

Winter Wheat Varieties



Kansas State University Agricultural Experiment Station and Cooperative Extension Service

CONTENTS

2016 WHEAT CROP REVIEW	1
Weather and Crop Development, Diseases, and Insects	
2016 PERFORMANCE TESTS	2
Harvest Statistics, Acreage Distribution, Environmental Factors, Varieties, Results and Variety Characterization, Electronic Access, Research and Duplication Policy, and Contributors	
Private Entrants	Table 14
Comparisons of Leading Winter Wheat Varieties	Table 2.....5
Site Descriptions and Management	Table 36
Northeast Dryland Test	Table 4.....7
Southeast Dryland Tests	Table 58
Southeast Soft Test	Table 69
North Central Dryland Tests	Table 710
Central Dryland Tests	Table 811
South Central Dryland Tests	Table 912
Northwest Dryland Tests	Table 1013
Southwest Dryland Tests	Table 1114
Western Irrigated Tests	Table 1215

2016 WHEAT CROP REVIEW

Weather and Crop Development

The 2015-2016 wheat crop had a good start across most of the state, led by September and early October precipitation events. Although, in north central Kansas, early October rains were missed and dry conditions resulted in some fields with only partial stand establishment. The remaining seed emerged after late October rains, resulting in a non-uniform stand in those fields affected.

The weather during the fall was mild, with higher-than-average temperatures and plenty of precipitation. This led to a lush fall growth. In some cases, almost too much fall forage was produced. At one point during the fall, some producers were concerned that the lush crop could result in water-deficit stress later in the growing season, especially in fields planted earlier than optimal.

A mild, dry winter and early spring also characterized the 2015-16 crop season, with above-average temperatures and few snow events for most of the state. Precipitation in early 2016 was insignificant until approximately April 15. The relatively warm winter temperatures increased crop developmental rate, and by mid-March most of the wheat in Kansas was about three to four weeks ahead of schedule in development. Most varieties had reached first hollow stem by March 10 in south central Kansas. The ahead-of-schedule development exposed the wheat crop to a higher risk of spring freeze injury, as the average last date for spring freeze in Kansas ranges from April 5 in south central Kansas to May 8th in northwest Kansas.

There were four main freeze events that occurred during the spring and had the potential to harm the crop. The first, during March 19-20, occurred in the western third of the state and exposed the crop to as much as 12 hours below 24°F. A second, during March 27-28, was mainly concentrated in northwest Kansas, and exposed the crop to as much as 10 hours below 24°F. A third, during April 11-12, affected primarily the central and west central portions of the state, and exposed the crop to as much as 8 hours below 32°F. The fourth freeze event occurred during May 1-2, and mainly affected northwest Kansas.

Luckily, these below-freezing temperatures did not match the most sensitive phases of crop development in most of the state. The majority of the Kansas wheat crop was able to survive these cold spells without significant yield loss. A few scattered fields showed heads affected by freeze, but overall, these freeze events helped hold back crop development and get it closer to normal. Some fields in north central Kansas, as well as southwest Kansas, were hit by hail events in May and June, which in some specific cases led to high percent yield loss estimates.

The Kansas wheat crop had started to show signs of drought stress, such as turning blue or even brown, in many parts of the state until mid-April, when precipitation started to catch up. Together with an increase in precipitation, stripe rust pressure increased to concerning levels, and a

foliar fungicide application was warranted. From mid-April onwards, conditions were nearly perfect for grain filling: near average temperatures and above-average precipitation for most of the state. Therefore, despite some tiller loss from the early-spring drought, the cool and moist end of the growing season was the perfect recipe for record-breaking yields across the state, with a U.S. Department of Agriculture yield forecast in July of 56 bushels per acre for the state of Kansas (Romulo Lollato and Mary Knapp, Kansas State University Department of Agronomy)

Diseases

Wheat disease played an important role in wheat production in 2016. Stripe rust was the primary disease problem. Stripe rust was detected early in the growing season and was found at low levels in many areas by the middle of April. The disease was favored by cool temperatures and frequent rainfall in May. Many of the widely grown varieties were susceptible to stripe rust including Everest, Armour and TAM 111. Most areas of the state experienced moderate to severe levels of stripe rust resulting in yield losses of greater than 20% in some fields. Many growers saw the emerging threat of stripe rust and responded with fungicides to protect the yield potential of the crop. The use of fungicides greatly diminished the damage caused by stripe rust.

Leaf rust and tan spot were also present in the central portion of the state but these diseases did not become severe until late in the growing season. Fusarium head blight was not as common in 2016 as it was in 2015 despite the frequent rainfall in May. The amount of wheat streak mosaic was also lower this year relative to 2014 and 2015 with only scattered reports in western and central Kansas. (Erick DeWolf, Kansas State University Department of Plant Pathology)

Insects

Hessian flies were first reported in Kansas in the mid-1800's and have been perennial pests ever since. This past wheat growing season was no exception. In 2014-2015, Hessian flies seemed to be more active in southeast KS. But in 2015-2016, most reports of Hessian fly activity came from south central and southwestern parts of the state. Eradicating volunteer wheat and delaying planting as much as possible are still great management techniques for all wheat pests, including the Hessian fly.

Wheat aphids, primarily bird cherry oat and English grain, continued to migrate into the state into late October. However, beneficials such as green lacewings, lady beetles, and parasitic wasps, were still abundant due to their buildup because of the sugarcane aphid in sorghum. They seemed to quickly eliminate these aphids before they could reproduce and thus the aphids never really became a

problem. Other pests were present but didn't seem to cause much negative impact over large areas. (Jeff Whitworth, Kansas State University Department of Entomology)

Harvest Statistics

The Kansas Agricultural Statistics' July 12 estimate of the 2016 crop was 454 million bushels from 8.1 million acres, up 41% from last year's crop. Yield per harvested acre is expected to average 56 bushels, up 19 bushels from last year's final yield. (July 12, 2016, *Crops Report*, Kansas Agricultural Statistics)

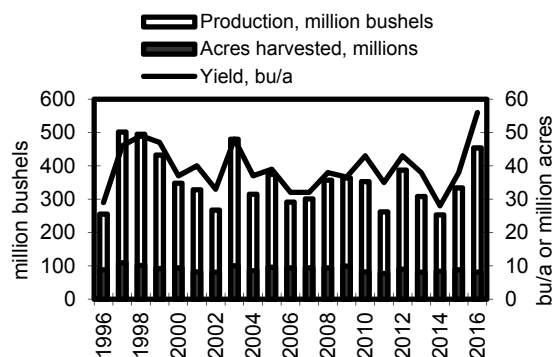


Figure 1. Historical Kansas wheat production

Everest remained the leading variety of wheat seeded in Kansas. It accounted for 12.2% of the state's wheat and was the most popular variety in the eastern two-thirds of the state. T158 jumped ahead to second place with 5.8% of acreage, slightly surpassing TAM 111 at third place with 5.7% of wheat acres. Winterhawk jumped to fourth place with 4.7%; and WB Cedar dropped one place to fifth with 4.5% of wheat acres. (March 2016, *Wheat Variety*, Kansas Agricultural Statistics)

Acreage Distribution

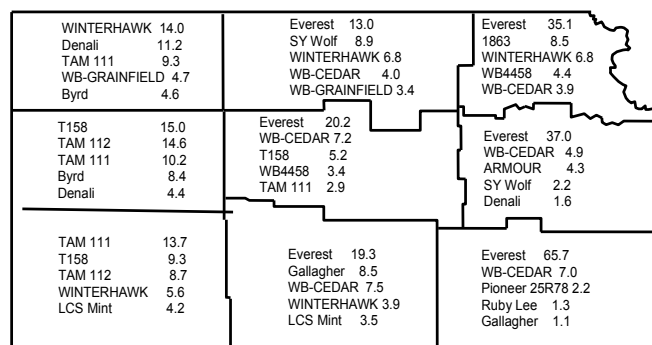


Figure 2. Leading wheat varieties in Kansas; percentage of seeded acreage for 2016 crop

2016 PERFORMANCE TESTS

The Kansas Agricultural Experiment Station annually compares both new and currently grown varieties in the state's major crop-producing areas. These performance tests generate unbiased performance information designed to help Kansas growers select wheat varieties suited for their area and conditions.

