils."

### Coleoptile Length

The coleoptile is a rigid, protective structure that covers the emerging shoot to aid it in reaching the soil surface. If the coleoptile does not reach the soil surface, the plant will die. Therefore, coleoptile length should dictate planting depth. Coleoptile length is highly correlated to plant height at maturity and is shortened by hot soil conditions. In this chart, a rating of 1 indicates a relatively long coleoptile and a rating of 5 indicates a relatively short coleoptile. For more information on this topic consult OSU Extension Facts PSS-2256 "Factors Affecting Wheat Germination and Stand Establishment in Hot Soils."

### Hessian Fly

Hessian fly is an increasing problem in Oklahoma wheat fields. Hessian fly overwinters and oversummers in wheat residue, so it is most prevalent in, but not restricted to, continuous no-till wheat fields. Therefore growers who no-till wheat after wheat should consider sowing varieties that have a resistant (R) or at least partially resistant (PR) rating. Likewise, growers who sow prior to 1 October might benefit from a variety with an R or PR rating, as early-sowing is a risk factor for Hessian fly. For more information reducing the likelihood of Hessian fly infestation, refer to OSU Extension Fact Sheet EPP-7086 "Hessian Fly Management in Oklahoma Winter Wheat."

### Acid Soil Tolerance

When soil pH drops below 5.5, essential plant nutrients can become unavailable while, some elements such as aluminum, can become toxic. This publication uses a 1 to 5 scale, with 1 being most tolerant to low soil pH and 5 being least tolerant. Table 1 shows acceptable acid soil tolerance ratings for a range of pH conditions and production systems. It is also important to note in-furrow application of phosphorus at planting will increase early-season growth in most low-pH settings regardless of acid soil tolerance.

# 2010 Wheat Variety Comparison Chart

Source	Variety	Lodging	First Hollow Stem	Maturity	High-temp germination sensitivity	Coleoptile Length	Acid Soil Tolerance	Hessian Fly	Barley Yellow Dwarf	Wheat Streak Mosaic	Septoria	Soil-borne Mosaic	Leaf Rust	Stripe Rust	Powdery Mildew	Tan Spot	Variety Protection
<b>HARD RED WINTER WHEAT VARIETIES</b>																	
AgriPro	AP503CL2	2	L	L	2	3	5	S	3	3	3	2	4	5	4	4	Y
AgriPro	Cutter	4	VE	M	4	3	1	S	4	4	3	2	4	-	4	3	Y
AgriPro	CJ	2	M	E	-	3	2	S	4	3	3	4	3	4	3	3	Y
AgriPro	Doans	2	M	M	2	1	1	S	5	-	2	2	1	1	2	-	Y
AgriPro	Fannin	4	VE	VE	3	1	1	-	2	-	-	1	1	2	2	-	Y
AgriPro	Greer	2	VE	M	1	1	1	S	4	-	3	1	4	2	3	3	Y
AgriPro	Jagalene	2	E	E	3	3	2	S	4	3	3	1	5	5	5	4	Y
AgriPro	Jackpot	1	E	E	2	3	1	S	3	-	3	2	3	2	3	3	Y
CSU	Above	2	VE	VE	2	2	5	S	4	3	3	5	5	4	1	4	Y
CSU	Bill Brown	2	E	M	1	4	-	S	4	4	4	4	2	3	3	4	Y
CSU	Hatcher	4	E	L	4	2	3	PR	4	4	3	4	4	3	3	3	Y
CSU	Ripper	1	VE	E	-	2	4	S	-	3	-	-	4	4	-	-	Y
KSU	Karl 92	3	E	E	2	4	4	S	4	5	3	1	4	3	3	2	Y
KSU	Everest	1	M	E	3	3	1	R	2	4	3	1	2	5	2	4	Y
KSU	Fuller	3	E	E	2	3	4	S	4	3	3	1	3	4	3	3	Y
KSU	Jagger	4	E	VE	1	3	1	S	4	3	2	2	5	4	5	3	Y
KSU	Overley	1	VE	VE	5	3	1	S	3	3	3	1	4	3	4	3	Y
LCS	T153	-	M	M	-	-	4	-	-	-	-	-	-	-	-	-	Y
LCS	T158	1	L	M	2	-	5	S	4	3	4	1	4	1	1	3	Y
UN-L	Mace	1	VL	VL	5	5	5	-	-	1	-	5	-	-	-	-	-
OSU	Triumph 64	5	L	M	5	1	5	-	-	-	4	4	4	-	3	1	N
OSU	2174	1	VL	L	5	3	2	R	3	4	3	1*	3	3	1	3	Y
OSU	Billings	3	E	E	1	2	1	S	4	4	3	1*	1	1	4	4	Y
OSU	Chisholm	2	L	E	4	4	3	PR	-	-	3	5	4	2	3	4	N
OSU	Centerfield	2	VL	M	5	3	2	R	3	-	4	2	4	2	1	4	Y
OSU	Custer	2	E	E	1	3	5	-	4	5	4	5	3	4	1	3	N
OSU	Deliver	4	L	M	2	3	5	S	4	4	3	1	1	1	2	3	Y
OSU	Duster	4	M	M	1	3	1	R	2	4	4	1	2	3	2	4	Y
OSU	Endurance	2	VL	L	1	1	1	S	2	4	4	2*	2	3	3	4	Y
OSU	Iba	3	L	L	2	-	4	S	2	-	4	1	2	2	2	2	Y
OSU	Gallagher	3	E	E	2	-	1	R	2	-	2	1	1	2	3	4	Y
OSU	Garrison	2	M	L	1	3	1	S	2	-	3	1	3	3	5	2	Y
OSU	OK Bullet	1	E	M	1	2	3	S	4	4	3	2	4	4	4	4	Y
OSU	Pete	1	M	E	1	2	3	S	5	3	3	1	1	5	3	4	Y
OSU	Ruby Lee	4	M	M	3	3	4	PR**	2	3	5	1	3	3	3	2	Y

