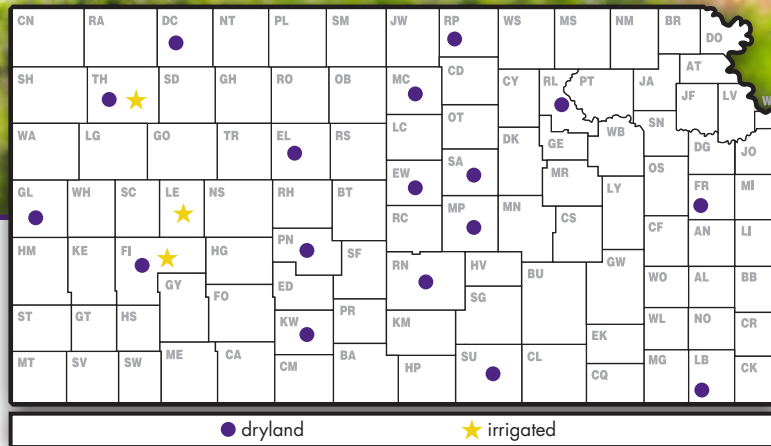
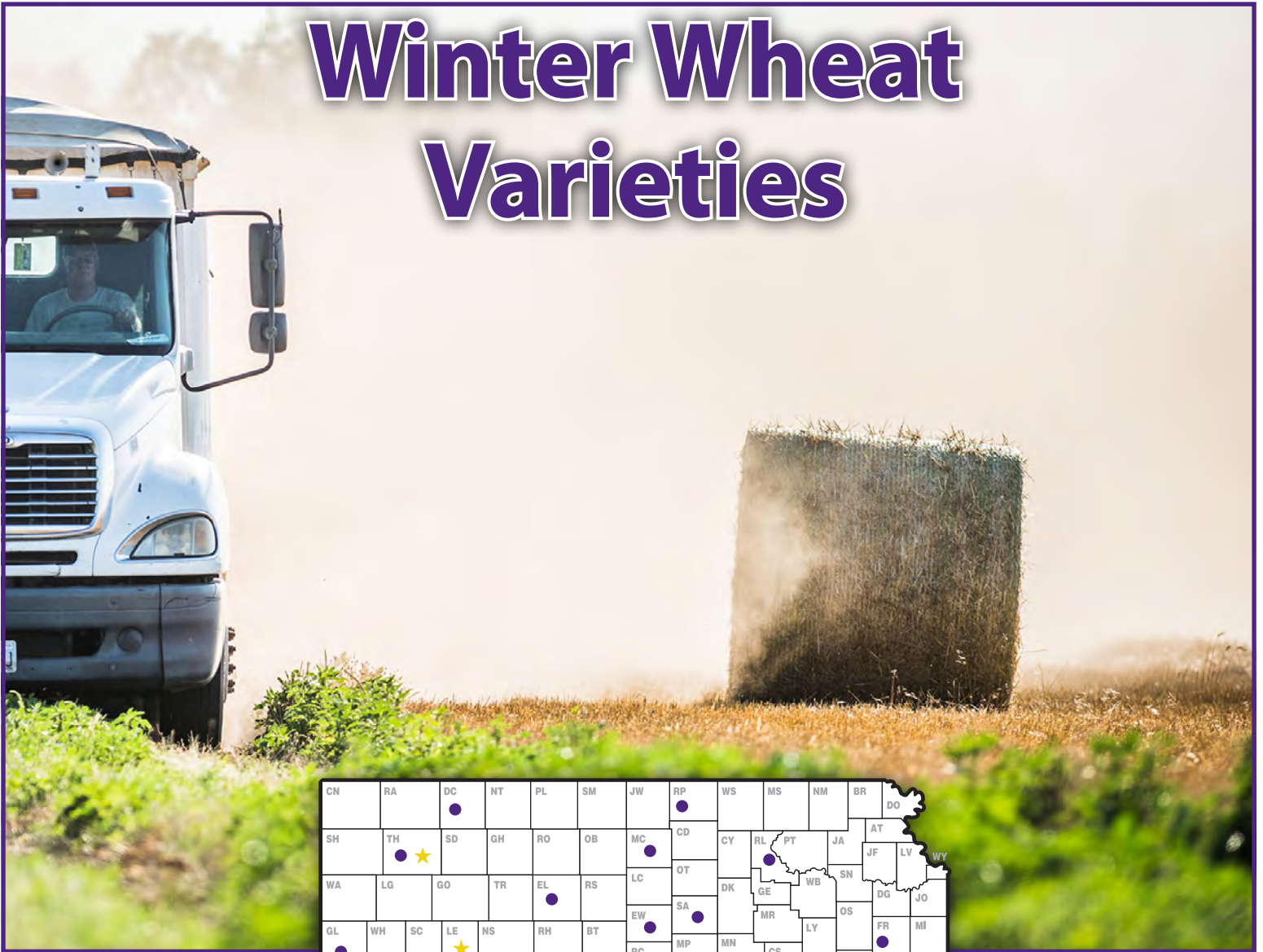


2019 Kansas Performance Tests with

Winter Wheat Varieties



Report of Progress 1151

K-STATE
Research and Extension

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2019 WHEAT CROP REVIEW

Weather and Crop Development

The 2019 winter wheat growing season in Kansas was a tale of two crops: one extremely challenged (though resilient) crop in the central and eastern portions of the state, and a crop that was exposed to near-optimal conditions in western Kansas.

Central and Eastern Kansas

The challenges faced by the wheat crop started early for central and eastern Kansas, with an excessive amount of rainfall during sowing time. Parts of south central Kansas received as much as 19 inches of precipitation between September 1 and November 30, which delayed wheat sowing and, in many cases, precluded producers from sowing wheat. This situation was worsened where producers had to harvest a summer crop (soybeans) prior to sowing wheat. Consequently, the state of Kansas set two new records: (1) the latest sowing of the second half of the crop (approximately 55% of Kansas wheat fields were sown prior to October 5, and in many cases the remaining crop was not sown until mid-November); and (2) the lowest area planted to winter wheat in Kansas in approximately 100 years. The fall of 2018 had an early onset of cold temperatures, which was not conducive for wheat emergence and tillering. While early-sown fields showed good fall development, many fields sown into November showed very limited fall development and did not start tillering until late February and early March. With a majority of fields sown late, and coupled with a cool fall, there were very limited reports of aphids and the virus diseases they might transmit, such as barley yellow dwarf.

The remainder of the growing season was also cooler and moister than average in central and eastern Kansas. From approximately April 1 until June 10, total precipitation ranged from 10.5 to 30.2 inches in the central corridor, which is excessive. Water-logging was a common theme during between boot and flowering stages of development. The amount of waterlogging in a given field depended on field slope and drainage capacity, but the majority of the fields in Sumner and Cowley counties had large drowned-out portions. The excessive moisture during the growing season might also have increased nitrogen and sulfur losses via leaching and denitrification (in the case of nitrogen), rendering many fields in central Kansas nitrogen deficient. Typical symptoms included shortened pale green canopy with limited head size accompanied by contrasting cow pocks of higher fertility. During May, a few hail events brought localized damage and crop termination to some fields in south central Kansas.

