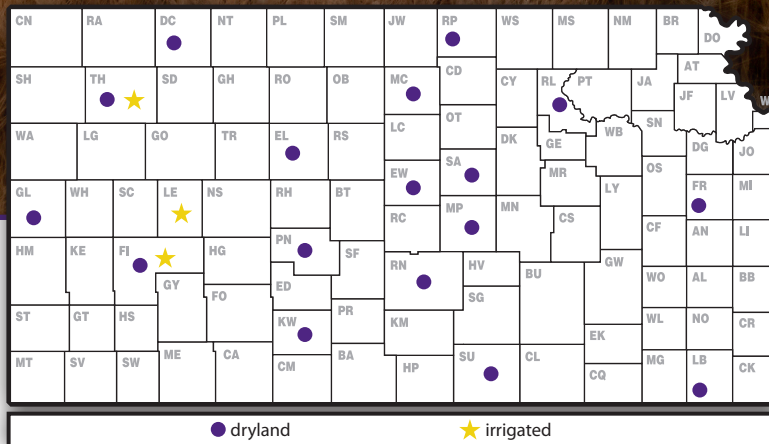


2020 Kansas Performance Tests with

Winter Wheat Varieties



Report of Progress 1158

K-STATE
Research and Extension

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2020 WHEAT CROP REVIEW

Weather and Crop Development

From extreme drought and harsh spring freezes, to an almost stress-free growing season; variability is the key word explaining the 2020 winter wheat growing season in Kansas. Different parts of the state were exposed to different levels of stresses, resulting in very different crop conditions and yield levels.

Fall drought: Wheat needs (at least some) water to emerge

While the majority of the state started out the 2020 wheat growing season with enough precipitation to get a good crop establishment, this was not the case for a large portion of southwest Kansas. Cumulative precipitation between September 1 and December 31, 2019, ranged from 0.84 inches in the far southwest corner of Kansas to as much as 18.71 inches in far southeast. The majority of the wheat growing region (namely central and western Kansas) received between 0.84 and about 7.5 inches of precipitation during this period. For southwest Kansas, this precipitation amount represents a deficit of about 3.5 to 6.4 inches as compared to the long-term normal precipitation for the period studied. With such a limited precipitation amount in the southwest, the wheat crop was not able to germinate and emerge during the fall in approximately eight counties west and south of Finney County. The southwest Kansas crop did not emerge until December 28, 2019, when amounts of up to 1.25 inches of precipitation occurred. While a spring-emerged winter wheat crop can still vernalize and produce grain, its yield potential is about half of a fall-emerged crop; so the wheat season in southwest Kansas already started with a reduced yield potential.

While the remainder of the state had enough precipitation to emerge in the fall, it is important to note that more and more wheat area is double-cropped after a summer crop every year, especially after soybeans in central Kansas and after corn in western Kansas. These cropping systems delay wheat sowing and decrease the time for wheat tillering in the fall. There was a striking difference in fall development as affected by sowing date in the 2020 wheat crop; with early-sown fields attaining up to 6–8 tillers by December while late-sown fields only had the main tiller and perhaps an additional, secondary tiller at the same time. This difference is important because the fall-developed tillers have a greater yield potential than spring-developed tillers. Nonetheless, the winter was mild (average temperature of 34.3°F as compared to the long-term mean 31.8°F), which allowed the wheat crop to tiller through the winter and, to a given extent, compensate for the delayed sowing in many cases.

Expansion of area under drought stress during the spring

While southwest Kansas was the most affected area by fall drought, the water deficit expanded to the northwest and north central parts of the state during winter and early spring. The cumulative precipitation between September 1, 2019, and May 18, 2020, ranged from 2.85 inches in southwest Kansas, to about 7.75 inches in northwest Kansas, and up to about 11 inches in north central Kansas. When compared to the long-term normal for these regions, these total precipitation amounts correspond to a deficit of as much as 7.2 inches in north central and parts of southwest Kansas. Wheat fields were showing signs of drought stress that ranged from rolling up of leaves added to a blue tint to the crop in the west-central part of the state; to as much as a very stunted crop with senescence of lower canopy and tiller loss in north central and especially southwest Kansas. Meanwhile, central and south central Kansas had a relatively moist winter and early spring, accumulating between 13 and 21 inches of precipitation during the same period. As compared to the long-term normal, these values correspond to a slight deficit of about 1 inch to as much as 5 inches above normal.

Regional differences in spring development due to moisture and temperature regimes

With good moisture availability and a mild winter, the spring development of the wheat crop started on an average date in south central Kansas, with the majority of the wheat varieties reaching first hollow stem sometime in mid-March. For southwest and north central Kansas, however, wheat development during early spring was delayed due to the dry conditions, leading to a significant difference in development at different parts of the state. The wheat crop was still reaching the first node in north central Kansas by the time the crop was already heading in south central and southeast Kansas.

Stem frost further decreasing the yield potential

The occurrence of frost events during the spring is not unusual for Kansas and, depending on the region of the state and on cropping system/sowing date, those freezes impacted the wheat crop in different ways. In particular, the week of April 13–17 had several frost events in which air temperatures dipped close to single digits in northwest Kansas, and below 24°F for at least a few hours in most areas of the state, with the exception of south central and southeast Kansas. The areas most affected by these cold temperatures were north central and northwest Kansas, where dry conditions exacerbated the negative impacts of

the cold spell. While the crop was mostly still between tillering (northwest) and jointing (north central) stages, which are more tolerant to cold temperatures than more advanced stages, temperatures were cold enough to cause severe tiller and leaf losses. These losses were more apparent in the late-sown crops, usually following soybeans in north central and corn in western Kansas, mostly due to a small canopy having less potential to buffer the cold temperatures, where individual fields had 50–75% of tiller loss. In earlier sown fields, the tiller loss was more in the 20–40% range, and the plants were developed enough to compensate for this loss with secondary tillers. With the freeze events happening in mid-April and no significant precipitation occurring in these locations until mid- to late-May, the dry conditions that followed the freeze events further hampered wheat development and decreased the crop's yield potential. While the crop was more advanced in central and south central Kansas, the temperatures were not nearly as cold and therefore the crop sustained no injury from the freeze. Thus, the area south of McPherson County through Cowley County, and west to Meade County, was likely showing the best yield potential for wheat in Kansas during the 2020 season.

