

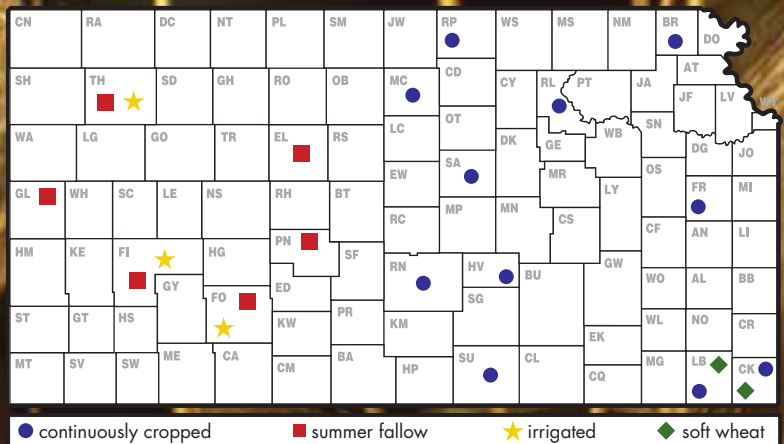
2008

Kansas Performance Tests with **Winter Wheat Varieties**

Report of Progress 999



Kansas State University
Agricultural Experiment Station
and Cooperative Extension Service



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*Excerpts from the 2008 National Winter Canola Variety Trial, Report of Progress 1009, Kansas State University Agricultural Experiment Station and Cooperative Extension Service (to be published in late winter 2009).

2008 WHEAT CROP REVIEW

Crop Development

The wheat crop progressed very slowly in 2008. Planting and emergence were delayed by dry conditions and cool temperatures that persisted throughout most of the growing season. Jointing and heading of the 2008 wheat crop were significantly behind the pace of recent years, undoubtedly leading to a few anxious weeks for many Kansas producers. Warmer temperatures at the end of May helped move along wheat development, but frequent rains delayed ripening and harvest in many parts of the state. As of July 7, only 79% of the wheat crop had been harvested.

Quality of the 2008 wheat reflected the slow progression of the crop and did not fluctuate much throughout the growing season. The percentage of wheat rated as poor to very poor ranged from 20-24% for most of the season; the percentage rated at fair ranged from 32-37%, and the remaining 40-50% was rated as good or excellent. (*Crop-Weather* reports, Kansas Agricultural Statistics, Topeka)

Weather

Weather conditions in 2008 were characterized by uneven conditions in temperature, precipitation, and distribution across the state.

The western third of the state saw drier-than-average conditions in the fall, which limited stand establishment. This dry pattern continued throughout the growing season. Unfortunately, rainy weather began in mid-June as harvest was beginning. The remainder of the state, though drier than normal throughout May, also saw wetter conditions in June, with excessive moisture posing a particular problem in the east central and southeastern divisions.

For the eastern two-thirds of the state, problems encountered included ice in December, cooler-than-normal conditions throughout the season, and wetter-than-normal conditions during the harvest period. Cooler conditions did mean that freezing temperatures in April did not produce nearly as much damage as occurred in 2007. Hail was a significant factor this year. Hail reports for May through June 2007 totaled 588; for the same period in 2008, hail reports totaled 897. (Mary Knapp, K-State Weather Data Library)

Diseases

Several diseases caused significant problems in the Kansas wheat crop in 2008. Disease pressure was greatest in eastern and central regions of the state, where leaf rust and powdery mildew were the primary leaf diseases of concern. Speckled leaf blotch and tan spot became a problem in some areas late in the growing season.

Head scab was also at above-normal levels in 2008. The eastern third of the state was affected the most by this disease, but the scab could be found at low levels as far west

as Hays. This is the second year in a row that Kansas has had above-normal levels of head scab.

Stripe rust was found at most variety performance tests, but the disease was limited to only the most susceptible varieties. Western Kansas was very dry during the early growing season, and wheat in that area escaped serious yield losses from leaf diseases this year.

Wheat streak mosaic was the most prevalent viral disease this year. Wheat streak mosaic was most severe in western Kansas; some counties reported significant disease losses in localized areas. (Erick DeWolf, K-State Extension Plant Pathologist)

Insects

Insect problems across the state seemed to be very spotty during the 2007-2008 wheat growing season. Some early fall problems due to armyworm feeding were reported and required insecticide application and replanting. Late spring problems due to armyworms and wheathead armyworms developed in a few areas.

Wheat stem maggot populations are normally present in most Kansas wheat fields at less than 1% infestation levels, but several areas, especially in the north central area, had populations up to 20%.

Hessian flies continue to be a concern with stable populations in south central Kansas and some fields sampled in the north central area having infestation levels approaching 35% just prior to harvest. (Jeff Whitworth, K-State Extension Entomologist)

Harvest Statistics

The Kansas Agricultural Statistics' June 10 estimate of the 2008 crop was 357.2 million bushels from 9.4 million acres, with a 38 bushel/acre yield average, 5 bushels above last year's yield. (June 10, 2008, *CROPS* report, Kansas Agricultural Statistics, Topeka)

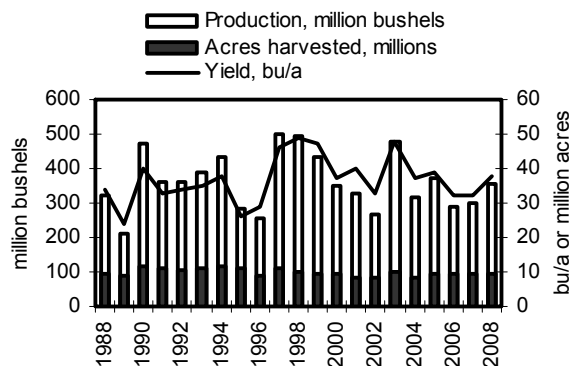


Figure 1. Historical Kansas wheat production

Acreage Distribution

Jagalene 28 (38) TAM 111 15 (9) Jagger 13 (17) T81 7 Danby 4	Jagalene 17 (22) Overley 11 (14) Jagger 9 (16) Santa Fe 8 Karl/K92 4 (5)	Karl/K92 17 (14) 2137 14 (9) 2145 12 (13) Santa Fe 11 Overley 9 (19)
Jagalene 23 (36) TAM 111 21 (11) T81 10 (7) Jagger 7 (10) TAM 112 6	Overley 20 (31) Jagalene 19 (24) Jagger 16 (16) Santa Fe 10 (3) 2137 4 (5)	Jagalene 28 (18) Overley 22 (20) Jagger 11 (21) 2137 7 (14) Santa Fe 5
Jagalene 24 (30) TAM 111 19 (17) Jagger 13 (16) TAM 110 7 (6) T81 6 (10)	Overley 34 (38) Jagger 20 (20) Jagalene 12 (16) Santa Fe 9 2137 3	Overley 30 (29) Jagalene 14 Jagger 13 (18) 2174 6 2137 6 (9)