Site descriptions and management practices for each site are summarized in Table 3. One-year or one-location results can be misleading because of the possibility of unusual weather or pest conditions. **Be sure to keep extenuating environmental conditions in mind when examining test results.** For more information please visit: agronomy.ksu.edu/services/crop-performance-tests/index/html.

Varieties

Public varieties are selected for inclusion in the tests on the basis of several criteria. Most represent new or established varieties from Georgia, Nebraska, Oklahoma, Texas, and Colorado with potential for successful use in Kansas. Some are included as long-term checks. Others are entered at the request of the originating institution.

Originators or marketers enter privately developed varieties voluntarily. Entrants choose both the entries and test sites. The 2016 private entrants are listed in Table 1.

Results and Variety Characterization

Results from Kansas tests are presented in Tables 4 through 11. Yields are reported as bushels per acre (60 lb/bu) and are adjusted to a moisture content of 13% where moistures were reported at harvest. Yields also are converted to percentages of the test average to speed recognition of the highest-yielding entries. Multi-year averages are presented for those varieties entered more than 1 year.

Additional information such as test weight, heading date, and plant height is helpful for fine-tuning variety comparisons. Planting varieties with a range of maturities helps minimize weather risks.

At the bottom of each table is the (0.05) least significant difference (LSD) for each column of replicated data. One can think of the LSD as a "margin of error" that shows how big the difference between two varieties must be for one to be 95% confident that the difference is real. The use of the LSD is intended to reduce the chance of overemphasizing small differences. Small variations in soil structure, fertility, water-holding characteristics, and other test-site characteristics can cause considerable yield variation among plots of one variety.

Electronic Access

To access crop performance testing information electronically, visit the website at:
agronomy.ksu.edu/services/crop-performance-tests/index/html.

Research and Duplication Policy

When companies submit entries, permission is given to Kansas State University to test varieties and/or hybrids designated on the entry forms in the manner indicated in the test announcements. Seed submitted for testing should be a true sample of the seed being offered for sale.

All results from Kansas Crop Performance Tests belong to the University and the public and shall be controlled by the University to produce the greatest benefit to the public. Performance data may be used in the following ways: 1) Tables may be reproduced in their entirety, provided the source is referenced and data are not manipulated or reinterpreted; and 2) advertising statements by an individual company about the performance of its entries may be made as long as they are accurate statements about the data as published, with no reference to other companies' names or cultivars. In both cases, the following must be included with the reprint or ad citing the appropriate publication number and title: "See the official Kansas State University Agricultural Experiment Station and Cooperative Extension Service Report of Progress 1128 '2016 Kansas Performance Tests with Winter Wheat Varieties,' or the Kansas Crop Performance Test website, agronomy.ksu.edu/services/crop-performance-tests for details. Endorsement or recommendation by Kansas State University is not implied."

CONTRIBUTORS

Main Station, Manhattan

Jane Lingenfelser, Agronomy (senior author)
Bill Bockus, Plant Pathology
Erick DeWolf, Extension Plant Pathologist
Allan Fritz, Agronomy
Mary Knapp, Weather Data Librarian
Romulo Lollato, Extension Agronomist
Rebecca Miller, Grain Science and Industry
Jeff Whitworth, Extension Entomologist

Experiment Fields

Eric Adee, Ottawa
Gary Cramer, Hutchinson
Andrew Esser, Scandia
James Kimball, Ottawa
Michael Larson, Scandia

Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned.

Copyright 2016 Kansas State University Agricultural Experiment Station and Cooperative Extension Service. Contents of this publication may be freely reproduced for educational purposes. All other rights reserved. In each case, give credit to the author(s), 2016 Kansas Performance Tests with Winter Wheat Varieties, Kansas State University, August 2016. Contribution number 17 - 024-S from the Kansas Agricultural Experiment Station.

Research Centers

Patrick Evans, Colby
Lonnie Mengarelli, Parsons
Alan Schlegel, Tribune
Clayton Seaman, Hays
Guorong Zhang, Hays

Others

Ming Chen, USDA
Richard Chen, USDA
Laura Knapp, USDA
Alex King, Foundation Seed
Justin Knopf, Gypsum
Calvin Bohnert, Mankato

Table 1. Private entrants in the 2016 Kansas wheat performance tests

<i>Agrimaxx Wheat Company</i> 7167 Highbanks Road Mascoutah, IL 62258 855-629-9432	<i>DuPont Pioneer</i> 8100 South 15th Lincoln, NE 68512 800-441-7515	<i>Limagrain Cereal Seeds</i> 2040 SE Frontage Road Fort Collins, CO 80525 970-498-2200	<i>Syngenta AgriPro</i> AgriPro Wheat, Inc. 11783 Ascher Rd. Junction City, KS 66441 785-210-0218
<i>AGSECO</i> P.O. Box 7 Girard, KS 66743 620-724-6223	<i>Dyna-Gro Seed</i> 6221 Riverside Drive Dublin, OH 43017 614-761-4110 ext. 3	<i>MFA</i> MFA Incorporated 201 Ray Young Dr. Columbia, MO 65201 573-876-5363	<i>Watley Seed</i> Box 51 Spearman, TX 79081 800-659-3838
<i>Croplan by WinField</i> 1050 Count Road F West Shoreview, MN 55126 651-375-6620	<i>Kansas Wheat Alliance</i> 1990 Kimball Ave. Suite 200 Manhattan, KS 66502 785-320-4080	<i>Scott Seed Company</i> Box 1732 Hereford, TX 79045 806-364-3484	<i>WestBred-Monsanto</i> 800 North Lindbergh Blvd St. Louis, MO 63167 314-694-5305