Grain filling period

As the 2020 wheat crop went through the grain filling period, the occurrence of precipitation in the last ten days of May helped the crop in most of the state. The precipitation during this period ranged from 0.97 inches to 2.99 inches, which was enough rain for most of the state to ensure at least an average crop despite all the previously mentioned adversities. However, southwest Kansas only received 0.97 inches of precipitation, with a divisional average of only 7.04 inches for the September to May period. In fact, many dryland fields in the region were going through the grain fill period and were only about 10 inches tall. Another issue faced by the crop were warm temperatures during the grain filling. The first week of June brought extremely high temperatures across the entire state, with as many as 58 hours above 91°F. While the crop in southwest and south central Kansas were already in the late dough stages by that time, the crop in north central and northwest Kansas were still at the early stages of grain fill. Those temperatures were likely enough to decrease photosynthetic rates and consequently further reduce yields in those regions (Romulo Lollato, Kansas State University Extension Wheat Specialist; and Mary Knapp, Kansas State University Climatologist.)

Diseases

In general, wheat diseases had a relatively low impact on yields in 2020. The most widespread disease was stripe rust, affecting most wheat producing counties across the state. Although stripe rust was widespread, levels remained

trace in most fields, likely due to a late arrival of the pathogen and warmer late season conditions.

There were several fields in central and southeast Kansas that had higher than normal tan spot, *Septoria tritici* blotch, and *Stagonospora* leaf blotch, likely due to high build-up of those pathogens in residue and wet weather.

Leaf rust arrived late enough in the season that yield loss was minimal. Wheat streak mosaic, which has been very severe in some years, was limited to pockets of severely damaged farms in 2020. (Kelsey Andersen Onofre, Kansas State University Department of Plant Pathology.)

Insects

During fall, as planted wheat germinated, there were a few reports of armyworms reducing early stands. Most of these infestations seemed to come from areas of brome adjacent to wheat. Some areas were treated with insecticides as they exceeded the treatment threshold. Another insect pest that caused problems in the 2019–2020 season were army cutworms. Many fields, especially in south central and north central Kansas, had areas decimated by army cutworm larvae that developed over the fall/winter from eggs deposited in the fall of 2019. Army cutworms are an occasional pest that seem to be more common and widespread in those years with a relatively dry summer and wet fall.

Hessian flies were relatively common during the 2019–2020 wheat growing season. Reports indicated that several fields were decimated by Hessian fly infestations, to the extent they were actually lost to harvest.

There were also a few reports of wheat curl mite infestations. Wheat curl mites cause problems mainly when they vector some of the viruses that cause wheat streak mosaic disease. Destruction of volunteer wheat is still the best way to mitigate infestations of wheat curl mites and most other wheat pests. (Jeff Whitworth, Kansas State University Department of Entomology.)

Harvest Statistics

The Kansas Agricultural Statistics' July 10 estimate of the 2020 crop was 307 million bushels from 6.4 million acres, down 9% from last year's crop. Yield per harvested acre is expected to average 48 bushels, down 4 bushels from last year's final yield. (July 12, 2020, *Crops Report*, Kansas Agricultural Statistics.)

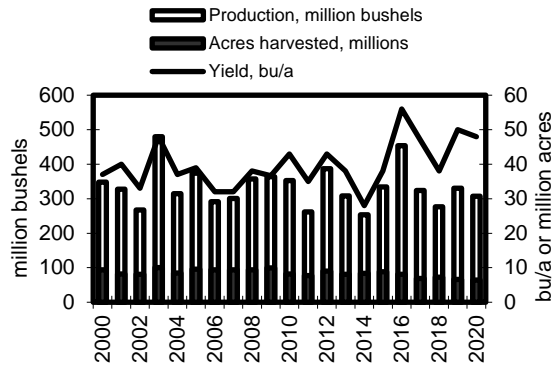


Figure 1. Historical Kansas wheat production

SY Monument achieved the number one spot as the top planted variety in Kansas after a gradual climb since 2015 with 9.7% of wheat planted acres. Zenda moved into the number two spot with 6.4%. WB Grainfield ranked third with 5.3%. Winterhawk claimed the fourth spot at 3.9%. Everest came in as the fifth most popular wheat variety with 2.9% after five consecutive years as number one. (March 2020, *Wheat Variety*, Kansas Agricultural Statistics.)

Acresage Distribution

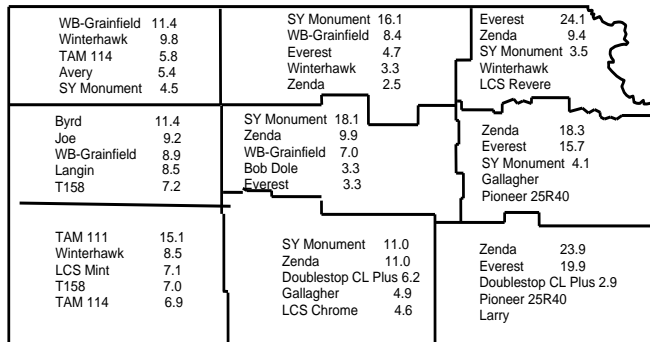


Figure 2. Leading wheat varieties in Kansas; percentage of seeded acreage for 2020 crop

2020 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, 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 2020 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 1158, '2020 Kansas Performance Tests with Winter Wheat Varieties,' or the Kansas Crop Performance Test website, agronomy.ksu.edu/services/crop-performance-tests/index.html for details. Endorsement or recommendation by Kansas State University is not implied."

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CONTRIBUTORS

Main Station, Manhattan

Jane Lingenfelter, Assistant Agronomist (Senior Author)
 Erick De Wolf, Plant Pathology
 Allan Fritz, Wheat Breeder
 Mary Knapp, K-State Climatologist
 Romulo Lollato, Extension Agronomist
 Kelsey Andersen Onofre, Extension Plant Pathology
 Jeff Whitworth, Extension Entomologist

Experiment Fields

Eric Adee, Ottawa
 Scott Dooley, Scandia
 Andrew Esser, Scandia
 James Kimball, Ottawa
 Michael Larson, Scandia
 Doug Stensaas, Scandia
 Keith Thompson, Hutchinson
 Dylan Walta, Ottawa

Research Centers

Lucas Haag, Colby
 Lonnie Mengarelli, Parsons
 Gretchen Sassenrath, Parsons
 Alan Schlegel, Tribune
 Guorong Zhang, Hays