Figure 2. Leading wheat varieties in Kansas
Percentage of seeded acreage for 2008 and (2007) crops

Jagalene and Overley traded the number one spot of leading wheat variety seeded in Kansas again in 2008. Jagger and TAM 111 maintained their third and fourth spots with 14.7% and 7.3% of statewide acreages, respectively. Santa Fe moved into fifth place with 5.8% of the acreage. Hard white varieties occupied 1.9% of the 2008 wheat acreage with Danby accounting for 59% of white wheat seeded. The acreage of blends was unchanged at 10%. (February 5, 2008, *Wheat Variety*, Kansas Agricultural Statistics, Topeka)

2008 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.**

Varieties

Public varieties are selected for inclusion in the tests on the basis of several criteria. Most represent new or established varieties 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 on a voluntary basis. Entrants choose both the entries and test sites and pay a fee to help defray test expenses. The 2008 private entrants are listed in Table 1. Twelve entrants provided a total of 40 varieties for testing.

Table 12 describes the characteristics of seed submitted for testing. Seed quality—including factors such as size, purity, and germination—can be important in determining the performance of a variety. Wheat seed used for entries in Kansas Crop Performance Tests is prepared professionally and usually meets or exceeds Kansas Crop Improvement Certification standards. Performance of a given variety comparable to that obtained in these tests is best assured under similar environmental and cultural conditions and with the use of certified or professionally prepared seed.

Environmental Factors

Although conditions were generally dry during the fall, many performance test locations received heavy rains followed by dry weather in the few days following planting that led to crusting and sometimes significant losses in stands. The test location at Hesston, Kansas, had to be replanted for this reason.

Leaf rust was reported at all testing locations but did not cause the degree of defoliation that it has in the past and did not appear to influence yields. Head scab due to the frequent rains was reported at many test locations.

Results and Variety Characterization

Results from Kansas tests are presented in Tables 4 through 11. Yields are reported as bushels per acre (60 lb/bushel) 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 highest yielding entries. Multiyear 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. For example, a relatively tall variety may yield well in the tests but may not be appropriate for some situations. Conversely, some producers may want a tall variety for straw production. Planting varieties with a range of maturities helps minimize weather risks.

At the bottom of each table is the (0.05) LSD (least significant difference) 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 to be 95% confident that the difference is real. 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.

Performance Summaries

Figures 3 through 6 summarize the performance of each variety standardized to the average of two widely grown check varieties, Jagger and 2137. The number at the base of each bar indicates the number of direct comparisons with the check varieties. Values that differ significantly from the average of the two check varieties are indicated by a + or – at the end of the bar.

Electronic Access

To access crop performance testing information electronically, visit the Web site at: <http://kscroptests.agron.ksu.edu>

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 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 999 '2008 Kansas Performance Tests with Winter Wheat Varieties,' or the Kansas Crop Performance Test Web site, <http://kscroptests.agron.ksu.edu>, for details. Endorsement or recommendation by Kansas State University is not implied."

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Table 1. Private entrants in the 2008 Kansas wheat performance tests

AgriPro	AMIGO Genetics	MFA	Seed-link
AgriPro Wheat, Inc. 11783 Ascher Rd. Junction City, KS 66441 785-210-0218	Rinck Seed Farm, Inc. PO Box 141, 720 Road 29 Niotaze, KS 67355 620-673-5343	MFA Incorporated 201 Ray Young Dr. Columbia, MO 65201 573-876-5363	Seed-link, Inc. 208 St. David St. Lindsay, ON Canada K9V 5Z4 705-324-0544
AgriPro Coker	Drussel	Pioneer Brand	Watley
778 CR 680 Bay, AR 72411 870-483-7691	Drussel Seed and Supply 2197 W. Parallel Road Garden City, KS 67846 620-275-2359	Pioneer Hi-Bred Intl., Inc. 8100 South 15th Lincoln, NE 68512 800-258-5604	Watley Seed PO Box 51 Spearman, TX 79081 806-659-3838
AGSECO	Horinek Brothers	Polansky	WestBred
AGSECO, Inc. PO Box 7 Girard, KS 66743-0007 620-724-6223	HC 2 Box 36 Trenton, NE 69044 785-626-3608	Polansky Seed 2729 M St. Belleville, KS 66935 785-527-2271	WestBred LLC 14604 S. Haven Rd. Haven, KS 67543 620-465-2675

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.

CONTRIBUTORS

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Mary Knapp, KSU Weather Data Librarian
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Experiment Fields

Mark Claassen, Hesston
W. Barney Gordon, Scandia
William Heer, Hutchinson
James Kimball, Ottawa
Larry Maddux, Ottawa

Research Centers

Patrick Evans, Colby
James Long, Parsons
T. Joe Martin, Hays
Alan Schlegel, Tribune
Phillip Sloderbeck, Garden City
Monty Spangler, Garden City

Others

Richard Chen, Laura McLaughlin, USDA
Rebecca Miller, Grain Science and Industry
Jim Shroyer, Agronomy