Table 2. Comparisons of leading winter wheat varieties - agronomy and quality

Variety ¹	% of Kansas seeded acreage	Relative ²										Relative milling and baking quality ⁴	Resistance or tolerance to: ⁵														Russ. ⁶
	Test weight	Straw strength	Matur- ity	Coleop- tile			Shat- tering	Winter hardi- ness	Acid toler- ance	Protein content ³	Soil- borne mosaic	Spindle streak mosaic	Wheat streak mosaic	Barley yellow dwarf	Leaf rust	Stem rust	Stripe rust	Septoria			Powd- ery		Head scab	Hes- sian fly	Russ. wheat aphid		
				Height ³	length	ting												tritici blotch	Glume blotch	Tan spot	mildew	scab					
Everest	12.2	2	5	1	6	5	3	3	T	5	LD	1	1	7	4	3	6	8	4	5	7	3	4	6	9		
T158	5.8	1	1	3	5	--	1	3	S	--	--	2	--	5	5	7	7	2	7	--	4	2	5	4	9		
TAM 111	5.7	3	2	4	6	2	2	7	MS	7	AC	8	8	7	7	8	3	8	5	--	6	6	7	6	9		
Winterhawk	4.7	3	5	5	8	5	5	3	I	5	AC	1	1	7	5	7	8	6	7	6	6	6	7	3	9		
WB Cedar	4.5	2	1	1	1	5	2	1	MT	5	AC	1	1	7	6	5	3	3	4	6	5	2	6	5	9		
TAM 112	4.2	2	4	2	5	2	2	5	T	3	AC	8	8	5	6	7	2	8	5	--	6	1	8	8	9		
Gallagher	3.3	5	2	4	5	4	1	2	T	5	AC	1	1	7	6	3	3	3	5	--	6	6	7	1	9		
LCS Mint	3.2	1	5	5	7	5	2	1	T	5	AC	1	--	5	7	8	4	4	5	--	5	7	8	9	9		
Denali	2.1	1	2	7	7	7	1	5	MT	5	AC	8	8	6	7	7	3	8	--	--	8	--	7	9	9		
Byrd	2.0	5	1	5	5	7	--	--	MT	--	AC	2	2	7	7	7	8	8	--	--	7	--	7	9	9		
Endurance	1.6	5	5	5	7	5	5	5	T	7	AC	2	8	7	5	5	5	5	5	--	7	5	6	4	9		
SY Wolf	1.3	2	1	5	5	5	2	2	I	5	AC	2	--	6	6	1	2	5	3	6	3	5	--	5	9		
WB Grainfield	1.3	2	3	6	7	--	2	--	--	--	AC	1	1	7	7	3	2	4	6	--	6	6	7	--	9		
Danby+	1.3	3	4	3	6	5	2	2	MS	5	AC	7	--	5	8	8	2	8	6	--	8	7	7	9	9		
TAM 113	1.1	2	7	5	5	--	1	7	MT	5	AC	8	8	7	7	3	2	4	--	--	7	--	--	9	9		
Ruby Lee	1.0	2	6	4	9	5	5	2	I	6	AC	1	1	7	6	6	5	7	7	--	5	3	8	4	9		
WB 4458	1.0	2	2	4	5	--	--	--	T	--	AC	1	1	6	6	6	1	4	7	--	5	7	9	--	9		
Doublestop CL Plus	0.9	1	2	9	7	9	2	1	T	6	AC	1	1	6	7	3	2	5	6	--	6	5	8	5	9		
Jagger	0.8	4	4	1	5	6	5	6	T	3	EX	2	4	5	7	9	5	7	3	6	4	7	7	8	9		
Antero+	0.8	1	4	6	6	--	--	--	--	--	AC	4	4	7	7	7	2	4	--	--	5	--	6	--	9		
1863	0.8	2	7	5	7	5	2	2	T	6	AC	2	1	5	6	7	1	3	6	--	5	6	6	7	9		
Armour	0.8	3	3	1	2	7	1	5	T	5	AC	1	1	7	6	5	3	7	6	7	5	2	7	6	9		
Jagalene	0.7	3	3	2	4	6	4	5	MT	4	EX	2	3	5	7	9	2	9	4	--	7	9	8	6	9		
Jackpot	0.7	2	5	1	6	--	1	5	T	5	AC	1	1	6	7	6	4	5	6	--	4	6	7	4	9		
AP503 CL2	0.6	1	1	5	5	5	1	1	S	6	AC	2	5	6	7	8	2	9	4	--	7	7	7	6	9		
Fuller	0.6	5	4	2	5	5	2	3	I	3	AC	1	1	5	7	5	5	6	6	6	6	6	7	9	9		
Art	0.6	3	3	3	6	5	5	5	T	5	AC	1	1	7	8	3	2	6	5	7	6	3	6	5	9		
Duster	0.6	3	9	5	5	7	1	7	T	5	AC	1	1	7	4	3	5	4	7	--	7	3	9	1	9		
PostRock	0.6	2	2	3	5	5	3	3	T	6	AC	2	5	6	7	6	4	7	8	7	5	8	7	3	9		
SY Monument	0.5	2	5	8	6	--	--	--	--	--	AC	1	1	7	6	2	2	2	4	--	5	5	7	--	9		
Overley	0.4	3	5	1	7	7	9	9	T	3	EX	1	4	5	5	8	2	5	5	8	5	7	9	8	9		
LCS Wizard	0.4	--	--	--	--	--	--	--	--	--	AC	2	1	8	6	7	9	8	6	--	5	6	7	2	9		
Blends	10.7																										
Other White	1.1																										
Other Red	21.8																										
Other Soft	0.3																										

⁴Hard white variety Scale: 1=Best 9=Poor 1=Best 9=Poor 1=Early 9=Late 1=Short 9=Tall 1=Long 9=Short 1=Best 9=Poor 1=Best 9=Poor T=Toler S=Susc 1=Best 9=Poor Scale: 1=Most resistant/tolerant 9=Least resistant/tolerant

¹ Varieties and percentage seeded acreage from the March 2016 wheat variety survey, Kansas Agricultural Statistics, Topeka, KS.

² Most ratings are estimates based on information and observations from many sources over several years. Agronomic information by Romulo Lollato and Steve Watson - K-State Agronomy.

³ Summary of crop performance test results from recent years.

⁴ Ratings from Rebecca Miller - K-State Wheat Quality Laboratory.

EX = Exceptional; large kernels; high protein content; very good milling, mixing, and commercial bread-baking.

LD = Less Desirable; one or more serious quality defects.

-- = Inadequate information or conflicting data.

AC = Acceptable; milling and baking attributes acceptable, but not outstanding, for all properties; may have minor defects.

*Strong blending wheat; needed for blending with weaker wheats; may not be suitable alone for bread flour.

⁵ Ratings by Erick DeWolf and Bill Bockus - K-State Plant Pathology. Final ratings and descriptions of disease and insect pests are available in "Wheat Variety Disease and Insect Ratings 2016" Publication MF991 from Kansas State University.

⁶ New Russian wheat aphid biotype is thought to be virulent on all currently available commercial varieties.

Table 3. Wheat performance test site descriptions and management in 2016

Region and location	Soil type Previous crop	N	P ₂ O ₅	K ₂ O	Plant-harvest seed rate	Conditions
<u>Northeast Dryland</u>						
Ashland Agronomy Farm Manhattan (MA)	Reading silt loam Soybean	70	0	0	Fall 10/19/2015-6/28/2016 75 lb/a	No fungicide applied due to low disease presence.
<u>Southeast Dryland</u>						
East Central KS Experiment Field Ottawa (OT)	Woodson silt loam Soybean	94	40	13	Fall 60 lb/a	Abandoned; severe hailstorm in May.
Southeast Agricultural Research Center Parsons (PA)	Parsons silt loam Corn	100	20	20	Fall 10/15/2015-6/10/2016 90 lb/a	Excellent establishment in the fall. Winter and spring months were dry. Heavy disease pressure.
<u>Soft Wheat</u>						
Southeast Agricultural Research Center Parsons (PA)	Parsons silt loam Corn	100	20	20	Fall 10/15/2015-6/10/2016 90 lb/a	Excellent establishment in the fall. Winter and spring months were dry. Heavy disease pressure.
<u>North Central Dryland</u>						
North Central KS Experiment Field Belleville (BE)	Crete silt loam Fallow	80	30	0	Fall 9/30/2015-6/30/2016 90 lb/a	Harmony Extra SG applied on 3/9/2016.
North Central KS farmer's field Beloit (BL)	Harney silt loam Wheat	90	25	0	Fall 80 lb/a	Abandoned; variability caused by volunteer wheat.
<u>Central Dryland</u>						
Central KS farmer's field Gypsum (GY)	Silty clay loam Fallow	50	0	0	Fall 10/13/2015-6/23/2016 90 lb/a	Some lodging and disease pressure. Fungicide was applied.
Central KS farmer's field Lorraine (LR)	McCook silt loam Fallow	60	0	0	Fall 10/9/2015-7/19/2016 60 lb/a	Extensive lodging of all varieties. Intensive management comparison for this trial.
<u>South Central Dryland</u>						
South Central KS farmer's field McPherson (MC)	Crete silt loam Fallow	60	0	0	Fall 10/7/2015-6/28/2016 60 lb/a	Intensive management comparison for this trial.
South Central KS Experiment Field Hutchinson (HU)	Funmar-Taver loam Canola	113	0	0	Fall 10/8/2015-6/23/2016 75 lb/a	Good growing conditions throughout season. Leaf rust developed in April but was controlled with fungicide.
South Central KS farmer's field Conway Springs (CW)	Sandy loam Fallow	40	0	0	Fall 10/13/2015-6/7/2016 60 lb/a	Intensive management comparison for this trial.
<u>Northwest Dryland</u>						
Agricultural Research Center Hays (HA)	Harney silt loam Wheat	80	0	0	Fall 60 lb/a	Abandoned; herbicide/freeze damage in the winter months.
Northwest Research-Extension Center Colby (CO)	Keith silt loam Fallow	60	0	0	Fall 9/29/2015-6/23/2016 60 lb/a	Sprayed Huskie and Widematch for plant health.
Northwest Research-Extension Center Tribune (TR)	Richfield silt loam Fallow	85	16	0	Fall 10/13/2015-7/4/2016 55 lb/a	Late planting; not all stands were good. Fungicide applied for stripe rust control.
Northwest KS farmer's field Decatur (DC)	Harney clay loam Grain Sorghum	40	0	0	Fall 50 lb/a	Abandoned; high variability caused by soil conditions at planting.
<u>Southwest Dryland</u>						
Southwest KS farmer's field Larned (LA)	Harney clay loam Grain sorghum	75	0	0	Fall 9/30/2015-6/22/2016 50 lb/a	Fungicide applied. Dry conditions throughout the spring.
Southwest KS farmer's field Mullinville (MV)	Harney clay loam Grain Sorghum	75	0	0	Fall 9/30/2015-6/27/2016 45 lb/a	Fungicide applied. Dry conditions throughout the spring.
Southwest Research-Extension Center Garden City (GC)	Keith silt loam Wheat	60	0	0	Fall 65 lb/a	Abandoned; poor fall establishment and stands.
<u>Western Irrigated</u>						
Northwest Research-Extension Center Colby (CO)	Keith silt loam Fallow	110	0	0	Fall 9/28/2015-7/7/2016 90 lb/a	Irrigated 3.36 inches of water on 4/4 and 5/7. Sprayed Huskie, Widematch, and tebuconazole for plant health.
Southwest Research-Extension Center Garden City (GC)	Keith silt loam Corn	100	0	0	Fall 10/4/2015-7/12/2016 75 lb/a	Good growing season resulted in excellent stands and grain yields. Tilt fungicide applied.
Western KS farmer's field Healy, Lane County (LN)	Scott silt loam Fallow	90	0	0	Fall 9/30/2015-6/8/2016 80 lb/a	Double application of fungicide. Good conditions during season.