Cooperators

Justin Knopf, Gypsum
 Calvin Bohnert, Mankato

Table 1. Entrants in the 2020 Kansas wheat performance tests

AgriMAXX Wheat Company 7167 Highbanks Road Mascoutah, IL 62258 855-629-9432	AGSECO P.O. Box 7 Girard, KS 66743 620-724-6223	Kansas Wheat Alliance 1900 Kimball Avenue Manhattan, KS 66502 785-320-4080	PlainsGold 4026 S. Timberline Road Fort Collins, CO 80525 970-702-1460	WinField United - Croplan 4001 Lexington Ave N Arden Hills, MN 55126 651-481-2222
AgriPro Wheat, Inc. 11783 Ascher Rd. Junction City, KS 66441 620-532-6283	DuPont Pioneer P.O. Box 1000 Johnston, IA 50131 515-535-3200	Limagrain Cereal Seeds 2040 SE Frontage Road Fort Collins, CO 80525 970-231-8875	Polansky Seed, Inc 2729 M Street Belleville, KS 66935 785-527-2271	
Agricultural Research Center-KAES 1232 240 th Ave. Hays, KS 67601 785-625-3425	Dyna-Gro Seed 117 East Laurel St. Garden City, KS 620-214-9024	Oklahoma Genetics, Inc. P.O. Box 2113 Stillwater, OK 74076 405-744-7741	WestBred-Bayer Crop Science 800 North Lindbergh Boulevard St. Louis, MO 63167 314-694-1000	

Table 3. Wheat performance test site descriptions and management in 2020

Region and location	Soil type previous crop	N	P₂O₅	K₂O	Plant-harvest dates	Conditions
<u>Northeast Dryland</u>						
Ashland Agronomy Farm Manhattan (MA)	Reading silt loam Soybean	70	0	0	10/18/2019-X	Abandoned: extensive freeze damage.
<u>Southeast Dryland</u>						
East Central KS Experiment Field Ottawa (OT)	Woodson silt loam Soybean	119	60	0	11/13/2019-6/24/2020	Minimal freeze damage in the spring.
Southeast Research-Extension Center Parsons (PA)	Parsons silt loam Corn	60	46	30	10/23/2019-6/18/2020	No fungicide applied. Evidence of fusarium and strip rust in susceptible varieties.
<u>Soft Wheat</u>						
Southeast Research-Extension Center Parsons (PA)	Parsons silt loam Corn	60	46	30	10/23/2019-6/18/2020	No fungicide applied. Evidence of fusarium and strip rust in susceptible varieties.
<u>North Central Dryland</u>						
North Central KS Experiment Field Belleville (BE)	Crete silt loam Fallow	80	30	0	10/16/2019-7/7/2020	No fungicide applied. Early-maturing varieties were affected by freeze.
North Central KS Farmer's Field Beloit (BL)	Harney silt loam Wheat	90	25	0	10/25/2019-7/1/2020	Fungicide applied. Early-maturing varieties were affected by freeze.
<u>Central Dryland</u>						
Central KS Farmer's Field Gypsum (GY)	Silty clay loam Fallow	50	0	0	10/16/2019-X	Abandoned: extensive freeze damage.
Central KS Farmer's Field Lorraine (LR)	McCook silt loam Fallow	60	0	0	10/9/2019-6/30/2020	Fungicide applied. Early-maturing varieties were affected by freeze.
<u>South Central Dryland</u>						
South Central KS Farmer's Field McPherson (MC)	Crete silt loam Fallow	60	0	0	10/17/2019-6/26/2020	Fungicide applied. Early-maturing varieties were affected by freeze.
South Central KS Experiment Field Hutchinson (HU)	Funmar-Taver loam Canola	113	0	0	10/29/2019-6/30/2020	Fungicide applied. Generally good growing season.
South Central KS Farmer's Field Conway Springs (CW)	Sandy loam Fallow	40	0	0	10/16/2019-6/23/2020	Fungicide applied. Generally good growing season.
<u>Northwest Dryland</u>						
Research-Extension Center Hays (HA)	Harney silt loam Wheat	70	0	0	9/26/2019-6/29/2020	No fungicide applied. Freeze damage apparent in the spring.
Northwest Research-Extension Center Colby (CO)	Keith silt loam Fallow	60	0	0	9/23/2019-7/7/2020	No fungicide applied. Severe freeze damage in the spring.
Northwest Research-Extension Center Tribune (TR)	Richfield silt loam Fallow	112	40	0	10/7/2019-6/25/2020	Minimal freeze damage in the spring.
Northwest KS Farmer's Field Decatur (DC)	Harney clay loam Grain Sorghum	40	0	0	9/24/2019-7/8/2020	No fungicide applied.
<u>Southwest Dryland</u>						
Southwest KS Farmer's Field Larned (LA)	Harney clay loam Grain sorghum	80	0	0	9/29/2019-6/30/2020	Fungicide applied. Minimal freeze damage in the spring.
Southwest KS Farmer's Field Mullinville (MV)	Harney clay loam Grain Sorghum	80	0	0	10/8/2019-6/24/2020	Fungicide applied. Army cutworm grazing damage in April.
Southwest Research-Extension Center Garden City (GC)	Keith silt loam Wheat	60	0	0	10/9/2019-7/3/2020	No fungicide applied. Very dry conditions throughout season.
<u>Western Irrigated</u>						
Northwest Research-Extension Center Colby (CO)	Keith silt loam Fallow	100	0	0	9/23/2019-7/7/2020	No fungicide applied.
Southwest Research-Extension Center Garden City (GC)	Keith silt loam Corn	100	0	0	10/9/2019-7/3/2020	No fungicide applied.
Western KS Farmer's Field Healy, Lane County (LN)	Scott silt loam Fallow	90	0	0	9/24/2019-X	Abandoned: extensive freeze damage.