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

Variety ¹	% of Kansas seeded acreage 2008 ¹	Relative ²											Relative milling and baking quality ⁴	Resistance or tolerance to: ⁵													
		Test weight	Straw strength	Maturity	Coleoptile			Winter hardiness	Acid tolerance	Sprout tolerance	Protein content ³	Soil-borne		Spindle streak	Wheat streak	Barley yellow dwarf	Leaf rust	Stem rust	Speckled			Powdery mildew	Head scab	Hessian fly	Russ. wheat aphid		
					Height ³	length	Shattering												leaf blotch	Glume blotch	Tan spot						
Jagalene	18.0	3	3	2	4	6	4	5	MT	2	4	EX	2	3	5	7	9	2	4	4	--	8	9	8	9	9	
Overley	17.3	3	3	1	6	5	7	6	MT	2	3	EX	1	4	5	5	7	3	2	5	--	5	7	9	9	9	
Jagger	14.7	4	4	1	5	6	5	6	T	3	3	EX*	2	4	5	7	9	5	3	3	6	4	7	7	9	9	
TAM 111	7.3	3	2	4	6	2	2	7	MS	2	7	AC	8	8	7	7	9	1	4	5	--	5	6	8	7	9	
Santa Fe	5.8	3	3	2	6	2	3	3	MT	--	5	AC	1	--	7	8	3	4	4	2	--	6	6	7	9	9	
T81	2.8	4	2	2	4	7	3	3	I	2	6	AC	8	4	8	6	8	3	3	7	7	6	3	5	8	9	
2137	2.8	4	1	3	5	7	5	3	T	2	7	AC	1	5	6	5	8	7	8	5	7	5	4	8	8	9	
TAM 112	1.6	2	4	2	5	2	2	5	T	--	3	AC	8	--	5	--	8	--	8	5	--	7	1	9	9	9	
TAM 110	1.4	3	2	1	5	5	2	5	S	3	7	LD	9	9	5	8	9	4	8	6	6	7	1	8	9	8	
Danby*	1.2	3	4	3	6	5	2	2	MS	4	5	AC	7	--	5	--	8	2	2	6	--	8	7	7	9	9	
Cutter	0.9	4	4	3	5	5	5	3	T	3	4	AC	3	4	6	7	8	2	3	5	--	6	7	8	9	9	
Postrock	0.9	2	2	3	5	--	3	3	MT	3	6	AC	2	5	7	7	4	7	4	8	--	6	8	7	9	9	
2174	0.9	3	1	3	4	5	3	4	I	1	3	AC	1	5	8	5	7	8	7	5	7	5	2	6	9	9	
Thunderbolt	0.9	2	--	3	7	6	6	--	MS	2	3	AC	8	8	6	7	7	8	5	6	--	7	7	7	9	9	
Karl/Karl 92	0.8	3	4	1	3	7	3	3	S	3	3	EX*	1	3	9	8	8	6	5	5	3	3	4	6	9	9	
2145	0.6	4	2	3	3	6	6	3	I	3	3	AC	1	--	9	6	8	3	5	5	--	8	8	8	5	9	
Ike	0.5	3	4	4	6	7	2	3	S	2	3	AC	1	5	9	6	9	3	6	7	6	8	6	6	3	9	
Protection	0.4	4	3	2	7	--	--	6	I	--	5	--	4	--	7	--	9	4	2	6	--	7	7	8	9	9	
Stanton	0.3	4	3	3	5	6	2	2	--	2	4	AC	8	5	6	8	2	2	7	7	--	9	9	7	8	9	
Wesley	0.3	4	1	5	4	7	2	1	T	5	4	AC	1	4	8	7	6	3	2	5	--	6	7	7	9	9	
T136	0.3	4	3	1	3	7	2	6	I	3	--	--	1	--	--	--	8	3	3	--	--	7	--	--	--	--	
Hatcher	0.3	5	6	3	5	2	3	2	MS	--	4	--	7	--	8	8	9	4	4	5	--	5	--	2	2	9	
Fuller	0.3	5	4	2	5	5	2	3	I	3	3	AC	1	1	5	6	3	7	2	6	--	6	7	9	9	9	
Keota	0.2	3	2	2	7	2	3	3	MT	--	6	--	1	--	7	8	9	7	4	7	--	7	--	9	9	9	
NuHills+	0.2	3	3	2	4	7	3	--	--	--	3	AC	2	2	6	6	9	--	3	7	--	7	8	--	9	9	
Larned	0.2	4	5	4	9	3	3	3	S	3	4	AC	9	8	9	9	8	2	2	8	8	9	5	5	3	9	
Dominator	0.4	4	3	4	2	8	7	3	I	5	3	AC	1	4	7	6	9	4	6	5	4	5	4	7	5	9	
Shocker	0.2	3	2	1	5	5	5	6	MT	--	4	--	1	--	8	8	4	4	2	4	--	5	5	8	9	9	
Millenium	0.2	5	6	9	9	7	3	1	--	6	3	--	9	--	8	7	2	3	3	7	--	7	--	--	2	9	
Trego+	0.2	3	4	3	4	6	2	2	S	5	7	AC	2	4	7	7	8	3	8	7	5	8	8	9	8	9	
2163	0.2	6	1	3	3	7	6	4	MT	--	7	LD	1	4	4	5	7	4	7	5	8	4	2	8	9	9	
Blends	10.4																										
Other White	0.3																										
Other Red	6.5																										
Other Soft	0.1																										

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

¹ Varieties and percentage seeded acreage from the Feb. 5, 2008, 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 Joe Martin - Hays, and Allan Fritz, Jim Shroyer, 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, using inputs from the U.S. Grain Marketing and Production Research Center, and industry.

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 Allan Fritz - Manhattan, Joe Martin - Hays; Erick DeWolf - K-State Plant Pathology; Phil Sloderbeck - Entomology.

Final ratings and descriptions of disease and insect pests are available in "Wheat Variety Disease and Insect Ratings 2008," 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 2008