Table 4 . 2016 NORTHEAST Kansas dryland winter wheat performance test

Brand / Name	-MA-			
	MA ¹	MA	2 yr	3 yr
	yield (bu/a)	% of test average	multiyear av. (bu/a)	
AGSECO				
AG Gallant	49	102	--	--
AG Robust	43	90	--	--
Hot Rod	49	101	56	59
Limagrain				
LCS Chrome	43	90	--	--
OGI				
Bentley	53	109	--	--
Doublestop CL Plus	53	109	54	59
Gallagher	36	76	50	55
Iba	51	105	51	55
Ruby Lee	44	90	47	54
Syngenta				
SY Wolf	43	90	--	57
WestBred				
WB4458	40	82	49	54
WB-CEDAR	56	117	58	60
WB-GRAINFIELD	46	95	--	--
Wildcat Genetics				
1863	47	97	56	58
Everest	54	113	54	55
KanMark	51	105	53	57
Larry	45	92	--	--
Zenda	50	104	--	--
Experimentals				
Exp HRW15-14 Croplan	56	116	--	--
LCH13NEDH-14-69 Limagrain	47	97	--	--
OK09915C-1 OGI	57	119	--	--
OK1059060-3 OGI	49	102	--	--
Averages	48	48	--	--
CV (%)	8	8	--	--
LSD (0.05)*	4	8	--	--

¹ MA=Manhattan, KS, Ashland Bottoms Research Farm, Riley County. No fungicide applied.

*Yields must differ by more than the LSD value to be considered statistically different.

Table 5. 2016 SOUTHEAST Kansas dryland winter wheat performance test

							-OT-		-PA-							
Brand / Name	OT ¹	PA ²	Av.	OT	PA	Av.	2 yr	3 yr	2 yr	3 yr	OT	PA	Av.	OT	PA	Av.
	yield (bu/a)			% of test average			multiyear av. (bu/a)				head (+/- Everest)			height (in.)		
AGSECO																
AG Gallant	--	57	57	--	86	86	--	--	--	--	--	4	4	--	32	32
AG Robust	--	57	57	--	86	86	--	--	--	--	--	2	2	--	32	32
Hot Rod	--	77	77	--	116	116	--	--	--	--	--	5	5	--	33	33
Dyna-Gro																
Long Branch	--	57	57	--	86	86	--	--	--	--	--	9	9	--	38	38
Limagrain																
LCS Chrome	--	72	72	--	108	108	--	--	--	--	--	10	10	--	36	36
OGI																
Doublestop CL Plus	--	66	66	--	100	100	42	46	58	55	--	6	6	--	39	39
Gallagher	--	73	73	--	110	110	42	66	54	53	--	6	6	--	34	34
Iba	--	75	75	--	113	113	39	66	77	56	--	6	6	--	36	36
Ruby Lee	--	64	64	--	97	97	65	82	58	54	--	4	4	--	41	41
Scott Seed																
TAM 304	--	70	70	--	105	105	--	--	--	--	--	3	3	--	32	32
TAM 305	--	76	76	--	114	114	--	--	--	--	--	5	5	--	33	33
Syngenta																
Jackpot	--	66	66	--	100	100	57	74	55	49	--	3	3	--	36	36
SY Grit	--	62	62	--	93	93	--	--	--	--	--	5	5	--	34	34
SY Llano	--	62	62	--	93	93	57	--	62	--	--	1	1	--	31	31
WestBred																
WB4458	--	62	62	--	94	94	51	72	45	43	--	0	0	--	33	33
WB-CEDAR	--	66	66	--	100	100	69	76	64	55	--	1	1	--	32	32
WB-GRAINFIELD	--	74	74	--	111	111	--	--	--	--	--	7	7	--	36	36
Wildcat Genetics																
Everest	--	71	71	--	106	106	64	76	64	55	--	0	0	--	32	32
KanMark	--	66	66	--	100	100	46	67	56	49	--	4	4	--	30	30
Larry	--	65	65	--	99	99	--	--	--	--	--	6	6	--	36	36
Zenda	--	66	66	--	99	99	--	--	--	--	--	4	4	--	35	35
Experimentals																
OK09915C-1 OGI	--	57	57	--	86	86	--	--	--	--	--	7	7	--	40	40
Averages	--	66	66	--	66	66	--	--	--	--	--	4	4	--	34	34
CV (%)	--	9	9	--	9	9	--	--	--	--	--	7	7	--	--	--
LSD (0.05)*	--	4	4	--	6	6	--	--	--	--	--	4	4	--	4	4

¹ OT=Ottawa, KS, East Central Experiment Field, Franklin County. Test abandoned: hailstorm in May. ² --

PA=Parsons, KS, Southeast Agricultural Research Center, Labette County. No fungicide applied.

*Yields must differ by more than the LSD value to be considered statistically different.

Table 6. 2016 SOUTHEAST Kansas SOFT winter wheat performance test

Brand / Name	PA					
	PA ¹	PA	2 yr	3 yr	PA	PA
	yield (bu/a)	% of test average	multiyear av. (bu/a)		tw (lb/bu)	head (+/- Everest)
						height (in.)
AgriMAXX						
415	83	116	--	--	60	4
444	77	108	--	--	56	6
454	57	80	--	--	54	5
Exp 1663	96	135	--	--	57	3
Croplan						
9101	60	84	--	--	60	6
9201	53	74	--	--	63	6
9301	76	107	--	--	58	4
HRW 9415	73	102	--	--	65	6
HRW 9434	68	95	--	--	58	6
MFA						
(S) 2166	63	89	--	54	57	4
(S) 2250	81	114	--	63	60	4
(S) 2449	80	112	--	--	57	6
(S) XP 2431	73	103	--	--	59	3
(S) XP 2474	83	117	--	--	61	4
(S) XP 2479	76	107	--	--	59	6
OGI						
OK11311F	66	92	--	--	59	4
OK11754WF	55	78	--	47	59	-2
Pioneer						
25R25	70	98	--	--	59	7
25R40	82	116	--	63	59	6
25R46	56	79	--	48	54	6
25R77	80	112	--	63	59	4
Wildcat Genetics						
Everest HRW check	68	96	--	53	60	0
KanMark HRW check	62	87	--	52	58	5
Averages	71	71	--	--	59	5
CV (%)	8	8	--	--	--	7
LSD (0.05)*	4	6	--	--	4	4

¹ PA= Parsons, KS, Southeast Agricultural Research Center, Labette County. No fungicide applied.