Due to the above-average moisture regime, the incidence of fungal diseases such as stripe rust, leaf rust, and especially Fusarium head blight were also above normal, leading to yield losses across the central portion of the state. Hutchinson, for example, was a hotspot for both leaf and stripe rust, while head scab was scattered across the entire central portion of the state. For more details on disease incidence, refer to the disease section in this report.

The combination of delayed sowing, excessive precipitation (more than 60 inches during the growing season for portions of south central Kansas), and below-average temperatures led to a delayed harvest of about 14 days as compared to the long-term average. Likewise, excessive rainfall led to high field-to-field variability in the central portion of the state. It was not uncommon to hear reports of yields of about 60 bushels per acre and test weights of 62 pounds per bushel from one field (typically better-drained, sandier soils), while a neighboring field from the same producer yielded 20 bushels per acre with 55 pounds per bushel test weight (flat fields with worse drainage capacity).

Western Kansas

The western Kansas crop had, overall, a very favorable growing season. Sufficient rainfall during sowing time (ranging from 0.5 to approximately 2 inches between October and November) ensured a good stand establishment. For the most part, the western Kansas wheat crop was sown in a timely manner with the exception of some fields sown after corn, which were delayed due to rainfall during October. However, this represented a minority of the fields, especially when compared to the proportion of fields sown late in central Kansas. An early onset of cold temperatures in the fall avoided excessive fall growth and decreased the incidence of viral diseases that are transmitted by aphids or by the wheat curl mite, restricting wheat streak mosaic occurrence to isolated cases.

Winter precipitation in the form of snowfall was above average, as was spring rainfall in western Kansas, resulting in a full moisture soil profile. This portion of the state received anywhere from 4–13 inches of precipitation between April 1 and June 10, which ensured great grain filling conditions. These above-average precipitation amounts also led to some visible symptoms of nitrogen deficiency in many fields in western Kansas, likely due to a mismatch between nitrogen positioning in the soil profile (leached down below the root zone due to above-average precipitation), coupled to a decreased root system due to

cooler temperatures. Many symptoms of nitrogen deficiency faded after slightly greater temperatures in May allowed for better root development. Despite above-average precipitation, the occurrence of stripe and leaf rusts was sporadic and, while observed at levels to ensure fungicide application in susceptible varieties, caused considerably less yield losses as compared to those observed in central Kansas. During June, a few hail events brought localized damage and crop termination to some fields in western Kansas. It is imperative that producers control their volunteer wheat in fields affected by hail, as the occurrence of volunteer wheat will be greater under these conditions.

Temperatures during the entire growing season were below-average, which delayed crop development. Although a late-developing crop is typically more exposed to heat stress, temperatures during the grain fill period continued to be below-average [April temperature: 57°F (+1.2°F), May temperature: 60°F (-3.3 °F), and June temperature: 72°F (-0.9°F)], which led to longer grain filling period and increased overall yield. Many growers reported yields of 60–70 bushels per acre as opposed to their long-term average of 30–35 bushels per acre and, in many cases, yields greater than 100 bushels per acre were reported. This increased grain filling period, in combination with continuous rainfall events, delayed harvest in parts of the state, leading to one of the latest harvests in recent years. (Romulo Lollato, Kansas State University Extension Wheat Specialist and Mary Knapp, Kansas State University Climatologist)

Diseases

Diseases were a major factor for wheat production in 2019. The frequent rainfall and extended periods of high relative humidity favored the development of many fungal diseases. Both stripe rust and leaf rust were severe in many of the variety testing locations. Evidence suggests that the rust populations changed to overcome the genetic resistance of several widely-grown varieties.

Leaf spot diseases and Fusarium head blight (head scab) were also problematic in the central and eastern regions of the state. Delays in planting and cold fall temperatures slowed the development of viral diseases including barley yellow dwarf and wheat streak mosaic. As a result, the yield losses to these diseases were below-normal in most areas. The incidence of wheat soilborne mosaic was abnormally high in parts of central and western Kansas. (Erick De Wolf, Kansas State University Department of Plant Pathology)

Insects

Overall, wheat pest problems were relatively infrequent in the fall of 2018 and into the spring of 2019. Some early-planted fields still had serious problems with Hessian flies, to the extent that some spots were replanted.

There were also armyworm problems, both in the fall and then again in the spring. Many fields required treatment in the fall to prevent foliage loss. Spring armyworm infestations were widespread and usually started in areas of brome before moving into adjacent wheat fields. On average, one armyworm can consume about 3 whole wheat plants during the course of the worm’s development.

Grasshoppers also caused a little concern in the spring, but that is not unusual. (Holly Davis and Jeff Whitworth, Kansas State University Department of Entomology)

Harvest Statistics

The Kansas Agricultural Statistics’ July estimate of the 2019 crop was 330 million bushels from 6.6 million acres, down 10% from last year’s crop. Yield per harvested acre is expected to average 50 bushels, up 12 bushels from last year’s final yield. (July 2019, *Crops Report*, Kansas Agricultural Statistics)

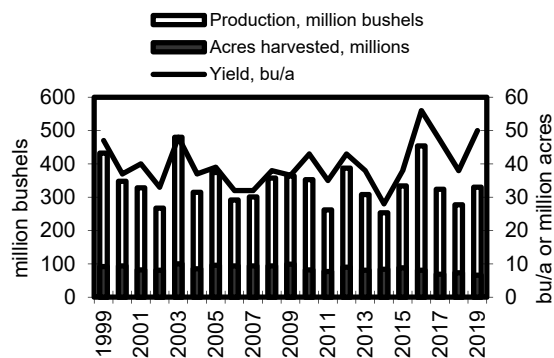


Figure 1. Historical Kansas wheat production

SY Monument moved into the top spot as the new leading variety for Kansas, accounting for 7.2% of the state’s planted acres. WB Grainfield rose from the fourth most popular variety to the second spot in 2019 at 6.4%. Winterhawk came in at the third spot with 4.8%. Zenda moved into the top five from the eighteenth spot last year at 4.7%. Everest dropped to the fifth spot with 3.8%. (March 2019, *Wheat Variety*, Kansas Agricultural Statistics)

Acresage Distribution

WB Grainfield 11.7	SY Monument 15.9	Everest 30.5
Winterhawk 11.7	WB Grainfield 13.1	Zenda 8.8
TAM 114 6.7	Winterhawk 4.6	SY Monument 7.2
Byrd 5.1	Everest 3.2	LCS Chrome (D)
Avery 4.4	Zenda 2.9	WB Cedar (D)
WB Grainfield 10.8	SY Monument 14.2	Everest 24.8
Byrd 10.6	WB Grainfield 7.3	Zenda 8.8
T158 7.6	Zenda 7.3	SY Monument 4.4
TAM 112 5.6	WB4458 5.1	WB Cedar 1.8
Joe+ 4.6	Everest 4.1	WB 4303 (D)
Joe+ 10.0	Zenda 9.8	Everest 40.9
T158 9.1	Gallagher 9.2	Zenda 20.6
Winterhawk 8.5	SY Monument 8.2	Pioneer 25R62 (D)
TAM 112 5.6	LCS Mint 5.6	Pioneer 25R78 (D)
LCS Mint 5.4	Everest 4.7	Pioneer 25R40 (D)

Figure 2. Leading wheat varieties in Kansas; percentage of seeded acres for 2019 crop

2019 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 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 2019 entrants are listed in Table 1.