Region	Soil type	N	P	O	K	Plant-harvest	Conditions
Location	previous crop		₂	₅	₂	seed rate	
<u>Northeast Dryland</u>							
Northeast, KS Bunck Seed Farms	Grundy silty clay loam	--	--	--	Fall	10/29/2007-7/16/2008	Cool, wet spring delayed heading and harvest.
Everest (EV)	Wheat, 2007	--	--	--	Spring	90 lb/a	
Ashland Agronomy Farm	Reading silt loam	--	--	--	Fall	Abandoned	Two hail storms in a week in early June destroyed test.
Manhattan (MA)		--	--	--	Spring	75 lb/a	
<u>Southeast Dryland</u>							
East Central Kansas Exp. Field	Woodson silt loam	90	30	15	Fall	11/1/2007-7/1/2008	Planting was delayed by wet weather. Head scab was prevalent.
Ottawa (OT)		--	--	--	Spring	1200000 seeds/a	
Southeast Agricultural Research Center	Parsons silt loam	90	50	50	Fall	11/5/2007-6/19/2008	Growing season was very wet with nearly a year's worth of rain by July 1.
Columbus (CL)	Canola, 2007	--	--	--	Spring	75 lb/a	
Southeast Agricultural Research Center	Parsons silt loam	80	60	75	Fall	11/1/2007-6/26/2008	Establishment was delayed by wet weather. The remainder of the growing season was very wet.
Parsons (PA)	Soybean, 2007	--	--	--	Spring	75 lb/a	
<u>Soft Wheat</u>							
Southeast Agricultural Research Center	Parsons silt loam	90	50	50	Fall	11/5/2007-6/19/2008	Growing season was very wet with nearly a year's worth of rain by July 1.
Columbus (CL)	Canola, 2007	--	--	--	Spring	75 lb/a	
Southeast Agricultural Research Center	Parsons silt loam	80	60	75	Fall	11/1/2007-6/26/2008	Establishment was delayed by wet weather. The remainder of the growing season was very wet.
Parsons (PA)	Soybean, 2007	--	--	--	Spring	75 lb/a	
<u>North Central Dryland</u>							
North Central Kansas Exp. Field	Crete silt loam	110	30	5	Fall	10/6/2007-7/7/2008	Slow establishment due to heavy rain just after planting
Belleville (BE)	Fallow, 2007	--	--	--	Spring	90 lb/a	
North Central, KS Farmer's Field	Harney silt loam	100	30	--	Fall	10/3/2007-6/26/2008	Excellent stands; very cold winter with cool and wet spring. No major disease problems.
Beloit (BL)	Wheat, 2007	--	--	--	Spring	80 lb/a	
<u>South Central Dryland</u>							
Harvey County Exp. Field	Ladysmith silty clay loam	90	32	--	Fall	11/1/2007-6/26/2008	Test was replanted after heavy rains caused crusting and poor emergence.
Hesston (HE)	Fallow, 2007	--	--	--	Spring	90 lb/a	
South Central Kansas Exp. Field	Ost silt loam	125	40	--	Fall	10/22/2007-7/4/2008	Hail storm on May 3 damaged the primary heads and caused some yield loss.
Hutchinson (HU)	Canola, 2007	--	--	--	Spring	60 lb/a	
South Central, KS Farmer's Field	Sandy loam	--	--	--	Fall	10/25/2007-6/25/2008	Heavy rains after planting caused crusting and poor stands.
Conway Springs (CS)	Wheat, 2007	--	--	--	Spring	60 lb/a	
<u>Northwest Fallow</u>							
Agricultural Research Center	Harney clay loam	60	--	--	Fall	10/1/2007-6/25/2008	Dry conditions at planting improved with a wet winter and spring.
Hays (HA)	Fallow, 2007	--	--	--	Spring	50 lb/a	
Northwest Research-Extension Center	Keith silt loam	50	30	--	Fall	9/24/2007-7/2/2008	Hard rain days after planting caused crusting. Beneficial rains came right at heading.
Colby (CO)	Fallow, 2007	--	--	--	Spring	60 lb/a	
Southwest Research-Extension Center	Richfield silt loam	6	20	--	Fall	9/21/2007-6/28/2008	Dry conditions throughout the growing season; no disease or insect problems observed.
Tribune (TR)	Fallow, 2007	60	--	--	Spring	55 lb/a	
<u>Southwest Dryland/Fallow</u>							
Southwest, KS Farmer's Field	Harney clay loam	--	--	--	Fall	Abandoned	Dry conditions at planting led to poor emergence and uneven stands.
Larned (LA)	Fallow, 2007	--	--	--	Spring	50 lb/a	
Southwest, KS Farmer's Field	Harney clay loam	10	25	--	Fall	9/28/2007-6/23/2008	Good moisture in the fall; winter and spring were fairly dry.
Dodge City (DC)	Sorghum, 2007	--	--	--	Spring	45 lb/a	
Southwest Research-Extension Center	Keith silt loam	--	--	--	Fall	Abandoned	Hail storm on June 20 destroyed the test.
Garden City (GC)	Fallow, 2007	--	--	--	Spring	65 lb/a	
<u>Irrigated</u>							
Northwest Research-Extension Center	Keith silt loam	100	30	--	Fall	9/24/2007-7/9/2008	Hard rain days after planting caused crusting. Beneficial rains came right at heading.
Colby (CO)	Fallow, 2007	--	--	--	Spring	90 lb/a	
Southwest, KS Farmer's Field		--	--	--	Fall	Abandoned	Uneven emergence led to extreme yield variations.
Dodge City (DC)	Fallow, 2007	--	--	--	Spring	80 lb/a	
Southwest Research-Extension Center	Keith silt loam	--	--	--	Fall	Abandoned	Hail storm on June 20 destroyed the test.
Garden City (GC)	Soybean, 2007	--	--	--	Spring	75 lb/a	