* Yields must differ by more than the LSD value to be considered statistically different.

Table 7. 2016 NORTH CENTRAL Kansas dryland winter wheat performance test

Brand / Name	BE ¹	BL ²	Av.	BE	BL	Av.	-BE-	-BL-	BE	BL	Av.	BE	BL	Av.
	yield (bu/a)			% of test average			2 yr	3 yr	2 yr	3 yr		tw (lb/bu)		height (in.)
AGSECO														
AG Gallant	114	--	114	142	--	142	--	--	--	--	57	--	57	37
AG Robust	112	--	112	140	--	140	--	--	--	--	59	--	59	35
Hot Rod	124	--	124	155	--	155	--	--	--	--	57	--	57	37
Dyna-Gro														
Long Branch	71	--	71	89	--	89	--	--	--	--	56	--	56	38
Husker Genetics														
NE10589	79	--	79	98	--	98	68	--	76	--	56	--	56	43
Robidoux	45	--	45	56	--	56	44	58	79	--	55	--	55	40
Limagrain														
LCS Chrome	74	--	74	92	--	92	--	--	--	--	56	--	56	43
LCS Mint	47	--	47	59	--	59	41	54	60	--	57	--	57	40
LCS Pistol	56	--	56	70	--	70	53	--	76	--	56	--	56	38
LCS Wizard	57	--	57	71	--	71	40	50	43	--	55	--	55	40
T158	81	--	81	101	--	101	64	69	84	--	57	--	57	39
OGI														
Bentley	71	--	71	88	--	88	--	--	--	--	54	--	54	42
Doublestop CL Plus	65	--	65	81	--	81	51	60	64	--	57	--	57	38
Syngenta														
SY Flint	82	--	82	102	--	102	62	--	75	--	58	--	58	39
SY Grit	90	--	90	112	--	112	--	--	--	--	57	--	57	40
SY Monument	81	--	81	100	--	100	70	72	87	--	57	--	57	38
SY Southwind	107	--	107	133	--	133	75	72	81	--	56	--	56	38
SY Wolf	78	--	78	97	--	97	59	65	63	--	57	--	57	41
Watley Seed														
TAM 204	107	--	107	134	--	134	80	--	71	--	59	--	59	40
WestBred														
WB4303	92	--	92	115	--	115	--	--	--	--	53	--	53	37
WB4458	88	--	88	110	--	110	62	66	73	--	57	--	57	38
WB4721	87	--	87	108	--	108	--	--	--	--	58	--	58	41
WB-CEDAR	114	--	114	142	--	142	83	76	73	--	58	--	58	36
WB-GRAINFIELD	66	--	66	82	--	82	66	68	87	--	57	--	57	39
WB-REDHAWK	51	--	51	63	--	63	41	55	40	--	53	--	53	38
WINTERHAWK	77	--	77	96	--	96	59	65	60	--	57	--	57	39
Wildcat Genetics														
1863	69	--	69	86	--	86	62	67	81	--	58	--	58	39
Everest	74	--	74	92	--	92	55	61	62	--	57	--	57	37
KanMark	69	--	69	86	--	86	56	61	54	--	53	--	53	36
Larry	90	--	90	112	--	112	--	--	--	--	56	--	56	40
Tatanka	86	--	86	107	--	107	--	--	--	--	57	--	57	38
Zenda	117	--	117	145	--	145	--	--	--	--	59	--	59	39
Experimentals														
LCH13NEDH-14-69 Limagrain	55	--	55	68	--	68	--	--	--	--	55	--	55	39
PSB13NEDH15-44 Limagrain	55	--	55	68	--	68	--	--	--	--	56	--	56	40
OK09915C-1 OGI	79	--	79	98	--	98	--	--	--	--	57	--	57	44
Averages														
Averages	80	--	80	80	--	80	--	--	--	--	57	--	57	39
CV (%)	11	--	11	11	--	11	--	--	--	--	2	--	2	4
LSD (0.05)*	14	--	14	18	--	18	--	--	--	--	2	--	2	3

¹BE=Belleville, KS, North Central Experiment Field, Republic County. No fungicide applied.

²BL=Beloit, KS, farmer's field, Mitchell County. Test abandoned; variability caused by volunteer.

*Yields must differ by more than the LSD value to be considered statistically different.

Table 8. 2016 CENTRAL Kansas dryland winter wheat performance test

Brand / Name	GY ¹	LR ²	Av.	GY	LR	Av.	-GY-		-LR-		Intensive management		
							2 yr	3 yr	2 yr	3 yr	LRim ³	LRim	diff.
	yield (bu/a)			% of test average			multiyear av. (bu/a)				(bu/a)	% of average	(bu/a)
AGSECO													
AG Gallant	73	64	68	95	121	108	--	--	--	--	70	103	6
AG Robust	56	55	55	73	104	88	--	--	--	--	70	104	16
Hot Rod	82	63	72	106	120	113	--	--	--	--	71	105	8
Dyna-Gro													
Long Branch	85	54	70	110	103	107	--	--	--	--	71	105	17
Limagrain													
LCS Chrome	85	57	71	111	108	109	--	--	--	--	62	91	5
LCS Mint	85	40	62	110	75	93	65	65	46	53	59	88	20
LCS Pistol	81	37	59	105	71	88	67	--	41	--	62	92	24
LCS Wizard	78	37	57	101	70	85	62	61	35	41	67	99	30
T158	73	48	61	95	91	93	65	62	53	55	59	88	11
OGI													
Bentley	77	55	66	100	104	102	--	--	--	--	62	92	7
Doublestop CL Plus	73	45	59	94	85	89	64	64	51	51	56	82	11
Syngenta													
SY Flint	70	52	61	91	99	95	--	--	--	--	58	86	6
SY Grit	81	64	73	104	122	113	--	--	--	--	73	108	9
SY Monument	86	54	70	112	103	107	78	75	59	60	66	98	12
SY Southwind	77	64	71	100	122	111	--	65	--	55	80	118	16
SY Wolf	80	50	65	104	96	100	72	70	60	61	68	100	17
Watley Seed													
TAM 204	81	58	70	105	110	108	71	--	62	--	85	127	27
WestBred													
ARMOUR	76	26	51	98	49	74	55	55	40	42	59	87	33
WB4303	79	52	65	102	100	101	--	--	--	--	84	125	32
WB4458	71	51	61	91	97	94	68	65	62	60	79	117	28
WB4721	81	63	72	105	119	112	--	--	--	--	75	111	12
WB-CEDAR	73	52	62	94	98	96	67	63	60	56	66	98	15
WB-GRAINFIELD	89	46	67	115	86	101	81	73	57	56	67	99	22
WB-REDHAWK	78	37	58	101	71	86	63	61	43	42	61	91	24
WINTERHAWK	80	49	64	103	93	98	66	64	54	58	68	100	19
Wildcat Genetics													
1863	72	72	72	93	137	115	62	58	58	55	69	103	-3
Everest	74	33	53	95	63	79	54	54	48	49	59	88	26
KanMark	77	38	58	100	73	87	67	65	47	50	60	89	21
Larry	76	53	64	98	100	99	--	--	--	--	64	95	11
Tatanka	82	66	74	106	125	116	--	--	--	--	74	110	8
Zenda	76	60	68	98	114	106	--	--	--	--	77	114	17
Experimentals													
LCH13-048 Limagrain	72	51	61	93	97	95	--	--	--	--	66	98	15
LCH13DH-21-44 Limagrain	78	71	74	101	134	117	--	--	--	--	76	112	5
PSB13NEDH15-44 Limagrain	77	59	68	99	111	105	--	--	--	--	59	87	0
OK09915C-1 OGI	70	67	69	91	128	109	--	--	--	--	63	93	-5
Averages	77	53	65	77	53	65	--	--	--	--	68	68	15
CV (%)	7	10	9	7	10	9	--	--	--	--	15	15	--
LSD (0.05)*	8	9	8	10	17	14	--	--	--	--	17	25	--

¹GY=Gypsum, KS, farmer's field, Saline County. Fungicide applied.