Results and Variety Characterization

Results from Kansas tests are presented in Tables 4 through 9. 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. The LSD is essentially 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 1151 '2019 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."

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Table 1. Entrants in the 2019 Kansas wheat performance tests

Agrimaxx Wheat Company 7167 Highbanks Road Mascoutah, IL 62258 855-629-9432	Corteva Pioneer P.O. Box 1000 Johnston, IA 50131 515-535-3200	Kansas Wheat Alliance 1990 Kimball Ave, Ste. 200 Manhattan, KS 66502 785-320-4080	University of Nebraska Room 362D Plant Science Bldg Lincoln, NE 68583 402-472-1538	Polansky Seed 2729 M Street Belleville, KS 66935 785-527-2271
AgriPro 11783 Ascher Rd. Junction City, KS 66441 620-532-6283	Croplan by WinField 4001 Lexington Ave N Ardn Hills, MN 55126 218-686-4122	Limagrain Cereal Seeds 2040 SE Frontage Road Fort Collins, CO 80525 970-498-2200	Oklahoma Genetics, Inc. P.O. Box 2113 Stillwater, OK 74076 405-744-7741	Watley Seed Box 51 Spearman, TX 79081 800-659-3838
AGSECO P.O. Box 7 Girard, KS 66743 620-724-6223	Dyna-Gro Seed 2660 Orr Road Bloomville, OH 44818 419-310-6370	MFA 201 Ray Young Dr. Columbia, MO 65201 573-874-5111	PlainsGold 4026 Timberline Road, Ste. 100 Ft. Collins, CO 80525 970-449-6994	WestBred-Monsanto 800 North Lindbergh Blvd Creve Coeur, MO 63141 314-694-1000

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

Variety ¹	% of Kansas acres 2019	Agronomic ratings ²			Relative milling and baking quality ³	Resistance or tolerance to: ²												
		Straw strength ²	Maturity	Height		Soil-borne mosaic	Spindle streak mosaic	Wheat streak mosaic	Barley yellow dwarf	Leaf rust	Stem rust	Septoria			Tan spot	Powdery mildew	Head scab	Hessian fly
												Stripe rust	Tritici blotch					
SY Monument	7.2	5	8	6	AC	1	1	7	6	4	5	5	4	5	5	7	7	
WB Grainfield	6.4	3	6	7	AC	1	1	8	7	6	7	7	6	6	6	7	8	
Winterhawk	4.8	5	5	8	AC	1	1	7	5	7	6	6	7	6	6	7	3	
Zenda	4.7	2	4	6	AC	1	1	7	5	3	4	4	4	5	5	4	5	
Everest	3.8	5	1	6	LD	1	1	7	4	3	8	8	4	7	3	4	6	
T158	3.8	1	3	5	AC	2	2	5	5	8	8	3	7	4	2	8	4	
LCS Mint	3.3	5	5	7	AC	1	1	6	7	7	4	5	5	5	6	8	9	
Gallagher	2.9	2	4	5	AC	1	1	7	6	3	3	3	5	7	6	7	1	
Joe+	2.6	2	7	7	AC	8	8	6	7	7	3	8	3	8	5	7	2	
TAM 114	2.5	4	6	6	EX	8	8	7	6	4	7	3	5	7	5	7	7	
TAM 111	2.2	2	4	6	AC	8	8	7	7	8	3	8	5	6	6	7	6	
Byrd	2.1	1	5	5	AC	2	2	5	7	8	8	8	--	7	3	7	9	
TAM 112	2.0	4	2	5	AC	8	8	5	7	8	3	8	5	6	1	8	8	
WB 4458	1.6	2	4	5	AC	1	1	6	6	7	1	4	7	5	7	9	9	
Oakley CL	1.4	6	7	7	AC	7	7	3	6	5	2	4	5	6	2	5	9	
LCS Chrome	1.4	3	8	7	AC	1	1	7	7	2	2	4	4	4	6	7	1	
Doublestop CL Plus	1.3	2	9	7	AC	1	1	6	6	3	2	4	6	6	5	8	9	
Denali	1.1	2	7	7	AC	8	8	6	7	7	3	8	--	8	5	7	2	
Avery	1.0	5	7	7	AC	1	1	5	7	8	8	8	--	7	3	7	9	
Larry	1.0	3	6	6	AC	1	1	6	7	7	2	2	6	5	5	6	9	
Langin	0.9	6	5	3	EX	1	1	7	--	7	8	3	7	8	7	8	8	
WB Cedar	0.9	1	1	1	AC	1	1	7	6	5	3	3	4	5	2	7	9	
Tatanka	0.8	6	5	5	AC	1	1	7	5	6	2	2	7	7	7	7	9	
SY Grit	0.6	1	5	7	AC	1	1	7	7	6	2	7	5	4	7	7	9	
SY Wolf	0.5	1	5	5	AC	2	1	6	6	2	2	6	3	3	5	7	7	
KanMark	0.5	1	5	3	AC	1	1	6	6	2	3	6	6	6	7	8	9	
Thunderbird	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Danby*	0.5	4	3	6	AC	7	--	5	8	8	2	5	6	8	7	7	9	
MIT	0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
TAM 113	0.4	6	5	5	AC	8	8	7	7	3	2	4	--	7	4	7	9	
PostRock	0.4	2	3	5	AC	2	5	6	7	7	3	5	8	5	8	7	8	
AP503 CL2	0.4	1	5	5	AC	2	5	6	7	8	2	5	4	7	7	7	6	
Blends	13.6																	
Other White	0.6																	
Other Red	21.4																	
Other Soft	0.5																	

*Hard white variety Scale: 1=Best 1=Early 1=Short 9=Poor 9=Late 9=Tall Scale: 1=Most resistant/tolerant 9=Least resistant/tolerant

¹ Varieties and percentage seeded acreage from the March 2019 wheat variety survey, Kansas Agricultural Statistics, Topeka, KS.

² Ratings by Erick De Wolf et al., K-State Plant Pathology. Final ratings and descriptions of disease and insect pests are available in "Wheat Variety Disease and Insect Ratings 2019" Publication MF991 from Kansas State University.