Table 4. 2008 NORTHEAST Kansas winter wheat performance tests

Brand / Name	EV ¹ MA ² Av.			EV MA Av.			-EV- 2yr 3yr		-MA- 2yr 3yr		EV MA Av.			EV MA Av.			EV MA Av.		
	yield (bu/a)			% of test average			multi-year avg (bu/a)				tw (lb/bu)			head (+/- Jagger)			height (in.)		
AgriPro																			
Art	57	--	57	129	--	129	45	--	--	--	53	--	53	--	--	--	--	--	--
Hawken	46	--	46	104	--	104	40	--	--	--	52	--	52	--	--	--	--	--	--
Jagalene	42	--	42	96	--	96	33	48	--	58	53	--	53	--	--	--	--	--	--
Postrock	53	--	53	119	--	119	41	53	--	52	54	--	54	--	--	--	--	--	--
AMIGO																			
Sturdy-2K	35	--	35	78	--	78	34	--	--	--	48	--	48	--	--	--	--	--	--
Blend																			
FullrPostR/SF	40	--	40	91	--	91	--	--	--	--	55	--	55	--	--	--	--	--	--
Jagger/2137	45	--	45	101	--	101	--	--	--	--	52	--	52	--	--	--	--	--	--
Overly/PostR/SF	48	--	48	109	--	109	--	--	--	--	54	--	54	--	--	--	--	--	--
Kansas																			
(W) Danby	28	--	28	63	--	63	29	41	--	44	42	--	42	--	--	--	--	--	--
2137	41	--	41	93	--	93	43	55	--	52	50	--	50	--	--	--	--	--	--
2145	38	--	38	86	--	86	32	44	--	61	50	--	50	--	--	--	--	--	--
Fuller	48	--	48	109	--	109	38	53	--	56	53	--	53	--	--	--	--	--	--
Jagger	45	--	45	101	--	101	36	50	--	49	52	--	52	--	--	--	--	--	--
Overley	43	--	43	96	--	96	35	47	--	59	52	--	52	--	--	--	--	--	--
Nebraska																			
Hallam	36	--	36	81	--	81	40	47	--	46	51	--	51	--	--	--	--	--	--
Overland	45	--	45	101	--	101	46	--	--	--	55	--	55	--	--	--	--	--	--
Wesley	40	--	40	90	--	90	39	53	--	57	50	--	50	--	--	--	--	--	--
Oklahoma																			
2174	43	--	43	97	--	97	39	49	--	52	54	--	54	--	--	--	--	--	--
Centerfield	40	--	40	91	--	91	--	--	--	--	52	--	52	--	--	--	--	--	--
Deliver	41	--	41	93	--	93	35	48	--	49	53	--	53	--	--	--	--	--	--
Duster	30	--	30	67	--	67	31	--	--	--	49	--	49	--	--	--	--	--	--
OK Bullet	50	--	50	112	--	112	38	52	--	63	53	--	53	--	--	--	--	--	--
OK00611W	48	--	48	108	--	108	--	--	--	--	50	--	50	--	--	--	--	--	--
Polansky																			
Dominator	49	--	49	111	--	111	38	54	--	51	54	--	54	--	--	--	--	--	--
WestBred																			
Armour	54	--	54	121	--	121	--	--	--	--	53	--	53	--	--	--	--	--	--
HV9W02-942R	54	--	54	121	--	121	--	--	--	--	53	--	53	--	--	--	--	--	--
Santa Fe	53	--	53	119	--	119	48	58	--	60	53	--	53	--	--	--	--	--	--
Shocker	46	--	46	103	--	103	--	--	--	--	51	--	51	--	--	--	--	--	--
Smoky Hill	34	--	34	76	--	76	33	50	--	56	48	--	48	--	--	--	--	--	--
Spartan	52	--	52	118	--	118	39	--	--	--	49	--	49	--	--	--	--	--	--
Tarkio	52	--	52	116	--	116	45	56	--	51	48	--	48	--	--	--	--	--	--
Winterhawk	49	--	49	111	--	111	42	--	--	--	54	--	54	--	--	--	--	--	--
Averages	44	--	44	44	--	44	--	--	--	--	52	--	52	--	--	--	--	--	--
CV (%)	11	--	11	11	--	11	--	--	--	--	4	--	4	--	--	--	--	--	--
LSD (0.05)*	7	--	7	15	--	15	--	--	--	--	3	--	3	--	--	--	--	--	--

¹ EV = Everest, KS, Bunck Seed Farm, Brown County.

² MA = Manhattan, KS, Ashland Bottoms Research Farm, Riley County. Abandoned, hail storms on 6/2 and 6/5.

(W) = Hard white wheat.

* Least Significant Difference, similar to 'Margin of Error', indicates difference needed to overcome test error.

Table 5. 2008 SOUTHEAST Kansas winter wheat performance tests

Brand / Name	¹ OT ² CL ³ PA Av.				OT CL PA Av.				-OT- 2yr 3yr				-CL- 2yr 3yr				-PA- 2yr 3yr				OT CL PA Av.				OT CL PA Av.				OT CL PA Av.			
	yield (bu/a)				% of test average				multi-year avg (bu/a)				tw (lb/bu)				head (+/- Jagger)				height (in.)											
AgriPro																																
Art	30	64	47	47	119	101	94	105	--	--	--	--	--	--	55	56	56	56	--	2	1	1	31	36	31	32						
Jagalene	15	55	48	39	59	87	96	81	18	33	33	33	46	49	51	57	56	55	--	2	2	2	31	36	32	33						
Neosho	13	64	46	41	53	101	93	82	14	26	34	33	42	50	50	56	56	54	--	4	3	3	32	38	32	34						
AGSECO																																
Onaga	24	62	47	44	96	98	95	96	23	35	38	36	40	44	51	56	57	55	--	2	2	2	27	34	30	31						
AMIGO																																
Sturdy-2K	17	59	47	41	68	93	94	85	19	34	34	37	43	47	53	56	56	55	--	4	3	4	35	38	35	36						
Blend																																
FullrPostR/SF	17	69	51	45	67	108	102	92	--	--	--	--	--	--	53	56	57	55	--	1	2	1	32	35	32	33						
Jagger/2137	31	65	48	48	123	102	97	108	--	--	--	--	--	--	54	56	56	56	--	1	1	1	33	37	32	34						
Overly/PostR/SF	16	65	48	43	64	102	96	88	--	--	--	--	--	--	53	56	57	55	--	-1	-1	-1	32	36	33	34						
Kansas																																
(W) Danby	15	57	45	39	61	90	90	81	21	30	37	37	44	48	52	56	57	55	--	3	2	2	33	37	34	35						
2137	33	66	55	51	131	105	111	115	31	42	46	43	46	47	55	56	57	56	--	3	2	2	32	36	33	34						
Fuller	29	67	49	48	114	106	98	106	23	34	41	39	46	--	53	56	57	55	--	1	1	1	32	35	32	33						
Jagger	26	64	44	45	102	101	89	97	20	32	41	38	43	45	54	56	56	55	--	0	0	0	31	36	32	33						
Overley	28	65	40	44	110	102	80	97	22	33	41	42	43	45	55	56	56	56	--	-1	-2	-1	34	37	33	34						
Oklahoma																																
2174	25	63	52	46	98	99	104	100	27	36	41	37	43	44	55	56	56	56	--	2	2	2	33	36	33	34						
Centerfield	19	58	45	41	75	92	90	86	--	--	--	--	--	--	54	56	57	56	--	4	2	3	31	37	32	33						
Deliver	28	64	50	47	112	101	101	105	27	34	39	38	43	42	54	56	57	56	--	3	2	2	31	36	33	33						
Duster	21	58	55	45	83	91	111	95	22	--	37	--	--	--	55	56	56	56	--	4	3	4	31	37	34	34						
OK Bullet	18	61	48	42	70	96	95	87	20	33	37	35	44	--	53	56	56	55	--	2	2	2	33	37	35	35						
OK00611W	22	63	47	44	88	100	94	94	--	--	--	--	--	--	53	56	57	55	--	1	1	1	33	38	34	35						
Scott Seed																																
TAM 304	28	64	60	51	112	102	120	111	--	--	--	--	--	--	53	56	57	55	--	1	1	1	30	34	29	31						
WestBred																																
Armour	33	66	51	50	130	104	102	112	--	--	--	--	--	--	52	56	56	55	--	1	1	1	29	34	31	31						
HV9W02-942R	45	69	64	59	181	108	129	139	--	--	--	--	--	--	58	56	57	57	--	5	2	4	31	34	31	32						
Santa Fe	22	66	54	47	87	104	108	100	26	37	43	41	45	50	54	56	57	56	--	1	1	1	30	35	32	32						
Shocker	18	70	49	46	72	110	99	93	16	30	43	41	44	--	54	57	57	56	--	0	1	1	30	36	32	33						
Spartan	24	66	47	45	95	103	94	97	22	--	38	--	--	--	52	56	57	55	--	1	1	1	29	33	30	30						
Winterhawk	42	69	56	56	169	108	112	130	35	--	40	--	--	--	56	56	56	56	--	2	2	2	34	37	35	35						
Averages	25	63	50	46	25	63	50	46	--	--	--	--	--	--	54	56	56	55	--	2	1	2	32	36	33	34						
CV (%)	12	4	8	8	12	4	8	8	--	--	--	--	--	--	4	1	1	2	--	--	--	--	5	4	4	4						
LSD (0.05)*	4	4	6	5	16	6	11	11	--	--	--	--	--	--	3	0	1	1	--	--	--	--	2	2	2	2						