	Lodging	First Hollow Stem	Maturity	High-temp germination sensitivity	Coleoptile Length	Acid Soil Tolerance	Hessian Fly	Barley Yellow Dwarf	Wheat Streak Mosaic	Septoria	Soil-borne Mosaic	Leaf Rust	Stripe Rust	Powdery Mildew	Tan Spot	Variety Protection
TAMU	Lockett	E	VL	1	-	2	S	-	-	4	2	3	3	-	-	Y
TAMU	TAM 110	VE	VE	2	1	5	S	4	3	3	5	5	5	1	4	Y
TAMU	TAM 111	L	L	3	1	4	S	4	4	3	5	5	5	4	4	Y
TAMU	TAM 112	M	L	3	2	1	S	3	3	3	5	4	5	1	4	Y
TAMU	TAM 113	M	M	-	-	2	S	-	-	-	-	1	1	-	-	Y
TAMU	TAM 304	M	M	3	-	1	-	4	4	3	3	2	3	2	4	Y
TAMU	TAM 401	VE	E	2	2	1	-	5	-	-	2	2	3	3	-	Y
WestBred	Armour	E	M	1	2	1	S	4	4	3	1	3	4	1	3	Y
WestBred	WB Cedar	E	E	1	3	2	S	4	-	3	1	2	1	1	2	Y
WestBred	Santa Fe	E	M	3	2	2	S	3	4	2	1	2	4	3	3	Y
WestBred	Winterhawk	L	L	2	2	4	S	3	4	4	1	4	3	3	3	Y

**General:**

1 = Excellent  
5 = Poor

VE = Very Early  
E = Early  
M = Medium  
L = Late  
VL = Latest

**Maturity & FHS**

1 = less sensitive  
5 = very sensitive

**High-temp germ. sensitivity**

1 = Longest  
5 = Shortest

**Coleoptile:**

**Hessian Fly**

S = Susceptible  
PR = Partially resistant  
R = Resistant

**Variety Protection:**

N = Not protected  
Y = PVP-Protected

\* reaction presented is to soilborne mosaic; reaction to spindle streak is a '3'

\*\*Hessian fly resistance is temperature sensitive, with less resistance at higher temperatures

**Table 1. Recommended acid soil tolerance ratings for given soil pH and production systems.**

<i>soil pH</i>	<i>Grain only</i>	<i>Dual Purpose</i>
< 5.0	1	1
5.0 - 5.4	1-2	1
5.5 - 5.9	1-4	1-3
≥ 6.0	1-5	1-5

## Wheat Streak Mosaic

Wheat streak mosaic virus is transmitted by the wheat curl mite. Mites overwinter on host crops such as corn, volunteer wheat, and many grassy weeds. Wheat curl mites have a life span of about 7 to 10 days, so the best way to combat this virus is to make sure that any host crops are completely dead (not just sprayed) at least two weeks prior to sowing. Tolerance ratings are on a 1 to 5 scale with 1 indicating tolerance and 5 indicating no tolerance. Wheat streak mosaic virus ratings adapted from Kansas State Publication MF-991. For more information on wheat streak mosaic virus, refer to OSU Extension Fact PSS-2136 "Considerations When Rotating Wheat Behind Corn."