³ Ratings from K-State Wheat Quality Laboratory and USDA-ARS Hard Winter Wheat Quality Laboratory. EX= excellent baking quality; AC= acceptable baking quality; LD= least desirable baking quality.

Table 3. Wheat performance test site descriptions and management in 2019

Region location	Soil type previous crop	N P ₂ O ₅ K ₂ O			Plant-harvest dates	
		N	P ₂ O ₅	K ₂ O	seed rate	Conditions
<u>Northeast Dryland</u>						
Ashland Bottoms Farm Manhattan (MA)	Reading silt loam Soybean	70	0	0	11/1/2018-7/3/2019 75 lb/a	Fungicide applied. Generally good growing conditions.
<u>Southeast Dryland</u>						
East Central KS Experiment Field Ottawa (OT)	Woodson silt loam Soybean	122	50	17	12/7/2018- 60 lb/a	Abandoned. Planted late with poor emergence; severe hail storm in May.
Southeast Agricultural Research Center Parsons (PA)	Parsons silt loam Corn	110	46	30	12/7/2018- 90 lb/a	Abandoned. Planted late with poor emergence in March.
<u>Soft Wheat</u>						
Southeast Agricultural Research Center Parsons (PA)	Parsons silt loam Corn	110	46	30	12/7/2018- 90 lb/a	Abandoned. Planted late with poor emergence in March.
<u>North Central Dryland</u>						
North Central KS Experiment Field Belleville (BE)	Crete silt loam Soybean	130	0	0	10/24/2018-7/15/2019 90 lb/a	No fungicide applied. Scab was present and severe in some susceptible varieties.
North Central KS Farmer's Field Beloit (BL)	Harney silt loam Soybean	115	4	0	11/2/2018-7/11/2019 80 lb/a	Fungicide applied. Good conditions throughout most of the season.
<u>Central Dryland</u>						
Central KS Farmer's Field Gypsum (GY)	Silty clay loam Fallow	50	0	0	10/23/2018- 60 lb/a	Abandoned. Damaged by hail a week after heading.
Central KS Farmer's Field Lorraine (LR)	McCook silt loam Wheat	60	0	0	10/2/2018- 60 lb/a	Abandoned. Damaged by hail shortly before harvest.
<u>South Central Dryland</u>						
South Central KS Farmer's Field McPherson (MC)	Crete silt loam Wheat	60	0	0	10/3/2018- 60 lb/a	Abandoned. Poor emergence after 7 inches of rain in October.
South Central KS Experiment Field Hutchinson (HU)	Funmar-Taver loam Soybean	90	0	0	10/22/2018-6/25/2019 75 lb/a	Stripe rust and leaf rust were present. No fungicide applied.
South Central KS Farmer's Field Conway Springs (CW)	Sandy loam Fallow	40	0	0	11/6/2018- 60 lb/a	Abandoned. Water-logged soils for portion of growing season.
<u>Northwest Dryland</u>						
Agricultural Research Center Hays (HA)	Harney silt loam Wheat	70	0	0	10/3/2018-7/2/2019 60 lb/a	No fungicide applied. Stripe rust was present in susceptible varieties. Uneven emergence in the fall.
Northwest Research-Extension Center Colby (CO)	Keith silt loam Wheat	60	0	0	9/24/2018-7/14/2019 60 lb/a	Fungicide applied. Good establishment in the fall.
Northwest Research-Extension Center Tribune (TR)	Richfield silt loam Wheat	100	24	0	10/5/2018-7/11/2019 60 lb/a	Fungicide applied. Some stripe and leaf rust present.
Northwest KS Farmer's Field Decatur (DC)	Harney clay loam Field pea	40	0	0	9/27/2018-7/19/2019 90 lb/a	Fungicide applied. Good establishment in the fall.
<u>Southwest Dryland</u>						
Southwest KS Farmer's Field Larned (LA)	Harney clay loam Grain sorghum	80	40	0	10/2/2018- 90 lb/a	Abandoned. Poor emergence in the fall.
Southwest KS Farmer's Field Mullinville (MV)	Harney clay loam Grain sorghum	100	0	0	10/2/2018- 90 lb/a	Abandoned. Poor emergence in the fall.
Southwest Research-Extension Center Garden City (GC)	Keith silt loam Grain sorghum	60	0	0	9/25/2018-7/6/2019 65 lb/a	No fungicide applied. Above-normal precipitation led to a good growing season.
<u>Western Irrigated</u>						
Northwest Research-Extension Center Colby (CO)	Keith silt loam Fallow	100	0	0	9/24/2018-7/14/2019 120 lb/a	Fungicide applied. Some stripe rust was present.
Southwest Research-Extension Center Garden City (GC)	Keith silt loam Grain sorghum	100	0	0	9/25/2018-7/6/2019 120 lb/a	Fungicide applied. Above-normal precipitation led to a good growing season.
Western KS Farmer's Field Healy, Lane County (LN)	Scott silt loam Fallow	90	0	0	9/22/2018-7/11/2019 80 lb/a	Fungicide applied. Generally good growing conditions with mild hail late in season.

Table 4. 2019 NORTHEAST Kansas dryland winter wheat performance test, fungicide applied

Brand / Name	-MA-				
	MA ¹ yield (bu/a)	MA % of test average	MA test weight (lb/bu)	2 yr multiyear av. (bu/a)	3 yr
AgriMAXX					
AM Eastwood	58	86	49	48	--
AgriPro					
Bob Dole	73	107	54	61	65
SY Benefit	58	85	53	53	65
SY Grit	58	85	52	54	64
SY Monument	65	96	52	54	64
AGSECO					
AG Gallant	65	95	53	57	72
AG Icon	73	108	54	61	65
AG Robust	58	85	53	50	62
KWA					
Everest	69	101	55	57	70
Larry	67	98	51	59	--
Zenda	71	104	56	58	65
Limagrain					
LCS Valiant	70	103	53	--	--
OGI					
Gallagher	72	106	54	60	75
Iba	71	104	54	57	71
Smith's Gold	69	101	53	--	--
Polansky					
Paradise	63	92	52	55	71
Rock Star	68	100	52	--	--
WestBred					
WB4269	73	108	53	61	68
WB4303	64	94	50	--	--
WB4418	68	100	53	57	--
WB4699	87	128	55	--	--
WB4792	67	99	52	--	--
WB-Grainfield	67	98	51	59	69
Experimentals					
AM EX1508C AgriMAXX	80	117	56	--	--
XB4520 WestBred	70	102	52	--	--
Averages	68	100	53	--	--
CV (%)	9	9	2	--	--
LSD (0.05)*	9	13	2	--	--

¹ MA= Manhattan, KS, Ashland Bottoms Research Farm, Riley County.