²LR=Lorraine, KS, farmer's field, Ellsworth County. No fungicide applied.

³LRim= Lorraine, KS, farmer's field, Ellsworth County. Intensive management: + 40 lbs N/ac on 2/12/2016; 2 fl oz/ac Priaxor

fungicide on 3/9/2016; 9 fl oz/ac Twinline fungicide on 4/22/2016. Diff.= intensive management bu/a- standard bu/a.

* Yields must differ by more than the LSD value to be considered statistically different.

Table 9. 2016 SOUTH CENTRAL Kansas dryland winter wheat performance test

Table 6: 2010-2021 US Corn Belt Climate Risk and Winter wheat performance test																					
Brand / Name	MC ¹	HU ²	CW ³	Av.	MC	HU	CW	Av.	-MC-	3 yr	-HU-	2 yr	3 yr	-CW-	2 yr	3 yr	HU	MCim ⁴	MCim diff.	CWim ⁵	CWim diff.
	yield (bu/a)				% of test average				multiyear av. (bu/a)						tw (lb/bu)	yield (bu/a)					
AGSECO																					
AG Gallant	56	61	71	63	93	110	106	103	--	--	--	--	--	--	--	--	60	56	0	74	2
AG Robust	66	55	66	62	110	98	98	102	--	--	--	--	--	--	--	--	57	71	6	67	1
Hot Rod	69	53	71	65	115	96	106	105	68	53	44	45	55	47			58	70	1	79	7
Dyna-Gro																					
Long Branch	56	58	66	60	94	104	98	99	--	--	--	--	--	--	--	--	59	54	-3	57	-9
Limagrain																					
LCS Chrome	70	54	73	66	116	97	109	107	--	--	--	--	--	--	--	--	59	66	-4	77	4
LCS Mint	59	64	72	65	98	115	107	106	56	51	50	52	55	49			56	58	-1	76	3
LCS Pistol	51	62	66	60	85	111	98	98	50	--	43	--	49	--			64	63	12	67	1
LCS Wizard	71	52	62	62	117	94	92	101	65	53	36	41	49	44			57	76	5	83	21
T158	56	47	76	60	93	85	112	97	57	47	37	42	55	48			59	59	3	74	-1
OGI																					
Bentley	62	58	66	62	103	103	98	101	63	--	50	--	57	--			59	60	-2	67	1
Billings	61	50	65	59	101	90	97	96	63	50	45	46	49	43			56	66	5	71	6
Doublestop CL Plus	70	56	68	64	116	100	100	105	67	55	49	48	54	50			61	61	-8	74	7
Gallagher	70	59	76	68	117	105	113	112	72	58	46	45	55	48			55	71	1	75	-1
Garrison	58	63	59	60	97	112	88	99	57	47	41	43	48	44			60	69	11	76	16
Iba	69	50	74	64	114	90	110	105	66	53	37	44	57	52			61	76	7	75	0
Ruby Lee	57	59	50	55	94	107	73	91	62	50	49	48	42	40			62	51	-6	62	12
Scott Seed																					
TAM 304	64	61	64	63	107	109	95	104	--	--	--	--	--	--			58	74	10	79	15
TAM 305	59	51	69	60	97	92	103	97	--	--	--	--	--	--			56	51	-8	78	9
Syngenta																					
Jackpot	38	50	65	51	63	90	96	83	51	43	41	41	48	43			56	52	14	65	0
SY Flint	68	59	77	68	113	106	114	111	70	--	47	--	59	--			58	78	10	73	-4
SY Grit	68	50	70	63	112	90	104	102	--	--	--	--	--	--			58	77	10	81	11
SY Llano	56	55	62	58	94	99	91	95	55	--	44	--	46	--			60	53	-4	64	3
SY Monument	59	58	74	64	98	105	109	104	59	--	56	--	60	--			57	58	-1	75	1
SY Southwind	63	56	66	62	105	100	98	101	66	56	43	44	51	45			61	76	13	70	4
Watley Seed																					
TAM 204	74	52	77	67	123	92	114	110	76	--	40	--	56	--			58	82	8	90	13
WestBred																					
WB4303	72	55	63	63	120	99	93	104	--	--	--	--	--	--			62	80	8	74	12
WB4458	68	58	62	63	112	104	92	103	75	61	47	51	51	47			56	78	10	81	19
WB4721	62	50	76	63	103	90	113	102	--	--	--	--	--	--			58	66	4	81	5
WB-CEDAR	69	50	65	61	114	89	97	100	65	53	38	38	52	47			58	67	-2	73	7
WB-GRAINFIELD	64	58	72	65	107	104	107	106	--	48	--	57	--	54			56	70	6	82	10
WB-REDHAWK	61	55	62	60	101	99	92	98	62	51	42	45	49	44			58	79	18	76	14
WINTERHAWK	64	60	73	66	106	108	108	107	--	--	--	--	--	--			60	69	6	73	0
Wildcat Genetics																					
1863	48	62	62	57	79	110	92	94	57	49	49	47	50	44			57	45	-3	66	4
Everest	58	57	68	61	97	102	101	100	61	49	40	41	51	46			57	58	0	79	11
KanMark	46	62	65	57	76	110	95	94	54	44	42	44	48	45			59	63	17	82	18
Larry	74	60	78	71	123	107	116	115	--	--	--	--	--	--			59	79	5	76	-3
Tatanka	64	49	76	63	106	88	113	102	--	--	--	--	--	--			58	60	-4	73	-3
Zenda	68	58	77	68	113	103	114	110	--	--	--	--	--	--			59	68	0	74	-3
Experimentals																					
Exp HRW15-14 Croplan	40	54	70	55	66	97	104	89	--	--	--	--	--	--			59	51	11	72	2
LCH13-048 Limagrain	52	50	69	57	86	90	102	93	--	--	--	--	--	--			58	51	-1	75	6
LCH13DH-21-44 Limagrain	48	55	66	56	80	98	98	92	--	--	--	--	--	--			58	61	13	76	10
OK09915C-1 OGI	66	61	67	65	109	109	100	106	--	--	--	--	--	--			58	66	0	68	1
OK1059060-3 OGI	65	52	67	61	108	93	99	100	--	--	--	--	--	--			56	73	8	77	10
Averages																					
Averages	60	56	68	61	60	56	68	61	--	--	--	--	--	--			58	64	4	73	6
CV (%)	6	10	9	8	6	10	9	8	--	--	--	--	--	--			3	6	--	9	--
LSD (0.05)*	4	8	10	7	7	14	14	12	--	--	--	--	--	--			3	8	--	13	--

¹MC= McPherson, KS, farmer's field, McPherson County. No fungicide applied.

²HU= Hutchinson, KS, South Central Experiment Field, Reno County. Fungicide applied.

³CW=Conway Springs, KS, farmer's field, Sumner County. No fungicide applied.

⁴MCim= McPherson, KS, farmer's field, McPherson County. Intensive management: + 40 lbs N/ac on 2/22/2016; 2 fl oz/ac Priaxor fungicide on 3/10/2016; 9 fl oz/ac Twinline fungicide on 4/22/2016. Diff.= intensive management bu/a- standard bu/a.

⁵CWim=Conway Springs, KS, farmer's field, Sumner County. Intensive management: + 40 lbs N/ac on 2/5/2016; 2 fl oz/ac Priaxor fungicide on 3/10/2016; 9 fl oz/ac Twinline fungicide on 4/21/2016. Diff.= intensive management bu/a- standard bu/a.