Table 4. 2020 SOUTHEAST Kansas dryland winter wheat performance test

Brand / Name	OT ¹			PA ²			-OT-		-PA-		OT			PA		
	yield (bu/a)	Av.	% of test average	2 yr	3 yr	multiyear av. (bu/a)	test weight (lb/bu)	height (in)								
AgriMAXX																
AM Cartwright	58	83	70	114	102	108	--	--	--	--	60	61	60	--	38	38
AM Eastwood	37	67	52	74	83	78	--	37	--	62	57	58	57	--	35	35
AgriPro																
SY Benefit	55	78	66	108	95	102	--	48	--	62	59	60	59	--	40	40
SY Grit	35	65	50	70	80	75	--	40	--	58	52	57	55	--	38	38
AGSECO																
AG Icon	51	80	66	101	99	100	--	45	--	64	58	60	59	--	40	40
AG Radical	52	76	64	104	94	99	--	--	--	--	57	57	57	--	38	38
TAM 205	47	84	65	94	103	98	--	--	--	--	60	60	60	--	41	41
KWA																
Everest	46	79	63	92	97	95	--	41	--	64	61	61	61	--	36	36
Zenda	51	86	69	102	106	104	--	44	--	65	60	61	60	--	39	39
OGI																
Smith's Gold	45	84	65	89	104	96	--	--	--	--	58	60	59	--	38	38
Polansky																
Rock Star	56	79	68	111	97	104	--	--	--	--	58	58	58	--	36	36
WestBred																
WB4269	61	87	74	121	107	114	--	50	--	68	60	60	60	--	35	35
WB4303	42	67	55	84	83	83	--	--	--	--	54	55	55	--	37	37
WB4401	59	109	84	117	134	126	--	--	--	--	58	61	60	--	38	38
WB4699	60	95	77	119	116	118	--	--	--	--	58	59	59	--	35	35
Averages	50	81	66	50	81	66	--	--	--	--	58	59	59	--	38	38
CV (%)	9	8	9	9	8	9	--	--	--	--	2	1	2	--	3	3
LSD (0.05)*	7	9	8	13	11	12	--	--	--	--	1	1	1	--	1	1

¹ OT=Ottawa, KS, East Central Experiment Field, Franklin County. No fungicide applied.

² PA=Parsons, KS, Southeast Research-Extension Center, Labette County. No fungicide applied.

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

Table 5. 2020 SOUTHEAST Kansas SOFT winter wheat performance test

Brand / Name	PA					PA
	PA ¹ yield (bu/a)	PA % of test average	2 yr multiyear av. (bu/a)	3 yr multiyear av. (bu/a)	PA test weight (lb/bu)	
AgriMAXX						
AM 415	103	100	--	80	60	40
AM 473	106	104	--	86	59	42
AM 503	114	111	--	--	60	40
AM 505	112	110	--	--	61	38
OGI						
OCW03S580S-8WF	84	82	--	--	57	39
Pioneer						
(S) 25R40	106	103	--	86	58	36
(S) 25R50	98	95	--	78	59	36
(S) 25R61	88	86	--	75	58	39
(S) 25R74	110	108	--	88	62	36
(S) 25R77	103	101	--	79	61	36
Averages	102	100	--	--	59	38
CV (%)	5	5	--	--	2	3
LSD (0.05)*	8	8	--	--	1	2

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

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

Table 6. 2020 NORTH CENTRAL Kansas dryland winter wheat performance test

Brand / Name	BE ¹	BL ²	Av.	BE	BL	Av.	-BE-		-BL-		BE	BL	Av.	
	yield (bu/a)			% of test average			multiyear av. (bu/a)				test weight (lb/bu)			
	2 yr	3 yr	2 yr	3 yr	2 yr	3 yr	2 yr	3 yr	2 yr	3 yr	2 yr	3 yr	2 yr	3 yr
AgriMAXX														
AM Cartwright	40	53	46	95	112	104	55	--	72	--	60	59	59	
AM Eastwood	43	50	46	102	106	104	39	42	59	49	60	58	59	
AgriPro														
AP EverRock	39	45	42	93	95	94	--	--	--	--	60	58	59	
Bob Dole	42	43	43	99	93	96	56	51	72	58	61	58	60	
SY 517 CL2	34	37	36	82	80	81	46	46	62	50	62	60	61	
SY Benefit	36	43	40	86	91	89	44	46	61	50	61	60	60	
SY Grit	27	35	31	65	75	70	35	39	55	47	59	55	57	
SY Monument	47	48	48	112	102	107	47	45	66	54	60	57	59	
SY Rugged	40	50	45	94	107	100	41	41	64	54	61	59	60	
SY Wolverine	36	38	37	86	81	84	43	--	60	--	61	59	60	
AGSECO														
AG Icon	43	48	46	103	103	103	50	47	66	54	61	59	60	
AG Radical	47	47	47	112	101	106	--	--	--	--	61	58	60	
TAM 205	37	42	39	87	89	88	--	--	--	--	62	60	61	
Dyna-Gro														
Long Branch	44	43	44	105	92	98	47	47	64	52	60	58	59	
KWA														
KS Dallas	37	50	43	88	106	97	--	--	--	--	62	59	60	
KS Western Star	42	47	44	99	101	100	--	--	--	--	62	59	60	
Larry	42	51	46	100	108	104	40	41	64	54	61	59	60	
Tatanka	42	46	44	100	99	99	--	41	--	38	62	59	60	
Zenda	37	48	43	88	103	96	53	52	65	53	61	59	60	
Limagrain														
LCS Chrome	50	52	51	118	112	115	55	51	71	55	61	58	60	
LCS Link	54	43	49	127	93	110	56	51	70	55	61	58	60	
LCS Valiant	44	50	47	104	107	105	50	--	73	--	61	58	60	
OGI														
Bentley	40	53	46	94	113	104	45	44	65	53	60	57	58	
Showdown	40	44	42	95	94	94	45	45	59	64	60	57	59	
PlainsGold														
Canvas	43	46	44	101	98	99	48	--	61	--	61	62	62	
Crescent AX	37	43	40	88	93	90	37	--	61	--	61	58	59	
Guardian	51	49	50	121	105	113	--	--	--	--	62	59	60	
Polansky														
Paradise	28	38	33	66	81	73	34	36	58	48	61	58	60	
Rock Star	44	48	46	105	102	103	50	--	68	--	60	57	58	
WestBred														
WB4269	42	54	48	99	115	107	49	48	72	57	61	59	60	
WB4303	47	48	47	111	102	107	--	45	--	40	60	57	59	
WB4401	53	47	50	127	102	114	--	--	--	--	61	59	60	
WB4595	49	49	49	116	105	110	--	--	--	--	63	60	61	
WB4699	45	51	48	106	109	107	51	--	68	--	60	59	60	
WB4792	41	42	41	97	89	93	53	--	62	--	63	60	62	
WB-Grainfield	50	53	51	118	114	116	47	45	70	56	61	59	60	

Table 6 continued. 2020 NORTH CENTRAL Kansas dryland winter wheat performance test