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

Table 5. 2019 NORTH CENTRAL Kansas dryland winter wheat performance test

Brand / Name	BE ¹ BL ² Av.			BE BL Av.			-BE- 3 yr		-BL- 3 yr		BE BL Av.			BE BL Av.		
	yield (bu/a)			% of test average			multiyear av. (bu/a)				tw (lb/bu)			height (in.)		
AgriMAXX																
AM Eastwood	35	67	51	69	82	76	42	56	49	59	52	57	55	28	29	28
AgriPro																
Bob Dole	70	100	85	137	123	130	56	66	66	67	57	60	58	34	37	35
SY 517 CL2	57	87	72	112	106	109	53	65	56	64	58	61	60	30	31	30
SY Benefit	51	78	64	100	95	98	52	65	52	61	57	60	58	31	33	32
SY Grit	42	75	58	82	92	87	45	60	54	60	54	58	56	31	32	31
SY Monument	47	83	65	91	102	96	45	58	57	61	57	59	58	30	32	31
SY Rugged	41	78	60	81	96	88	42	52	56	59	55	59	57	27	29	28
SY Wolf	48	73	61	94	89	92	47	58	52	54	56	60	58	30	31	30
SY Wolverine	50	82	66	97	100	99	--	--	--	--	55	59	57	27	29	28
AGSECO																
AG Gallant	46	69	57	90	84	87	45	59	49	58	55	59	57	28	30	29
AG Icon	56	83	69	109	102	105	50	62	57	64	57	59	58	31	35	33
AG Robust	53	74	63	103	91	97	52	69	50	57	57	61	59	27	27	27
Croplan																
CP7826	50	101	76	98	124	111	45	--	65	--	57	61	59	36	37	36
CP7869	59	88	74	116	107	112	51	--	57	--	56	60	58	31	34	33
CP7909	54	81	67	105	100	102	--	--	--	--	57	59	58	30	31	30
Dyna-Gro																
Long Branch	50	85	67	97	103	100	49	64	56	62	54	59	57	32	35	34
KWA																
Everest	60	80	70	118	98	108	51	62	55	63	59	61	60	30	31	30
Larry	38	77	57	74	94	84	40	54	56	60	53	60	56	29	30	30
Zenda	68	82	75	132	100	116	60	68	56	60	59	62	60	31	32	31
Limagrain																
LCS Chrome	59	89	74	115	108	112	51	65	57	62	56	61	59	34	38	36
LCS Link	58	97	77	114	118	116	50	--	61	--	57	61	59	32	36	34
LCS Valiant	56	96	76	109	117	113	52	--	64	--	57	60	58	30	32	31
OGI																
Bentley	49	77	63	96	94	95	46	61	54	61	55	57	56	32	35	33
Lonerider	35	55	45	68	67	67	44	--	44	--	53	59	56	28	29	28
Showdown	50	73	62	97	90	94	--	--	--	--	55	59	57	31	33	32
PlainsGold																
Canvas	52	76	64	102	93	97	--	--	--	--	57	59	58	29	32	31
Crescent AX	36	78	57	70	95	83	--	--	--	--	56	60	58	30	32	31
Langin	48	74	61	93	90	92	46	--	54	--	56	59	57	30	30	30
Whistler	33	73	53	65	89	77	37	--	48	--	55	59	57	36	37	36
Polansky																
Paradise	39	77	58	76	94	85	41	60	53	65	54	60	57	28	31	29
Rock Star	55	88	71	107	108	107	--	--	--	--	56	59	57	29	30	29
WestBred																
WB4269	56	90	73	109	110	110	51	60	59	65	57	60	58	27	30	29
WB4418	54	78	66	105	95	100	50	--	53	--	56	59	58	29	29	29
WB4462	49	86	67	96	105	100	--	--	--	--	55	60	58	33	34	33
WB4699	57	84	70	111	102	106	--	--	--	--	57	60	58	28	29	29
WB4792	64	82	73	125	101	113	--	--	--	--	57	60	58	32	34	33
WB-Grainfield	44	87	66	86	107	96	43	60	58	62	53	58	56	33	36	34
Experimentals																
AM EX1508C AgriMAXX	70	90	80	136	110	123	--	--	--	--	59	61	60	32	33	32
CPX79-10 Croplan	56	85	70	109	104	106	--	--	--	--	57	61	59	31	32	31
NHH144913-3 Husker Genetics	56	88	72	110	107	108	--	--	--	--	54	58	56	32	33	33
KS14HW106-6-6 Kansas	49	87	68	95	106	101	47	--	58	--	55	59	57	29	30	29
XB4520 WestBred	53	84	68	103	102	103	--	--	--	--	56	60	58	31	32	31
Averages	51	82	66	51	82	66	--	--	--	--	56	60	58	30	32	31
CV (%)	10	7	--	10	7	--	--	--	--	--	2	1	--	4	4	--
LSD (0.05)*	7	7	--	14	9	--	--	--	--	--	2	1	--	2	2	--

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

²BL= Beloit, KS. farmer's field, Mitchell County. Fungicide applied.

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

Table 6. 2019 SOUTH CENTRAL Kansas dryland winter wheat performance test

Brand / Name	MC ¹	HU ²	CW ³	-HU-			-HU-		HU	HU	HU
				MC	HU	CW	2 yr	3 yr			
	yield (bu/a)			% of test average					tw (lb/bu)	height (in)	lodging (%)
AgriMAXX											
AM Eastwood	--	59	--	--	79	--	43	59	53	32	0
AgriPro											
Bob Dole	--	100	--	--	136	--	68	80	58	35	0
SY Achieve CL2	--	69	--	--	93	--	49	65	58	34	0
SY Benefit	--	73	--	--	99	--	47	63	56	35	6
SY Flint	--	72	--	--	97	--	49	62	57	33	11
SY Grit	--	62	--	--	83	--	48	66	49	33	0
SY Monument	--	82	--	--	111	--	55	71	56	35	0
SY Rugged	--	70	--	--	95	--	49	63	56	30	0
SY Wolverine	--	88	--	--	119	--	--	--	59	32	0
AGSECO											
AG Gallant	--	58	--	--	79	--	41	--	57	29	1
AG Icon	--	86	--	--	116	--	59	74	55	33	0
Croplan											
CP7826	--	81	--	--	110	--	60	--	53	36	6
CP7869	--	76	--	--	103	--	50	--	56	33	8
CP7909	--	75	--	--	102	--	--	--	58	32	15
Dyna-Gro											
Long Branch	--	58	--	--	79	--	40	57	50	33	3
KWA											
Everest	--	63	--	--	86	--	46	62	59	32	53
Larry	--	58	--	--	79	--	42	59	51	33	19
Zenda	--	85	--	--	116	--	56	67	60	33	0
Limagrain											
LCS Chrome	--	95	--	--	129	--	60	72	51	34	0
LCS Mint	--	61	--	--	83	--	47	61	54	34	43
LCS Valiant	--	79	--	--	106	--	54	--	56	32	1
OGI											
Bentley	--	77	--	--	104	--	55	65	56	35	0
Doublestop CL Plus	--	90	--	--	121	--	61	70	62	35	0
Gallagher	--	90	--	--	122	--	58	73	56	34	3
Green Hammer	--	96	--	--	130	--	--	96	59	36	0
Iba	--	65	--	--	89	--	43	63	58	32	3
Lonerider	--	57	--	--	78	--	42	--	57	31	55
Showdown	--	69	--	--	94	--	48	70	52	33	3
Smith's Gold	--	79	--	--	107	--	53	71	57	33	0
Spirit Rider	--	77	--	--	104	--	55	69	54	29	0
(W) Stardust	--	57	--	--	77	--	40	60	55	32	1
PlainsGold											
Canvas	--	60	--	--	81	--	--	--	53	33	9
Crescent AX	--	69	--	--	94	--	--	--	59	34	45
Langin	--	71	--	--	96	--	57	--	59	32	15
Whistler	--	47	--	--	64	--	34	--	50	36	88
Polansky											
Paradise	--	79	--	--	107	--	58	74	57	32	0
Rock Star	--	66	--	--	90	--	--	--	53	32	0
Watley											
TAM 204	--	56	--	--	76	--	42	--	47	33	58
WestBred											
WB4269	--	79	--	--	107	--	50	64	59	30	4
WB4303	--	71	--	--	96	--	52	68	51	31	0
WB4515	--	72	--	--	98	--	55	68	56	33	4
WB4699	--	82	--	--	111	--	--	--	57	29	0