Yields must differ by more than the LSD value to be considered statistically different.

Table 10. 2016 NORTHWEST Kansas dryland winter wheat performance test

TABLE 10-2016 NORTHWEST WINTER WHEAT PERFORMANCE TEST																												
Brand / Name	HA ¹	CO ²	TR ³	DC ⁴	Av.	HA	CO	TR	DC	Av.	-HA-	3 yr	-CO-	2 yr	3 yr	-TR-	2 yr	3 yr	HA	CO	TR	DC	Av.	HA	CO	TR	DC	Av.
	yield (bu/a)					% of test average					multiyear av. (bu/a)						tw (lb/bu)					height (in.)						
AGSECO																												
TAM 114	--	94	71	--	82	--	119	105	--	112	80	--	--	--	80	--	--	--	56	58	--	57	--	38	32	--	35	
Dyna-Gro																												
Long Branch	--	86	69	--	78	--	109	102	--	105	--	--	--	--	--	--	--	--	57	56	--	56	--	39	34	--	37	
Limagrain																												
LCS Chrome	--	84	62	--	73	--	106	91	--	99	--	--	--	--	--	--	--	--	58	55	--	57	--	39	36	--	37	
LCS Mint	--	67	73	--	70	--	85	107	--	96	65	53	--	57	67	65	--	--	59	58	--	58	--	40	36	--	38	
LCS Pistol	--	68	76	--	72	--	86	112	--	99	75	--	--	--	76	--	--	--	56	56	--	56	--	36	33	--	34	
LCS Wizard	--	75	62	--	68	--	95	91	--	93	46	42	--	61	56	55	--	--	57	57	--	57	--	35	32	--	34	
T158	--	63	63	--	63	--	79	93	--	86	73	55	--	53	73	64	--	--	57	57	--	57	--	35	30	--	32	
PlainsGold																												
(W) Antero	--	85	70	--	78	--	108	104	--	106	76	57	--	62	80	73	--	--	60	57	--	58	--	38	34	--	36	
Avery	--	61	75	--	68	--	78	111	--	94	--	--	--	--	--	--	--	--	57	56	--	56	--	38	36	--	37	
Brawl CL Plus	--	72	70	--	71	--	91	103	--	97	60	53	--	59	71	65	--	--	59	58	--	58	--	37	33	--	35	
Byrd	--	65	70	--	68	--	83	104	--	93	70	51	--	49	68	61	--	--	57	57	--	57	--	37	34	--	36	
Syngenta																												
SY Grit	--	69	62	--	65	--	88	91	--	89	--	--	--	--	--	--	--	--	57	55	--	56	--	38	32	--	35	
SY Monument	--	83	70	--	76	--	105	103	--	104	79	58	--	60	77	67	--	--	58	55	--	57	--	35	34	--	35	
SY Sunrise	--	79	61	--	70	--	100	91	--	95	82	--	--	--	--	--	--	--	58	56	--	57	--	35	29	--	32	
SY Wolf	--	75	63	--	69	--	95	93	--	94	62	52	--	58	67	61	--	--	57	56	--	57	--	38	33	--	36	
TAM 111	--	73	66	--	69	--	92	97	--	94	57	43	--	51	58	52	--	--	58	57	--	57	--	38	35	--	37	
Watley Seed																												
TAM 112	--	64	63	--	64	--	81	93	--	87	71	51	--	48	64	59	--	--	58	58	--	58	--	36	34	--	35	
TAM 204	--	78	66	--	72	--	98	97	--	98	65	--	--	--	67	--	--	--	57	54	--	56	--	35	32	--	34	
WestBred																												
WB4458	--	82	53	--	68	--	104	79	--	91	61	49	--	60	59	57	--	--	56	55	--	55	--	37	32	--	34	
WB4721	--	88	70	--	79	--	112	103	--	107	--	--	--	--	--	--	--	--	56	57	--	57	--	38	33	--	36	
WB-GRAINFIELD	--	87	70	--	79	--	111	103	--	107	78	58	--	62	83	76	--	--	58	57	--	57	--	37	34	--	36	
WINTERHAWK	--	81	62	--	72	--	103	92	--	97	64	53	--	61	68	61	--	--	61	58	--	60	--	39	34	--	36	
Wildcat Genetics																												
(W) Danby	--	82	75	--	78	--	104	110	--	107	70	54	--	60	80	68	--	--	59	59	--	59	--	38	35	--	37	
Denali	--	72	58	--	65	--	92	86	--	89	61	43	--	49	56	55	--	--	60	58	--	59	--	38	35	--	37	
Everest	--	75	61	--	68	--	94	90	--	92	57	45	--	54	67	55	--	--	56	57	--	56	--	34	31	--	32	
(W) Joe	--	94	77	--	85	--	119	113	--	116	85	--	--	--	94	--	--	--	61	57	--	59	--	40	35	--	38	
KanMark	--	77	65	--	71	--	97	97	--	97	64	54	--	60	69	64	--	--	59	57	--	58	--	33	30	--	32	
Larry	--	93	70	--	81	--	118	103	--	110	--	--	--	--	--	--	--	--	57	57	--	57	--	38	34	--	36	
Oakley CL	--	85	69	--	77	--	107	102	--	105	74	57	--	62	84	71	--	--	60	59	--	59	--	38	34	--	36	
Tatanka	--	86	72	--	79	--	110	106	--	108	--	--	--	--	--	--	--	--	56	58	--	57	--	38	32	--	35	
Zenda	--	74	64	--	69	--	94	94	--	94	--	--	--	--	--	--	--	--	60	57	--	58	--	38	34	--	36	
Experimentals																												
Exp HRW15-14 Croplan	--	76	69	--	72	--	96	102	--	99	--	--	--	--	--	--	--	--	57	56	--	56	--	38	34	--	36	
LCH13-048 Limagrain	--	84	71	--	77	--	106	105	--	106	--	--	--	--	--	--	--	--	60	57	--	58	--	35	31	--	33	
LCH13DH-21-44 Limagrain	--	86	59	--	72	--	108	87	--	98	--	--	--	--	--	--	--	--	60	55	--	58	--	34	28	--	31	
LCH13NEDH-14-69 Limagrain	--	83	75	--	79	--	106	111	--	108	--	--	--	--	--	--	--	--	61	57	--	59	--	35	33	--	34	
CO11D1767 Plainsgold	--	83	74	--	79	--	105	109	--	107	--	--	--	--	--	--	--	--	57	55	--	56	--	37	35	--	36	
CO11D446 Plainsgold	--	93	80	--	86	--	118	118	--	118	--	--	--	--	--	--	--	--	56	56	--	56	--	34	32	--	33	
Averages	--	79	68	--	73	--	79	68	--	73	--	--	--	--	--	--	--	--	57	57	--	57	--	37	33	--	35	
CV (%)	--	7	11	--	9	--	7	11	--	9	--	--	--	--	--	--	--	--	3	1	--	2	--	3	4	--	3	
LSD (0.05)*	--	4	6	--	5	--	5	8	--	7	--	--	--	--	--	--	--	--	1	1	--	1	--	1	2	--	2	

¹HA= Hays, KS, K-State Agricultural Research Center, Ellis County. Test abandoned; herbicide damage.

²CO= Colby, KS, Northwest Agricultural Research Center, Thomas County. No fungicide applied.

³TR= Tribune, KS, Southwest Agricultural Research Center, Greeley County. Fungicide applied.

⁴DC= Decatur, KS, farmer's field, Decatur County. Test abandoned; variability caused by soil conditions at planting.

⁵(W) indicates hard white wheat.

*Yields must differ by more than the LSD value to be considered statistically different.