Brand / Name	BE ¹	BL ²	Av.	BE	BL	Av.	-BE-		-BL-		BE	BL	Av.
	yield (bu/a)			% of test average			multiyear av. (bu/a)				test weight (lb/bu)		
Experimentals													
CO15D098R PlainsGold	48	57	52	113	121	117	--	--	--	--	61	59	60
Averages	42	47	44	42	47	44	--	--	--	--	61	59	60
CV (%)	8	10	9	8	10	9	--	--	--	--	1	2	1
LSD (0.05)*	6	6	6	14	14	14	--	--	--	--	1	2	1

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 7. 2020 CENTRAL Kansas dryland winter wheat performance test

Brand / Name	GY ¹	LR ²	Av.	GY	LR	Av.	-GY-		-LR-		LR
	yield (bu/a)			% of test average			2 yr		3 yr		
AgriMAXX											
AM Cartwright	--	64	64	--	94	94	--	--	--	--	58
AM Eastwood	--	72	72	--	106	106	--	38	--	65	60
AgriPro											
AP EverRock	--	70	70	--	103	103	--	--	--	--	59
Bob Dole	--	55	55	--	81	81	--	44	--	62	59
SY 517 CL2	--	69	69	--	102	102	--	41	--	66	62
SY Benefit	--	65	65	--	96	96	--	43	--	65	62
SY Grit	--	70	70	--	103	103	--	43	--	69	60
SY Monument	--	62	62	--	92	92	--	39	--	68	59
SY Rugged	--	79	79	--	116	116	--	40	--	72	61
SY Wolverine	--	79	79	--	117	117	--	--	--	--	58
AGSECO											
AG Icon	--	66	66	--	97	97	--	44	--	65	61
AG Radical	--	70	70	--	104	104	--	--	--	--	59
TAM 205	--	57	57	--	84	84	--	--	--	--	61
Croplan											
CP7010	--	70	70	--	103	103	--	--	--	--	62
CP7017 AX	--	69	69	--	102	102	--	--	--	--	60
CP7050 AX	--	55	55	--	81	81	--	--	--	--	61
CP7869	--	75	75	--	111	111	--	--	--	--	61
CP7909	--	59	59	--	86	86	--	--	--	--	59
Dyna-Gro											
Long Branch	--	65	65	--	96	96	--	40	--	65	59
KWA											
KS Dallas	--	64	64	--	94	94	--	--	--	--	59
(W) KS Silverado	--	61	61	--	89	89	--	42	--	63	61
KS Western Star	--	60	60	--	89	89	--	--	--	--	59
Larry	--	72	72	--	105	105	--	42	--	67	61
Zenda	--	67	67	--	99	99	--	42	--	68	61
Limagrain											
LCS Chrome	--	55	55	--	81	81	--	41	--	60	60
LCS Valiant	--	63	63	--	93	93	--	--	--	--	60
OGI											
Bentley	--	64	64	--	95	95	--	38	--	67	59
Doublestop CL Plus	--	59	59	--	88	88	--	47	--	60	62
Gallagher	--	68	68	--	101	101	--	42	--	70	60
Showdown	--	66	66	--	98	98	--	44	--	71	59
Smith's Gold	--	61	61	--	89	89	--	37	--	64	61
PlainsGold											
Canvas	--	76	76	--	111	111	--	--	--	--	61
Crescent AX	--	67	67	--	98	98	--	--	--	--	59
Whistler	--	86	86	--	127	127	--	43	--	83	61
Polansky											
Paradise	--	61	61	--	89	89	--	39	--	60	59
Rock Star	--	77	77	--	114	114	--	--	--	--	61
WestBred											
WB4269	--	72	72	--	106	106	--	42	--	72	61
WB4303	--	72	72	--	106	106	--	40	--	69	58
WB4595	--	74	74	--	109	109	--	--	--	--	62
WB4699	--	74	74	--	108	108	--	--	--	--	60
WB4792	--	77	77	--	113	113	--	--	--	--	62
WB-Grainfield	--	75	75	--	110	110	--	41	--	74	61
Averages	--	68	68	--	68	68	--	--	--	--	60
CV (%)	--	8	8	--	8	8	--	--	--	--	2
LSD (0.05)*	--	8	8	--	11	11	--	--	--	--	2

¹GY=Gypsum, KS, Farmer's Field, Saline County. Abandoned: differential freeze damage.

²LR=Lorraine, KS, Farmer's Field, Ellsworth County. No fungicide applied.

³ (W) indicates hard white wheat.