Table 6 continued. 2019 SOUTH CENTRAL Kansas dryland winter wheat performance test

Brand / Name	MC ¹	HU ²	CW ³	MC	HU	CW	-HU-		HU	HU	HU
							2 yr	3 yr			
	yield (bu/a)			% of test average					tw (lb/bu)	height (in)	lodge (%)
WestBred											
WB4792	--	92	--	--	125	--	--	--	50	34	0
WB-Grainfield	--	65	--	--	88	--	50	67	55	33	8
Experimentals											
AM EX1508C AgriMAXX	--	83	--	--	113	--	--	--	59	32	1
CPX79-10 Croplan	--	80	--	--	108	--	--	--	55	32	0
KS14HW106-6-6 Kansas	--	73	--	--	98	--	56	--	58	32	1
DH11HRW053-34 Limagrain	--	89	--	--	121	--	--	--	58	34	0
XB4520 WestBred	--	74	--	--	100	--	--	--	57	33	0
Averages	--	74	--	--	100	--	--	--	56	33	9
CV (%)	--	9	--	--	9	--	--	--	2	5	--
LSD (0.05)*	--	9	--	--	13	--	--	--	2	2	--

¹MC= McPherson, KS, farmer's field, McPherson County. Abandoned.

²HU= Hutchinson, KS, South Central Experiment Field, Reno County. No fungicide applied.

³CW= Conway Springs, KS, farmer's field, Sumner County. Abandoned.

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

Table 7. 2019 NORTHWEST Kansas dryland winter wheat performance test

Brand / Name	yield (bu/a)					% of test average					multiyear av. (bu/a)					tw (lb/bu)					height (in.)								
	HA ¹	CO ²	TR ³	DC ⁴	Av.	HA	CO	TR	DC	Av.	-HA-	-CO-	-TR-	-DC-	2 yr	2 yr	3 yr	2 yr	3 yr	2 yr	HA	CO	TR	DC	Av.	HA	CO	TR	DC
AgriMAXX																													
AM Eastwood	60	94	113	99	92	94	93	107	92	96	50	68	70	88	78	68	62	63	60	62	62	29	--	34	--	31			
AgriPro																													
AP 18AX	74	101	112	114	100	115	99	106	106	107	--	--	--	--	--		64	62	60	62	62	32	--	39	--	36			
SY Grit	56	100	100	104	90	87	99	94	96	94	47	70	67	84	68	71	60	61	62	62	61	30	--	37	--	33			
SY Legend CL2	61	93	92	109	89	95	92	86	101	93	49	68	--	75	--	74	62	63	62	63	62	31	--	35	--	33			
SY Monument	65	105	107	112	97	101	104	100	104	102	52	74	72	85	66	74	63	60	60	62	61	31	--	37	--	34			
SY Rugged	68	97	106	105	94	106	96	100	97	100	56	72	75	89	73	71	64	62	61	62	62	29	--	35	--	32			
SY Sunrise	49	98	91	99	84	77	96	86	92	88	46	73	72	80	67	77	62	63	61	62	62	25	--	34	--	29			
SY Wolf	67	104	120	110	100	105	102	114	102	106	52	72	71	93	71	73	64	64	61	61	63	31	--	39	--	35			
SY Wolverine	60	124	112	110	102	94	122	105	102	106	--	--	--	--	--	--	64	64	61	62	63	29	--	35	--	32			
AGSECO																													
AG Gallant	48	82	85	91	77	75	80	80	85	80	46	63	71	75	69	62	62	63	62	63	63	27	--	33	--	30			
AG Icon	67	107	103	99	94	104	106	97	91	100	59	79	74	82	65	70	64	62	61	63	62	32	--	39	--	35			
TAM 114	62	106	113	117	100	97	104	106	109	104	57	76	77	87	67	78	64	65	62	64	64	30	--	38	--	34			
Croplan																													
CP7826	55	78	92	107	83	86	76	87	99	87	51	58	--	79	--	71	62	63	61	62	62	32	--	38	--	35			
CP7869	60	106	111	111	97	94	104	105	103	102	58	77	--	89	--	74	64	63	61	63	63	28	--	36	--	32			
CP7909	66	95	99	107	92	102	94	93	99	97	--	--	--	--	--	--	63	64	60	62	62	31	--	36	--	33			
Dyna-Gro																													
Long Branch	70	99	118	115	100	109	98	111	106	106	64	79	82	90	78	74	62	65	60	63	62	33	--	39	--	36			
KWA																													
(W) Joe	61	112	109	108	97	95	110	103	100	102	51	77	78	86	76	74	63	64	61	64	63	32	--	41	--	36			
Oakley CL	63	100	115	93	93	98	98	108	86	98	57	75	80	90	81	67	64	63	60	63	63	30	--	38	--	34			
Tatanka	66	105	118	115	101	103	104	112	106	106	58	80	83	95	86	78	62	65	61	63	63	31	--	37	--	34			
Limagrain																													
LCS Avenger	70	89	96	106	90	109	88	90	98	96	60	69	--	75	--	71	60	62	60	62	61	28	--	33	--	30			
LCS Chrome	57	106	99	106	92	88	104	94	98	96	48	70	73	80	65	71	62	62	59	63	62	33	--	40	--	36			
LCS Link	62	92	116	114	96	96	91	109	105	101	--	--	--	--	--	--	65	64	61	64	63	31	--	39	--	35			
LCS Mint	70	106	120	98	99	109	104	113	91	104	60	74	73	88	74	70	65	63	61	63	63	34	--	41	--	37			
LCS Valiant	68	112	103	118	100	106	110	97	110	106	57	78	--	86	--	78	63	62	62	63	62	29	--	35	--	32			
OGI																													
Lonerider	61	112	108	113	99	95	110	102	105	103	59	82	83	90	79	77	62	67	61	61	63	27	--	36	--	31			
PlainsGold																													
Avery	62	108	112	109	98	96	107	106	101	102	58	82	78	90	76	71	61	63	60	62	62	33	--	40	--	36			
Breck	69	115	107	123	103	107	113	100	114	109	--	--	--	--	--	--	65	63	61	64	63	33	--	39	--	36			
Byrd	63	104	119	120	102	98	102	112	111	106	52	76	74	92	77	65	63	62	59	63	62	30	--	40	--	35			
Canvas	65	99	102	108	94	102	97	96	100	99	--	--	--	--	--	--	63	61	61	63	62	29	--	37	--	33			
Crescent AX	74	108	118	99	100	115	106	111	92	106	--	--	--	--	--	--	65	63	61	62	63	33	--	39	--	36			
Langin	73	110	113	104	100	114	108	106	97	106	55	78	81	91	75	70	64	60	61	61	61	31	--	36	--	34			
Monarch	59	99	109	113	95	92	98	103	105	99	--	--	--	--	--	--	59	65	59	63	61	31	--	37	--	34			
Whistler	71	99	113	112	99	111	97	107	104	105	62	81	--	90	--	75	61	62	60	63	61	34	--	40	--	37			
Polansky																													
Paradise	55	110	105	100	93	86	108	99	93	97	48	72	--	84	--	65	62	63	61	63	62	30	--	36	--	33			
Rock Star	65	93	98	109	91	101	92	92	101	96	--	--	--	--	--	--	63	62	61	62	62	30	--	34	--	32			
Watley																													
TAM 112	76	95	92	108	93	118	94	86	100	100	62	71	--	80	--	72	64	63	61	63	63	32	--	37	--	34			
TAM 204	65	92	102	112	93	101	90	96	104	98	53	66	--	80	--	70	63	61	61	62	62	32	--	37	--	34			
WestBred																													
WB4418	59	109	96	107	93	93	107	90	99	97	52	76	--	80	--	73	61	61	59	61	60	30	--	35	--	32			
WB4462	61	97	92	115	91	95	96	87	106	96	50	69	73	80	71	74	63	64	61	63	63	31	--	39	--	35			
WB4792	67	109	120	108	101	105	107	113	100	106	--	--	--	--	--	--	63	63	61	64	63	33	--	39	--	36			
WB-Grainfield	55	108	120	106	97	86	106	113	98	101	44	74	78	94	79	70	63	63	61	63	62	31	--	40	--	36			
Experimentals																													
AM EX1508C AgriMAXX	71	109	81	110	93	111	107	76	102	99	--	--	--	--	--	--	64	65	61	62	63	30	--	37	--	33			
CPX79-10 Croplan	61	96	112	109	95	95	95	105	101	99	--	--	--	--	--	--	62	65	62	64	63	31	--	37	--	34			