## Soil-borne Mosaic

Soil-borne mosaic virus is most prevalent in areas east of a line from Altus to Alva. Once a field has been infested with soil-borne mosaic, the only alternative is to plant resistant varieties. Susceptibility ratings are on a 1 to 5 scale with 1 being the most resistant and 5 indicating the least resistant. Fields with a history of soil-borne mosaic virus should only be sown to varieties with a 1 or a 2 rating.

## Septoria and Tan Spot

Septoria and tan spot are two foliar diseases of wheat that become more prevalent with adoption of conservation and no-till farming practices. These diseases rarely reach economic threshold levels in tilled Oklahoma wheat fields, but growers employing conservation or no-till farming practices should avoid planting varieties highly susceptible to these diseases. Ratings are on a 1 to 5 scale with 1 indicating the most resistance and 5 indicating the least resistance.

## Powdery Mildew

Powdery mildew is a very common foliar disease in Oklahoma, but one that rarely justifies a fungicide application by itself. Powdery mildew is generally most prevalent in early-sown wheat fields with adequate nitrogen fertility and dense plant canopies. Varieties with a 1 or 2 rating are not likely to be significantly impacted by powdery mildew. Varieties with a

rating of 3 can have moderate amounts of powdery mildew if conditions are favorable for disease development. Varieties with a rating of 4 or 5 are most likely to have severe powdery mildew infestations and may require treatment.

## Leaf Rust

Leaf rust probably has more impact on wheat yield in Oklahoma than any other foliar disease. While less aggressive than stripe rust, leaf rust occurs more frequently than stripe rust. For this reason, some producers choose to apply fungicides to control leaf rust if the crop yield potential and price warrant control. Ratings for leaf rust are on a 1 to 5 scale with 1 representing the greatest resistance to current disease races. It is important to note disease races can shift. So planting a variety with a rating of 1 will not eliminate the possibility of leaf rust, but will greatly decrease the likelihood that leaf rust reaches economic threshold levels. For more information on control of foliar diseases in wheat, consult OSU Extension Current Report CR-7668 "Foliar Fungicides and Wheat Production in Oklahoma."

## Stripe Rust

Stripe rust is the most aggressive of the foliar diseases listed in this publication. Fortunately, stripe rust is not a widespread problem every year. This makes it difficult, however, to accurately track genetic resistance to stripe rust. Ratings for stripe rust are on a 1 to 5 scale with 1 representing the greatest resistance to current disease races. It is important to note disease races can shift. So planting a variety with a rating of 1 will not eliminate the possibility of stripe rust, but will greatly decrease the likelihood that stripe rust reaches economic threshold levels. For more information on control of foliar diseases in wheat, consult OSU Extension Current Report CR-7668 "Foliar Fungicides and Wheat Production in Oklahoma."

## Variety Protection

Varieties listed as having PVP protection can only be sold as a certified class of seed. For more information on PVP protection laws, visit [www.farmersyieldinitiative.com](http://www.farmersyieldinitiative.com)

## Acknowledgments

Some variety ratings were adapted from Kansas State Publication MF-991. The authors greatly appreciate the input of the following individuals:

Erick DeWolf  
Kansas State University

Sid Perry  
WestBred

Oklahoma State University, in compliance with Title VI and VII of the Civil Rights Act of 1964, Executive Order 11246 as amended, Title IX of the Education Amendments of 1972, Americans with Disabilities Act of 1990, and other federal laws and regulations, does not discriminate on the basis of race, color, national origin, gender, age, religion, disability, or status as a veteran in any of its policies, practices, or procedures. This includes but is not limited to admissions, employment, financial aid, and educational services.

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Robert E. Whitson, Director of Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Vice President, Dean, and Director of the Division of Agricultural Sciences and Natural Resources and has been prepared and distributed at a cost of 20 cents per copy. Revised 0812 GH.