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

Table 8. 2020 SOUTH CENTRAL Kansas dryland winter wheat performance test

Brand / Name	MC ¹	HU ²	CW ³	Av.	MC	HU	CW	Av.	-MC-	-HU-	-CW-	MC	CW	Av.	
	yield (bu/a)				% of test average				multiyear av. (bu/a)				test weight (lb/bu)		
	3 yr	2 yr	3 yr	3 yr											
AgriMAXX															
AM Cartwright	92	81	64	79	111	101	89	100	--	82	--	--	60	59	60
AM Eastwood	83	78	67	76	100	98	93	97	69	69	54	57	61	59	60
AgriPro															
AP 18AX	79	85	74	79	95	106	102	101	--	--	--	--	58	59	59
AP EverRock	81	79	73	78	98	99	101	99	--	--	--	--	59	60	59
Bob Dole	84	82	70	78	102	102	97	100	71	91	72	58	61	59	60
SY 517 CL2	70	77	73	73	85	96	101	94	--	--	--	--	62	62	62
SY Achieve CL2	72	80	74	75	88	100	102	97	59	75	59	59	62	62	62
SY Benefit	81	75	73	76	99	94	101	98	68	74	56	60	61	61	61
SY Grit	85	68	72	75	103	85	99	96	71	65	54	60	61	59	60
SY Monument	88	80	75	81	106	100	104	103	73	81	63	64	60	59	59
SY Rugged	91	87	67	82	110	109	92	104	70	79	62	59	61	59	60
SY Wolverine	89	77	79	81	108	96	109	104	--	83	--	--	58	60	59
AGSECO															
AG Icon	91	86	66	81	111	107	92	103	74	86	68	58	61	60	60
AG Radical	85	82	84	84	103	102	116	107	--	--	--	--	57	60	58
TAM 205	67	74	70	70	81	92	96	90	--	--	--	--	61	61	61
Croplan															
Buckhorn AX	70	76	69	72	85	94	95	92	--	--	--	--	61	61	61
CP7010	86	76	65	76	105	95	91	97	--	--	--	--	61	61	61
CP7017 AX	73	83	78	78	88	103	108	100	--	--	--	--	61	60	61
CP7050 AX	71	81	68	74	86	102	95	94	--	--	--	--	63	62	62
CP7869	75	88	74	79	91	110	102	101	--	82	--	--	61	60	60
CP7909	74	79	69	74	89	99	96	95	--	77	--	--	61	60	60
Dyna-Gro															
Long Branch	68	84	72	75	83	105	100	96	64	71	55	63	58	59	59
KWA															
KS Dallas	78	86	69	78	94	107	96	99	--	--	--	--	61	60	61
(W) KS Silverado	88	82	72	80	106	103	99	103	72	78	64	63	62	61	62
KS Western Star	80	83	71	78	97	104	99	100	--	--	--	--	61	62	61
Larry	86	74	77	79	105	93	106	101	71	66	53	66	60	59	60
Zenda	82	76	69	76	100	95	96	97	69	81	62	59	62	61	61
Limagrain															
LCS Chrome	84	79	69	77	102	99	95	99	74	87	66	59	60	60	60
LCS Mint	79	73	68	73	96	92	94	94	77	67	55	61	61	60	61
LCS Valiant	79	80	79	79	96	100	110	102	--	80	--	--	60	61	61
(W) LCS Yeti	88	89	70	82	107	111	97	105	--	--	--	--	61	60	61
OGI															
Bentley	85	83	77	81	103	103	107	104	71	80	64	66	59	60	60
Doublestop CL Plus	85	75	61	74	103	94	85	94	70	83	65	54	63	61	62
Gallagher	78	73	79	77	95	91	109	98	66	82	63	63	59	60	60
Green Hammer	83	79	64	75	100	99	88	96	--	88	--	--	61	59	60
Showdown	85	86	74	82	103	107	102	104	69	78	61	64	59	60	59
Smith's Gold	79	82	69	77	96	102	95	98	67	81	63	58	61	61	61
PlainsGold															
Canvas	82	84	81	82	99	105	112	105	--	72	--	--	60	62	61
Crescent AX	75	77	79	77	91	96	110	99	--	73	--	--	60	61	61
Langin	75	73	78	76	91	92	109	97	62	72	62	65	59	59	59
Whistler	68	78	72	73	83	97	100	93	69	63	48	63	57	60	58
Polansky															
Paradise	76	75	79	77	92	93	110	98	65	77	63	64	61	61	61
Rock Star	97	84	70	84	118	104	97	106	--	75	--	--	60	59	60
WestBred															
WB4269	99	91	77	89	120	114	106	113	79	85	63	65	61	60	61
WB4303	91	70	70	77	110	87	97	98	76	71	58	60	57	57	57
WB4515	90	73	71	78	109	91	98	99	73	73	61	61	63	61	62
WB4699	106	84	86	92	128	105	119	117	--	83	--	--	61	59	60
WB4792	88	85	67	80	107	106	93	102	--	89	--	--	61	61	61

Table 8 continued. 2020 SOUTH CENTRAL Kansas dryland winter wheat performance test

Brand / Name	MC ¹	HU ²	CW ³	Av.	MC	HU	CW	Av.	-MC-	-HU-	-CW-	MC	CW	Av.	
	yield (bu/a)				% of test average				multiyear av. (bu/a)				test weight (lb/bu)		
WestBred															
WB-Grainfield	88	77	72	79	106	97	100	101	71	71	59	61	61	60	61
Experimentals															
OK12912C-2 OGI	90	85	69	82	109	106	96	104	--	--	--	--	63	60	62
Averages	83	80	72	78	100	100	100	100	--	--	--	--	61	60	60
CV (%)	9	5	7	7	9	5	7	7	--	--	--	--	1	1	1
LSD (0.05)*	10	6	7	8	12	7	10	10	--	--	--	--	1	1	1

¹MC= McPherson, KS, Farmer's Field, McPherson County. Fungicide applied.

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

³CW=Conway Springs, KS, Farmer's Field, Sumner County. Fungicide applied.

⁴ (W) indicates hard white wheat.