¹ OT = Ottawa, KS, East Central Experiment Field, Franklin County. (W) = Hard white wheat.

² CL = Columbus, KS, Cherokee County.

³ PA = Parsons, KS, Southeast Agricultural Research Center, Labette County.

* Least Significant Difference, similar to 'Margin of Error', indicates difference needed to overcome test error.

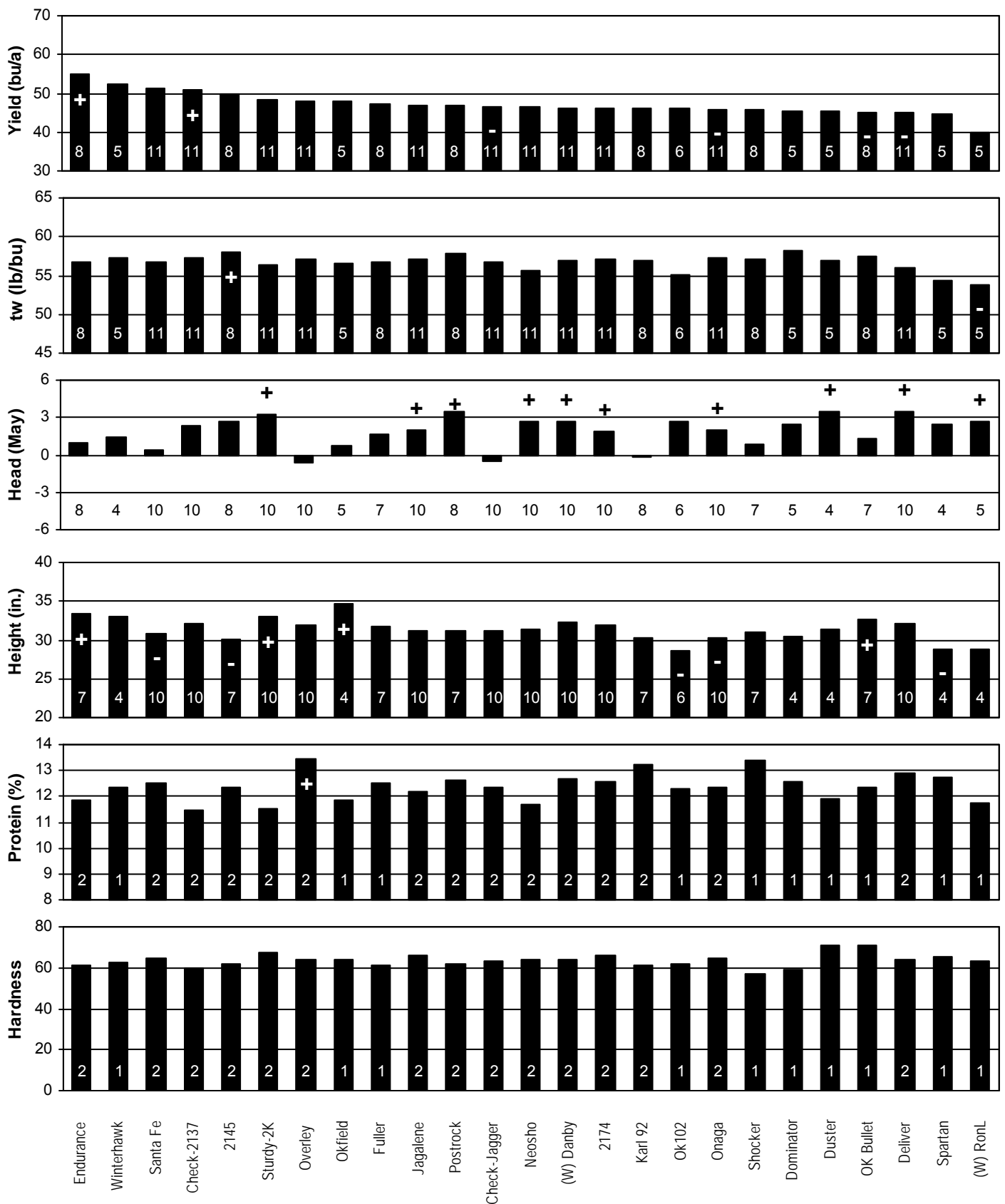


Figure 3. Performance summary of wheat varieties in SOUTHEAST Kansas, 2005-2008

Values inside bars indicate the number of comparisons with checks. Symbols (+,-) indicate if statistically greater or less than mean of checks.