Table 7 continued. 2019 NORTHWEST Kansas dryland winter wheat performance test

Brand / Name	HA ¹	CO ²	TR ³	DC ⁴	Av.	HA	CO	TR	DC	Av.	-HA- -CO- -TR- -DC-					HA	CO	TR	DC	Av.	HA	CO	TR	DC	Av.	
											2 yr	2 yr	3 yr	2 yr	3 yr											2 yr
Experimentals																										
NHH144913-3 Husker Genetics	64	98	105	98	91	100	96	99	91	96	--	--	--	--	--	61	60	59	60	60	31	--	38	--	35	
KS14HW106-6-6 Kansas	70	99	114	106	97	110	97	107	98	103	57	68	--	93	--	72	65	66	61	63	64	29	--	37	--	33
KS15H116-6 Kansas	77	111	116	111	104	119	109	110	103	110	--	--	--	--	--	64	63	61	63	63	31	--	38	--	34	
KS15H161-1 Kansas	73	106	104	117	100	115	104	98	108	106	--	--	--	--	--	64	65	61	63	63	32	--	38	--	35	
XB4520 WestBred	60	98	109	104	93	93	96	103	96	97	--	--	--	--	--	64	70	61	64	65	30	--	36	--	33	
Averages	64	102	106	108	95	100	100	100	100	100	--	--	--	--	--	63	63	61	63	62	31	--	37	--	34	
CV (%)	12	5	11	9	--	12	5	11	9	--	--	--	--	--	--	3	2	2	1	--	5	--	4	--	--	
LSD (0.05)*	10	6	19	14	--	16	6	18	13	--	--	--	--	--	--	3	2	2	1	--	2	--	3	--	--	

¹HA= Hays, KS, K-State Agricultural Research Center, Ellis County. No fungicide applied.

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. Fungicide applied.

⁵(W) indicates hard white wheat.