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

Table 9. 2020 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	Av.	HA	TR	Av.
											2 yr	3 yr	2 yr	3 yr	2 yr	3 yr	2 yr	3 yr							
	yield (bu/a)					% of test average					multiyear av. (bu/a)						test weight (lb/bu)				height (in.)				
AgriMAXX																									
AM Cartwright	95	60	46	59	65	97	106	102	93	99	83	--	85	--	64	--	85	--	60	60	58	60	32	27	30
AM Eastwood	94	67	45	60	66	96	117	101	94	102	77	64	81	68	79	74	80	65	61	67	60	63	31	26	28
AgriPro																									
AP 18AX	99	48	41	63	63	101	85	91	99	94	87	--	75	--	77	--	89	--	60	48	57	55	32	27	29
SY 517 CL2	79	62	39	52	58	81	108	88	82	90	--	--	--	--	--	--	--	--	63	62	59	61	31	27	29
SY Grit	85	46	37	50	54	86	80	83	79	82	71	60	73	62	69	68	77	64	60	46	55	54	33	27	30
SY Legend CL2	100	55	39	63	64	103	96	87	99	96	81	66	74	63	66	63	86	70	61	55	58	58	32	27	30
SY Monument	101	57	43	59	65	103	99	97	92	98	83	68	81	68	75	71	86	69	60	57	56	58	34	29	31
SY Rugged	96	53	43	62	64	98	93	97	97	96	81	69	75	66	75	73	84	68	61	53	57	57	30	27	28
SY Wolverine	108	52	53	65	70	111	91	119	103	106	84	--	88	--	87	--	88	--	60	52	59	57	31	28	29
AGSECO																									
AG Golden	107	70	46	72	74	110	122	103	113	112	--	--	--	--	--	--	--	--	61	70	55	62	34	27	30
AG Icon	104	57	50	58	68	106	100	113	92	103	86	74	82	72	77	71	79	66	62	57	59	59	37	30	33
TAM 114	80	51	45	55	58	81	89	101	87	90	71	65	79	68	79	73	86	70	62	51	56	56	30	28	29
Dyna-Gro																									
Long Branch	98	51	44	64	64	100	89	99	101	98	84	75	75	70	80	74	90	71	61	51	57	56	34	28	31
KWA																									
(W) Joe	98	67	38	76	70	100	118	84	120	105	80	66	90	74	74	70	92	75	61	67	57	62	37	30	34
KS Dallas	94	58	51	68	68	96	102	113	107	105	86	--	85	--	84	--	90	--	63	58	57	59	31	27	29
(W) KS Silverado	92	52	46	63	63	94	91	104	99	97	81	68	76	63	80	77	85	69	63	52	61	59	32	26	29
KS Western Star	100	62	45	61	67	102	108	102	96	102	87	--	84	--	75	--	89	--	63	62	58	61	34	28	31
Tatanka	106	57	53	64	70	108	99	118	101	107	86	74	81	72	86	81	90	73	62	57	58	59	31	28	30
Limagrain																									
LCS Chrome	89	55	33	67	61	91	95	74	105	91	73	62	81	65	66	64	87	69	61	55	57	57	33	30	31
LCS Link	99	58	47	65	67	101	102	106	103	103	81	--	75	--	82	--	90	--	62	58	58	60	32	28	30
LCS Valiant	98	56	46	65	66	100	97	102	103	101	83	--	84	--	75	--	92	--	61	56	59	59	32	27	29
T158	89	54	48	63	64	91	95	108	99	98	--	70	--	54	--	58	--	49	62	54	58	58	30	26	28
OGI																									
Lonerider	109	59	50	52	68	112	104	112	83	103	85	76	86	74	79	76	83	68	62	59	58	60	33	27	30
PlainsGold																									
Byrd CL Plus	94	50	40	63	62	96	88	89	99	93	--	70	--	49	--	53	--	47	61	50	56	56	36	30	33
Canvas	112	69	50	71	76	114	121	112	113	115	89	--	84	--	76	--	90	--	63	69	58	63	30	28	29
Crescent AX	100	64	46	59	67	102	112	104	93	103	87	--	86	--	82	--	79	--	61	64	59	61	32	29	30
Guardian	103	57	45	70	69	105	100	100	111	104	--	--	--	--	--	--	--	--	62	57	57	59	32	30	31
Langin	98	56	44	68	66	100	98	99	107	101	86	69	83	71	79	75	86	69	60	56	58	58	31	27	29
Whistler	112	59	39	73	71	114	103	87	115	105	92	79	79	73	76	73	93	74	61	59	55	58	35	31	33
WestBred																									
WB4303	97	57	50	58	65	99	100	112	91	100	--	--	--	--	--	--	--	--	60	57	55	57	30	28	29
WB4418	101	59	46	57	66	104	103	104	90	100	80	68	84	70	71	69	82	68	60	59	57	59	30	28	29
WB4462	93	45	39	70	62	95	78	87	110	93	77	64	71	61	66	66	93	73	62	45	59	55	36	30	33
WB4595	99	60	53	68	70	101	106	119	108	108	--	--	--	--	--	--	--	--	64	60	57	60	32	28	30
WB4792	100	61	51	67	70	102	107	113	106	107	84	--	85	--	86	--	88	--	64	61	54	60	34	30	32
WB-Grainfield	101	58	34	64	64	104	102	76	101	96	78	63	83	68	77	74	85	68	61	58	59	59	33	30	31
Experimentals																									
KS15H137-2 KAES	112	55	51	62	70	114	96	114	99	106	--	--	--	--	--	--	--	--	62	55	57	58	34	27	30
CO15D098R PlainsGold	79	57	35	69	60	80	100	79	108	92	--	--	--	--	--	--	--	--	62	57	56	59	35	30	32
Averages	98	57	45	63	66	98	57	45	63	66	--	--	--	--	--	--	--	--	61	57	57	59	33	28	30
CV (%)	8	7	10	7	8	8	7	10	7	8	--	--	--	--	--	--	--	--	1	7	2	3	5	3	4
LSD (0.05)*	11	6	6	7	7	11	10	14	10	11	--	--	--	--	--	--	--	--	1	6	2	3	2	1	2

¹HA=Hays, KS, Research Center, Ellis County. No fungicide applied.

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

³TR=Tribune, KS, Southwest Research-Extension Center, Greeley County. No fungicide applied.

⁴DC=Decatur, KS, farmer's field, Decatur County. No fungicide applied.

⁵(W) indicates hard white wheat.

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

Table 10. 2020 SOUTHWEST Kansas dryland winter wheat performance test

Brand / Name	LA ¹	MV ²	GC ³	Av.	LA	MV	GC	Av.	-LA- 3 yr	-MV- 3 yr	-GC- 2 yr	LA	MV	Av.
	yield (bu/a)				% of test average				multiyear av. (bu/a)			test weight (lb/bu)		
AgriMAXX														
AM Cartwright	90	77	30	65	100	109	92	100	--	--	67	59	62	61
AM Eastwood	77	70	34	60	86	100	103	96	76	59	74	58	62	60
AgriPro														
SY Grit	70	44	28	47	77	62	85	75	74	46	57	58	56	57
SY Monument	88	55	31	58	98	78	95	90	84	56	61	59	61	60
SY Rugged	82	75	35	64	91	107	107	102	82	65	65	59	64	61
SY Wolverine	84	74	34	64	94	105	103	101	--	--	69	59	63	61
AGSECO														
AG Golden	96	73	34	68	107	104	103	104	--	--	--	58	62	60
AG Icon	95	76	31	67	105	108	95	103	88	70	65	62	63	62
TAM 114	94	74	32	67	104	105	98	102	90	65	61	62	64	63
TAM 205	76	70	25	57	84	99	75	86	--	--	--	62	64	63
Dyna-Gro														
Long Branch	92	80	37	70	102	113	113	110	88	67	65	58	62	60
KWA														
(W) Joe	95	88	37	73	106	125	112	114	87	74	69	61	64	62
KS Dallas	101	70	32	68	112	99	98	103	--	--	66	61	63	62
(W) KS Silverado	96	68	34	66	107	97	103	102	90	60	68	61	64	63
KS Western Star	87	67	29	61	97	96	88	93	--	--	67	60	63	61
Tatanka	99	69	36	68	110	98	111	106	94	62	66	61	64	63
Limagrain														
LCS Mint	87	67	30	62	97	96	92	95	81	68	64	61	60	60
T158	86	74	32	64	96	105	99	100	85	62	63	60	64	62
OGI														
Baker's Ann	78	65	28	57	86	92	86	88	--	--	--	60	63	62
Lonerider	84	62	31	59	93	88	95	92	86	59	68	60	63	62
Showdown	82	74	35	64	91	106	106	101	--	--	--	58	62	60
PlainsGold														
Breck	95	67	37	66	106	95	113	105	--	--	70	62	65	64
Canvas	100	77	35	71	111	109	106	109	--	--	68	61	64	63
Guardian	99	79	30	69	110	112	92	104	--	--	--	61	64	63
Langin	85	73	33	64	94	103	102	100	85	67	69	59	62	61
(W) Monarch	91	84	35	70	102	120	107	109	--	--	62	59	61	60
Whistler	99	72	35	69	110	102	108	107	88	67	65	58	60	59
WestBred														
WB4303	84	61	30	58	94	86	91	90	--	--	--	57	59	58
WB4595	99	66	34	67	110	94	105	103	--	--	--	63	64	63
WB4792	101	66	33	67	112	94	102	103	--	--	69	62	61	62
WB-Grainfield	90	68	35	64	100	96	106	101	86	68	67	60	63	61
Experimentals														
KS15H137-2 KAES	93	65	36	65	103	93	108	101	--	--	--	61	63	62
OK168512 OGI	86	64	30	60	95	90	92	92	--	--	--	61	64	62
CO15D098R PlainsGold	98	81	36	72	109	115	109	111	--	--	--	61	63	62
Averages	90	70	33	64	90	70	33	64	--	--	--	60	63	61
CV (%)	8	9	8	8	8	9	8	8	--	--	--	1	2	1
LSD (0.05)*	10	9	4	8	11	13	11	12	--	--	--	1	1	1