Table 6. 2008 SOUTHEAST Kansas SOFT winter wheat performance tests

Brand / Name	CL ¹ PA ² Av.			CL PA Av.			-CL- 2yr 3yr		-PA- 2yr 3yr		CL PA Av.			CL PA Av.			CL PA Av.		
	yield (bu/a)			% of test average			multi-year avg (bu/a)				tw (lb/bu)			head (+/- Jagger)			height (in.)		
AgriPro																			
Jagalene	71	55	63	96	92	94	40	--	--	--	56	57	56	0	2	1	36	32	34
AgriPro COKER																			
(S) Coker 9553	75	63	69	102	107	105	54	51	60	--	55	57	56	1	1	1	35	30	33
Kansas																			
2137	71	62	66	96	105	100	48	43	52	51	55	57	56	1	0	1	37	32	34
Jagger	79	52	66	107	87	97	46	44	59	48	55	57	56	0	0	0	34	32	33
MFA																			
(S) 2609	75	63	69	102	107	104	--	--	--	--	55	56	56	0	0	0	36	30	33
(S) 2627	76	63	69	103	106	104	--	--	--	--	56	57	56	-1	1	0	35	33	34
Pioneer																			
(S) 25R47	70	64	67	94	108	101	--	--	--	--	56	56	56	1	-1	0	34	30	32
(S) 25R56	72	59	65	98	99	98	54	--	--	--	56	57	56	1	1	1	36	32	34
25R62	75	52	64	102	89	95	--	--	--	--	56	57	56	-1	1	0	36	32	34
Averages	74	59	67	74	59	67	--	--	--	--	55	57	56	0	1	0	35	31	33
CV (%)	7	4	6	7	4	6	--	--	--	--	1	0	1	--	--		4	7	5
LSD (0.05)*	8	4	6	10	7	8	--	--	--	--	1	0	1	--	--		2	3	3

¹CL = Columbus, KS, Cherokee County.

²PA = Parsons, KS, Southeast Agricultural Research Center, Labette County.

(S) = Soft red wheat.

* Least Significant Difference, similar to 'Margin of Error', indicates difference needed to overcome test error.

Table 7. 2008 NORTH CENTRAL Kansas winter wheat performance tests

Brand / Name	BE ¹ BL ² Av.			BE BL Av.			-BE- 2yr 3yr		-BL- 2yr 3yr		BE BL Av.			BE BL		BE BL Av.		
	yield (bu/a)			% of test average			multi-year avg (bu/a)				tw (lb/bu)			head (+/- Jagger)		height (in.)		
AgriPro																		
Art	83	69	76	116	99	107	81	--	57	--	59	59	59	2	--	37	28	33
Hawken	73	73	73	101	105	103	75	--	60	--	59	59	59	2	--	35	34	34
Jagalene	65	64	65	90	92	91	61	79	53	61	58	59	58	1	--	36	35	35
Postrock	79	76	77	109	108	109	73	84	61	64	59	59	59	2	--	37	33	35
RustBuster-N	77	71	74	107	102	104	--	--	--	--	59	59	59	2	--	35	35	35
AGSECO																		
Protection CL	71	70	70	98	101	99	66	77	56	59	58	58	58	1	--	40	36	38
AMIGO																		
Sturdy-2K	66	64	65	92	92	92	66	74	53	53	57	58	57	0	--	38	36	37
Blend																		
Fuller/PostR/SF	80	72	76	110	103	107	--	--	--	--	59	59	59	2	--	36	34	35
Jagger/2137	72	68	70	100	98	99	--	--	--	--	56	59	57	1	--	37	35	36
Overlay/PosR/SF	71	76	73	98	109	103	--	--	--	--	57	59	58	2	--	40	35	38
Kansas																		
(W) Danby	70	73	71	97	104	100	66	82	53	61	60	60	60	3	--	36	35	36
2137	73	75	74	101	107	104	76	88	63	68	56	59	57	1	--	38	36	37
Fuller	82	75	79	114	108	111	76	89	60	65	59	59	59	2	--	37	34	35
Jagger	68	67	67	94	95	94	59	74	52	58	57	58	58	--	--	35	33	34
Overlay	63	78	70	87	111	99	65	81	61	66	53	59	56	2	--	39	33	36
Nebraska																		
Hallam	77	65	71	106	93	100	73	82	55	63	58	59	58	3	--	37	33	35
Overland	80	76	78	111	109	110	78	--	59	--	59	59	59	4	--	40	35	37
Wesley	80	75	78	111	108	110	74	83	61	64	58	59	59	4	--	36	35	36
Oklahoma																		
2174	75	69	72	104	98	101	67	77	56	60	58	59	59	1	--	36	33	35
Centerfield	68	61	64	95	87	91	--	--	--	--	58	59	58	--	--	36	32	34
Deliver	70	70	70	98	101	99	--	--	--	--	58	59	58	1	--	37	33	35
Duster	69	59	64	95	85	90	64	--	48	--	58	59	58	--	--	35	33	34
OK Bullet	73	69	71	102	99	100	69	79	56	62	58	59	59	--	--	37	41	39
OK00611W	71	70	70	98	100	99	--	--	--	--	57	59	58	2	--	38	36	37
Polansky																		
Dominator	68	64	66	94	91	93	61	74	51	59	57	59	58	0	--	35	30	33
Scott Seed																		
TAM 304	66	70	68	92	100	96	--	--	--	--	57	58	58	--	--	33	32	33
Seed-link																		
ACS 56007	64	63	63	89	90	89	--	--	--	--	58	59	58	1	--	37	35	36
ACS 56008	70	70	70	97	100	98	--	--	--	--	58	59	58	1	--	36	34	35
ACS 56012	65	61	63	90	88	89	--	--	--	--	58	59	58	2	--	35	33	34
ACS 56013	62	70	66	86	101	93	--	--	--	--	57	59	58	1	--	33	33	33
ACS97003	69	63	66	95	90	93	71	--	53	--	58	58	58	2	--	34	34	34
Watley																		
TAM 112	68	65	66	94	93	93	63	--	51	--	56	58	57	--	--	35	34	35
WestBred																		
Armour	82	70	76	113	100	106	--	--	--	--	59	58	59	3	--	34	29	31
HV9W02-942R	80	71	76	111	102	107	--	--	--	--	59	59	59	3	--	36	31	34
Santa Fe	78	72	75	108	103	106	84	90	60	64	59	59	59	2	--	35	32	34
Shocker	70	65	68	97	94	95	--	--	--	--	58	59	58	1	--	36	33	35
Smoky Hill	79	70	75	110	100	105	78	87	58	61	59	59	59	0	--	35	35	35
Spartan	73	67	70	102	96	99	68	--	51	--	58	59	58	2	--	32	31	32
Winterhawk	68	67	67	94	96	95	66	--	55	--	59	59	59	2	--	36	31	34