Table 11. 2016 SOUTHWEST Kansas dryland winter wheat performance test

Brand / Name	LA ¹	MV ²	GC ³	Av.	LA	MV	GC	Av.	-LA-		-MV-		LA	MV	GC	Av.
									2 yr	3 yr	2 yr	3 yr				
	yield (bu/a)				% of test average				multiyear av. (bu/a)				tw (lb/bu)			
AGSECO																
TAM 114	98	106	--	102	104	103	--	103	83	--	82	--	60	59	--	59
Dyna-Gro																
Long Branch	81	106	--	94	85	103	--	94	--	--	--	--	57	59	--	58
Limagrain																
LCS Chrome	96	104	--	100	102	101	--	101	--	--	--	--	61	59	--	60
LCS Mint	80	105	--	93	85	102	--	93	78	68	83	--	59	60	--	59
LCS Pistol	80	105	--	93	85	102	--	93	77	--	83	--	57	59	--	58
LCS Wizard	87	91	--	89	92	88	--	90	64	54	70	--	60	57	--	59
T158	104	105	--	105	110	102	--	106	94	74	82	--	61	60	--	61
OGI																
Bentley	93	108	--	101	98	105	--	102	--	--	--	--	58	59	--	58
Gallagher	93	83	--	88	98	81	--	90	81	70	73	--	60	57	--	58
Iba	82	105	--	93	87	102	--	94	73	64	80	--	61	60	--	61
PlainsGold																
(W) Antero	94	116	--	105	99	112	--	106	93	77	86	--	60	61	--	60
Avery	64	99	--	81	68	96	--	82	--	--	--	--	52	59	--	56
Brawl CL Plus	87	104	--	96	92	101	--	97	76	65	82	--	59	59	--	59
Byrd	70	105	--	88	74	102	--	88	74	65	84	--	57	59	--	58
Syngenta																
Greer	95	97	--	96	101	94	--	97	86	--	80	--	60	57	--	59
SY Flint	92	95	--	93	97	92	--	95	83	--	76	--	62	59	--	60
SY Grit	97	76	--	87	103	74	--	88	--	--	--	--	57	54	--	56
SY Monument	104	111	--	107	110	108	--	109	97	77	85	--	60	60	--	60
SY Sunrise	100	94	--	97	106	91	--	99	--	--	--	--	60	57	--	59
TAM 111	72	94	--	83	76	91	--	84	69	60	--	--	57	58	--	58
Watley Seed																
TAM 112	71	87	--	79	76	84	--	80	75	62	74	--	58	59	--	59
TAM 204	111	106	--	109	117	103	--	110	99	--	86	--	60	58	--	59
WestBred																
WB4458	123	90	--	106	130	87	--	109	96	77	73	--	63	58	--	60
WB-GRAINFIELD	113	107	--	110	120	104	--	112	101	79	85	--	61	60	--	60
WINTERHAWK	111	96	--	103	117	93	--	105	91	76	78	--	61	59	--	60
Wildcat Genetics																
(W) Danby	85	110	--	98	90	107	--	99	85	71	88	--	60	63	--	62
Denali	91	103	--	97	96	100	--	98	75	64	79	--	59	59	--	59
Everest	86	89	--	88	91	87	--	89	78	60	72	--	58	59	--	58
(W) Joe	96	133	--	114	101	129	--	115	94	--	99	--	61	61	--	61
KanMark	95	100	--	98	101	97	--	99	85	70	81	--	60	58	--	59
Larry	107	114	--	111	113	111	--	112	--	--	--	--	61	60	--	60
Oakley CL	94	112	--	103	99	108	--	104	91	80	89	--	61	63	--	62
Tatanka	117	116	--	117	124	113	--	118	--	--	--	--	63	61	--	62
Zenda	113	108	--	111	120	105	--	112	--	--	--	--	64	59	--	61
Experimentals																
Exp HRW15-14 Croplan	87	110	--	99	92	107	--	100	--	--	--	--	58	58	--	58
LCH13-048 Limagrain	111	104	--	107	117	101	--	109	--	--	--	--	62	58	--	60
LCH13DH-21-44 Limagrain	101	89	--	95	107	87	--	97	--	--	--	--	61	55	--	58
LCH13NEDH-14-69 Limagrain	109	120	--	114	115	116	--	116	--	--	--	--	62	61	--	62
CO11D1767 Plainsgold	95	103	--	99	100	100	--	100	--	--	--	--	57	56	--	57
CO11D446 Plainsgold	96	112	--	104	101	109	--	105	--	--	--	--	60	57	--	59
Averages																
Averages	95	103	--	99	95	103	--	99	--	--	--	--	60	59	--	59
CV (%)	6	6	--	6	6	6	--	6	--	--	--	--	2	2	--	2
LSD (0.05)*	4	9	--	7	4	9	--	7	--	--	--	--	4	2	--	3

¹LA= Larned, KS, farmer's field, Pawnee County. Fungicide applied.

²MV= Mullinville, KS, farmer's field, Kiowa County. Fungicide applied.

³GC= Garden City, KS, Southwest Agricultural Research Center, Finney County. Test abandoned; extremely poor stands.

⁴(W) indicates hard white wheat.

*Yields must differ by more than the LSD value to be considered statistically different.

Table 12. 2016 WESTERN Kansas irrigated winter wheat performance test

2016-17 2016-17																															
---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

To access crop performance testing information electronically, visit our website. The information contained in this publication, plus more, is available for viewing or downloading at:

www.agronomy.k-state.edu/services/crop-performance-tests/index.html

Excerpts from the
University Research Policy Agreement with Cooperating Seed Companies

Permission is hereby given to Kansas State University (KSU) to test varieties and/or hybrids designated on the attached entry forms in the manner indicated in the test announcements. I certify that seed submitted for testing is a true sample of the seed being offered for sale.

I understand that all results from Kansas Crop Performance Tests belong to the University and the public and shall be controlled by the University so as to produce the greatest benefit to the public. Performance data may be used in the following ways: 1) Tables may be reproduced in their entirety provided the source is referenced and data are not manipulated or reinterpreted; 2) Advertising statements by an individual company about the performance of its entries may be made as long as they are accurate statements about the data as published, with no reference to other companies' names or cultivars. In both cases, the following must be included with the reprint or ad citing the appropriate publication number and title: "See the official Kansas State University Agricultural Experiment Station and Cooperative Extension Service Report of Progress 1128, '2016 Kansas Performance Tests with Winter Wheat Varieties,' or the Kansas Crop Performance Test website, www.agronomy.k-state.edu/services/crop-performance-tests/index.html, for details. Endorsement or recommendation by Kansas State University is not implied."

Contributors

Main Station, Manhattan

Jane Lingenfelter, Assistant Agronomist (senior author)
Bill Bockus, Plant Pathology
Erick DeWolf, Extension Plant Pathologist
Allan Fritz, Wheat Breeder
Mary Knapp, Weather Data Librarian
Romulo Lollato, Extension Agronomist
Rebecca Miller, Grain Science and Industry
Jeff Whitworth, Extension Entomologist

Experiment Fields

Eric Adey, Ottawa
Gary Cramer, Hutchinson
Andrew Esser, Scandia
James Kimball, Ottawa
Michael Larson, Scandia

Research Centers

Patrick Evans, Colby
Lonnie Mengarelli, Parsons
Alan Schlegel, Tribune
Clayton Seaman, Hays
Guorong Zhang, Hays

Others

Calvin Bohnert, Mankato
Ming Chen, USDA
Richard Chen, USDA
Alex King, Foundation Seed
Laura Knapp, USDA
Justin Knopf, Gypsum, KS

Copyright 2016 Kansas State University Agricultural Experiment Station and Cooperative Extension Service. Contents of this publication may be freely reproduced for educational purposes. All other rights reserved. In each case, give credit to the author(s), 2016 Kansas Performance Tests with Winter Wheat Varieties, Kansas State University, August 2016. Contribution no. 17-024-S from the Kansas Agricultural Experiment Station.

Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned.

Publications from Kansas State University are available at:
www.ksre.ksu.edu

Kansas State University Agricultural Experiment Station and Cooperative Extension Service

K-State Research and Extension is an equal opportunity provider and employer.

SRP1128 August 2016