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 Research-Extension 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 11. 2020 WESTERN Kansas irrigated winter wheat performance test

Brand / Name	CO ¹	GC ²	LN ³	Av.	CO	GC	LN	Av.	-CO-		-GC-		-LN-	
									2 yr	3 yr	2 yr	3 yr	2019	
	yield (bu/a)				% of test average				multiyear av. (bu/a)					
AgriMAXX														
AM Cartwright	81	74	--	78	102	99	--	101	96	--	102	--	94	
AM Eastwood	73	78	--	76	93	104	--	98	98	98	93	86	91	
AgriPro														
SY Grit	74	68	--	71	94	90	--	92	93	95	87	81	84	
SY Sunrise	79	77	--	78	100	103	--	102	97	100	89	85	92	
SY Wolverine	93	80	--	86	117	107	--	112	117	--	104	--	100	
AGSECO														
AG Golden	90	81	--	85	114	108	--	111	--	--	--	--	--	
AG Icon	75	73	--	74	95	97	--	96	107	103	100	93	92	
TAM 114	74	79	--	77	94	105	--	100	106	105	93	91	95	
Croplan														
CP7010	82	72	--	77	104	97	--	100	--	--	--	--	--	
CP7017 AX	85	77	--	81	108	102	--	105	--	--	--	--	--	
CP7050 AX	86	71	--	79	109	95	--	102	--	--	--	--	--	
CP7869	78	74	--	76	99	98	--	99	99	--	101	--	90	
CP7909	88	79	--	83	112	105	--	108	100	--	97	--	86	
Dyna-Gro														
Long Branch	76	70	--	73	96	94	--	95	97	99	96	94	88	
KWA														
(W) Joe	75	81	--	78	95	108	--	101	103	100	101	91	91	
KS Dallas	87	81	--	84	110	107	--	109	--	--	--	--	--	
(W) KS Silverado	99	64	--	81	125	86	--	105	116	110	91	81	84	
KS Western Star	84	70	--	77	107	94	--	100	--	--	--	--	--	
OGI														
Baker's Ann	57	73	--	65	72	97	--	84	--	--	--	--	--	
Lonerider	81	78	--	80	102	105	--	104	110	111	100	94	90	
Showdown	56	79	--	68	71	106	--	88	90	--	104	--	96	
PlainsGold														
Breck	80	75	--	77	101	100	--	100	103	--	100	--	96	
Canvas	85	77	--	81	108	103	--	105	99	--	99	--	100	
Crescent AX	83	70	--	76	105	93	--	99	--	--	--	--	--	
Guardian	68	66	--	67	86	88	--	87	--	--	--	--	--	
Langin	87	73	--	80	111	97	--	104	--	96	--	69	--	
(W) Monarch	87	84	--	86	110	112	--	111	98	--	103	--	102	
Whistler	54	75	--	65	69	100	--	84	--	69	--	80	--	
WestBred														
WB4269	83	81	--	82	105	109	--	107	97	--	98	--	86	
WB4303	71	79	--	75	90	105	--	98	99	103	92	86	101	
WB4418	72	75	--	73	91	100	--	95	102	102	93	84	89	
WB4595	82	78	--	80	103	104	--	104	--	--	--	--	--	
WB4699	88	78	--	83	112	104	--	108	--	--	--	--	--	
WB4792	82	74	--	78	104	98	--	101	110	--	103	--	100	
WB-Grainfield	70	60	--	65	89	80	--	84	101	101	87	81	87	
Averages	79	75	--	77	79	75	--	77	--	--	--	--	--	
CV (%)	9	9	--	9	9	9	--	9	--	--	--	--	--	
LSD (0.05)*	10	9	--	9	12	10	--	11	--	--	--	--	--	

¹CO=Colby, KS, Northwest Research-Extension Center, Thomas County. No fungicide applied. Test weight values not available.

²GC=Garden City, KS, Southwest Research-Extension Center, Finney County. Fungicide applied. Test weight values not available.

³LN=Healy, KS, Farmer's field, Lane County. Abandoned.

⁴(W) indicates hard white wheat.

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

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

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Contributors

Main Station, Manhattan

Jane Lingenfelter, Assistant Agronomist (Senior Author)
Erick De Wolf, Plant Pathology
Allan Fritz, Wheat Breeder
Mary Knapp, K-State Climatologist
Romulo Lollato, Extension Agronomist
Kelsey Andersen Onofre, Extension Plant Pathology
Jeff Whitworth, Extension Entomologist

Experiment Fields

Eric Adee, Ottawa
Scott Dooley, Scandia
Andrew Esser, Scandia
James Kimball, Ottawa
Michael Larson, Scandia
Doug Stensaas, Scandia
Keith Thompson, Hutchinson
Dylan Walta, Ottawa

Research Centers

Lucas Haag, Colby
Lonnie Mengarelli, Parsons
Gretchen Sassenrath, Parsons
Alan Schlegel, Tribune
Guorong Zhang, Hays

Cooperators

Justin Knopf, Gypsum
Calvin Bohnert, Mankato

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