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

Table 8. 2019 SOUTHWEST Kansas dryland winter wheat performance test

Brand / Name	LA ¹	MV ²	GC ³	LA	MV	GC	-LA-		-MV-		LA	MV	GC
	yield (bu/a)			% of test average			yield (bu/a)				tw (lb/bu)		
AgriMAXX													
AM Eastwood	--	--	88	--	--	92	74	85	48	97	--	--	62
AgriPro													
SY Grit	--	--	85	--	--	89	78	72	47	86	--	--	61
SY Monument	--	--	91	--	--	95	79	73	56	97	--	--	63
SY Rugged	--	--	95	--	--	100	82	62	55	96	--	--	65
SY Wolverine	--	--	104	--	--	109	--	--	--	--	--	--	64
AGSECO													
AG Icon	--	--	99	--	--	104	80	81	64	93	--	--	64
TAM 114	--	--	89	--	--	94	86	68	56	109	--	--	63
Croplan													
CP7826	--	--	79	--	--	83	80	--	60	--	--	--	61
CP7869	--	--	97	--	--	102	85	--	53	--	--	--	65
CP7909	--	--	102	--	--	107	--	--	--	--	--	--	65
Dyna-Gro													
Long Branch	--	--	93	--	--	98	83	89	54	104	--	--	62
KWA													
(W) Joe	--	--	101	--	--	106	78	97	60	105	--	--	65
Oakley CL	--	--	96	--	--	101	88	78	62	104	--	--	64
Tatanka	--	--	95	--	--	100	89	82	55	111	--	--	65
Limagrain													
LCS Avenger	--	--	91	--	--	96	80	--	42	--	--	--	63
LCS Chrome	--	--	94	--	--	99	72	66	60	84	--	--	63
LCS Mint	--	--	97	--	--	102	75	72	69	91	--	--	65
LCS Valiant	--	--	95	--	--	100	--	--	--	--	--	--	63
T158	--	--	94	--	--	99	83	82	49	102	--	--	65
OGI													
Lonerider	--	--	104	--	--	109	87	83	56	104	--	--	62
PlainsGold													
Avery	--	--	92	--	--	97	81	77	61	100	--	--	62
Breck	--	--	102	--	--	107	--	--	--	--	--	--	62
Byrd CL Plus	--	--	94	--	--	99	74	--	56	--	--	--	62
Canvas	--	--	100	--	--	106	--	--	--	--	--	--	64
Crescent AX	--	--	96	--	--	101	--	--	--	--	--	--	62
Langin	--	--	105	--	--	110	84	69	60	110	--	--	63
Monarch	--	--	89	--	--	94	--	--	--	--	--	--	64
Whistler	--	--	94	--	--	99	76	--	62	--	--	--	59
Watley													
TAM 112	--	--	92	--	--	97	75	--	55	--	--	--	62
TAM 204	--	--	93	--	--	98	70	--	49	--	--	--	61
WestBred													
WB4462	--	--	95	--	--	100	77	88	52	99	--	--	64
WB4515	--	--	80	--	--	84	--	--	--	--	--	--	64
WB4792	--	--	105	--	--	110	--	--	--	--	--	--	65
WB-Grainfield	--	--	98	--	--	103	81	85	67	113	--	--	63
Experimentals													
AM EX1508C AgriMAXX	--	--	103	--	--	108	--	--	--	--	--	--	65
CPX79-10 Croplan	--	--	89	--	--	94	--	--	--	--	--	--	66
NW13493 Husker Genetics	--	--	93	--	--	98	--	--	--	--	--	--	65
KS14HW106-6-6 Kansas	--	--	101	--	--	107	83	--	52	--	--	--	67
KS15H116-6 Kansas	--	--	100	--	--	105	--	--	--	--	--	--	66
KS15H161-1 Kansas	--	--	105	--	--	111	--	--	--	--	--	--	64
XB4520 WestBred	--	--	90	--	--	95	--	--	--	--	--	--	65
Averages	--	--	95	--	--	95	--	--	--	--	--	--	64
CV (%)	--	--	7	--	--	7	--	--	--	--	--	--	2
LSD (0.05)*	--	--	10	--	--	10	--	--	--	--	--	--	2

¹LA= Larned, KS, farmer's Field, Pawnee County. Abandoned.

²MV= Mullinville, KS, farmer's Field, Kiowa County. Abandoned.

³GC= Garden City, KS, Southwest Agricultural Research Center, Finney County. No fungicide applied.

⁴(W) indicates hard white wheat.

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

Table 9. 2019 WESTERN Kansas irrigated winter wheat performance test

Brand / Name					-CO-				-GC-							
	CO ¹	GC ²	LN ³	Av.	CO	GC	LN	Av.	2 yr	3 yr	2 yr	3 yr	CO	GC	LN	Av.
	yield (bu/a)				% of test average				multiyear av. (bu/a)				tw (lb/bu)			
AgriMAXX																
AM Eastwood	122	108	91	107	100	92	98	97	111	104	90	93	59	64	57	60
AgriPro																
SY Grit	112	105	84	100	91	90	91	91	106	90	88	90	59	63	56	59
SY Monument	113	121	91	109	93	104	99	99	107	97	96	96	59	65	56	60
SY Sunrise	114	101	92	102	93	87	100	93	111	101	89	91	60	63	57	60
SY Wolf	130	117	103	117	106	101	112	106	115	97	97	92	62	66	58	62
SY Wolverine	140	127	100	122	115	109	108	111	--	--	--	--	62	65	57	61
AGSECO																
AG Icon	119	127	92	113	98	109	100	102	107	97	103	98	62	65	58	62
TAM 114	137	106	95	113	112	91	103	102	121	106	97	95	64	67	57	62
Croplan																
CP7826	127	102	91	107	104	87	99	97	111	--	93	--	61	63	57	60
CP7869	120	128	90	113	98	110	98	102	114	--	94	--	61	67	56	61
CP7909	111	115	86	104	91	99	93	94	--	--	--	--	61	63	58	61
Dyna-Gro																
Long Branch	117	122	88	109	96	105	96	99	110	100	107	103	60	65	55	60
KWA																
(W) Joe	130	121	91	114	107	104	99	103	113	100	96	96	62	65	57	61
Oakley CL	124	120	88	111	102	103	96	100	108	--	108	--	63	65	57	62
Limagrain																
LCS Avenger	120	116	98	111	98	100	106	101	112	--	99	--	61	65	55	60
LCS Link	109	116	94	106	90	100	102	97	104	--	103	--	61	66	58	62
T158	113	105	89	102	92	90	97	93	112	99	95	94	62	66	57	62
OGI																
Lonerider	139	122	90	117	114	105	98	106	126	118	103	108	60	63	58	60
Showdown	124	128	96	116	101	110	104	105	--	--	--	--	59	67	57	61
PlainsGold																
Breck	126	124	96	116	104	106	104	105	--	--	--	--	62	67	58	62
Canvas	113	121	100	111	93	104	108	102	--	--	--	--	61	66	57	61
Monarch	109	121	102	111	90	104	110	101	--	--	--	--	59	64	56	60
Watley																
TAM 112	107	101	67	92	88	87	72	82	94	--	90	--	62	64	56	61
TAM 204	112	111	92	105	92	95	99	96	104	--	94	--	58	63	56	59
WestBred																
WB4269	110	114	86	103	90	98	93	94	--	--	--	--	60	66	56	61
WB4303	126	104	101	110	103	89	110	101	119	105	89	91	58	62	54	58
WB4418	132	110	89	110	108	94	96	100	117	--	89	--	61	65	55	60
WB4792	137	132	100	123	112	113	108	111	--	--	--	--	63	66	56	62
WB-Grainfield	131	114	87	111	107	98	94	100	117	109	92	94	60	64	57	60
Experimentals																
AM EX1508C AgriMAXX	111	129	94	111	91	111	102	101	--	--	--	--	60	65	57	60
CPX79-10 Croplan	129	123	92	115	106	106	100	104	--	--	--	--	63	66	58	63
KS14HW106-6-6 Kansas	132	118	84	112	108	101	91	100	116	--	89	--	62	66	58	62
LCH14-52 Limagrain	108	108	99	105	89	93	107	96	--	--	--	--	61	66	56	61
XB4520 WestBred	132	127	99	119	108	109	107	108	--	--	--	--	63	67	58	63
Averages	122	117	92	110	122	117	92	110	--	--	--	--	61	65	57	61
CV (%)	9	5	7	--	9	5	7	--	--	--	--	--	2	3	2	--
LSD (0.05)*	15	8	9	--	12	7	10	--	--	--	--	--	2	3	2	--

¹CO= Colby, KS, Northwest Agricultural Research Center, Thomas County. No fungicide applied.

²GC= Garden City, KS, Southwest Agricultural Research Center, Finney County. Fungicide applied.

³LN= Healy, KS, farmer's field, Lane County. Fungicide applied.

⁴(W) indicates hard white wheat.

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

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

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