Table 7, continued. 2008 NORTH CENTRAL Kansas winter wheat performance tests

Brand / Name	BE ¹ BL ² Av.			BE BL Av.			-BE- 2yr 3yr		-BL- 2yr 3yr		BE BL Av.			BE BL		BE BL Av.		
	yield (bu/a)			% of test average			multi-year avg (bu/a)				tw (lb/bu)			head (+/- Jagger)		height (in.)		
Averages	72	70	71	72	70	71	--	--	--	--	58	59	58	2	--	36	34	35
CV (%)	4	5	5	4	5	5	--	--	--	--	1	0	1	--	--	3	11	7
LSD (0.05)*	5	6	5	7	8	8	--	--	--	--	1	0	1	--	--	2	6	4

¹ BE = Belleville, KS, North Central Experiment Field, Republic County. (W) = Hard white wheat.

² BL = Beloit, KS, Mitchell County.

* Least Significant Difference, similar to 'Margin of Error', indicates difference needed to overcome test error.

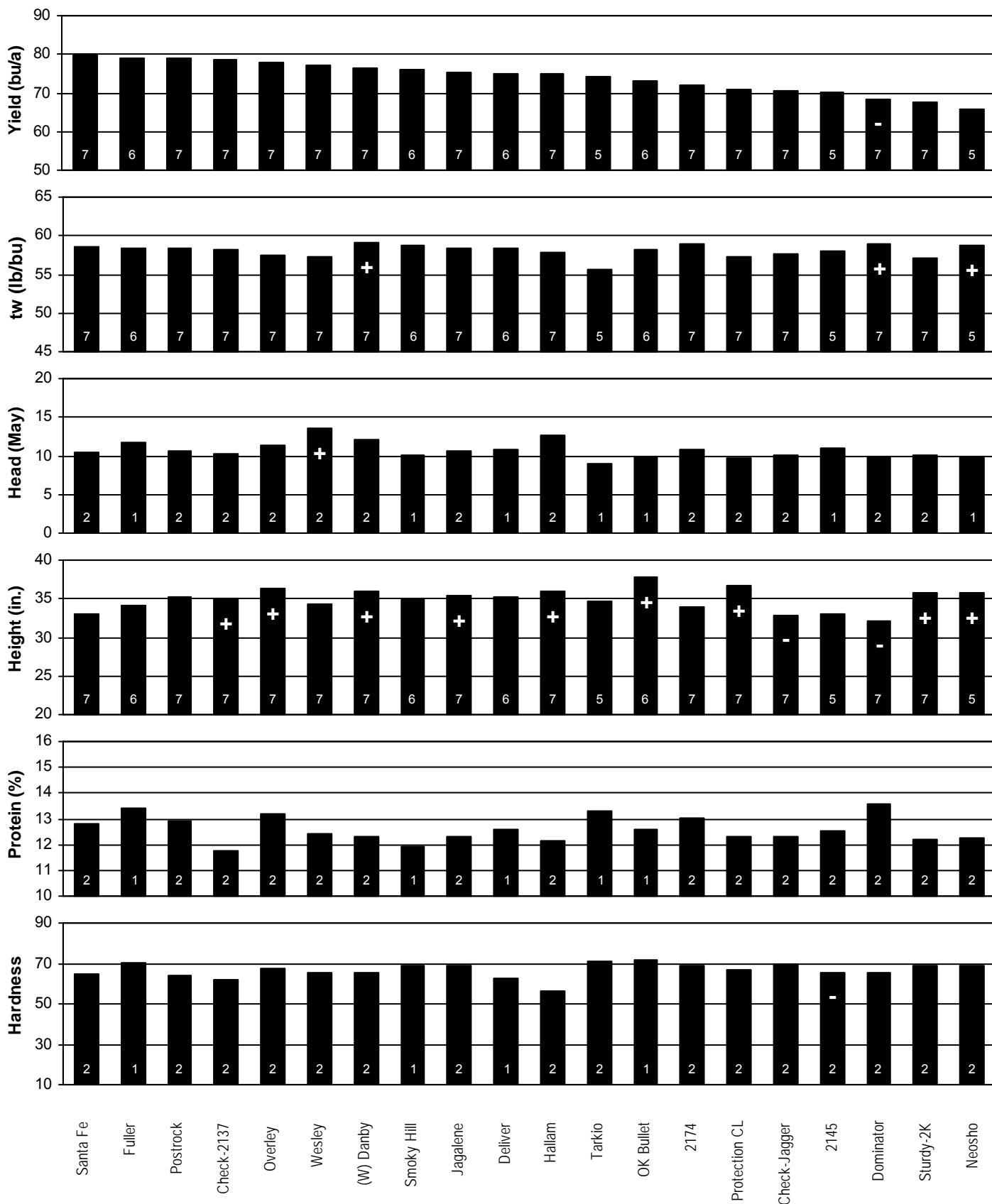


Figure 4. Performance summary of wheat varieties in NORTH CENTRAL Kansas, 2005-2008

Values inside bars indicate the number of comparisons with checks. Symbols (+,-) indicate if statistically greater or less than mean of checks.

Table 8. 2008 SOUTH CENTRAL Kansas winter wheat performance tests

Brand / Name	¹ HE ² HU ³ CS ³ Av.				HE HU CS Av.				-HE- -HU- -CS- 2yr3yr2yr3yr 2yr 3yr				HE HU CS Av.				HE HU CS Av.									
	yield (bu/a) (lb/a)				% of average				multi-year avg (bu/a)				tw (lb/bu)				head (+/- Jagger)				height (in)					
AgriPro																										
Art	55	51	40	48	121	118	109	116	--	--	--	--	36	--	57	56	56	56	1	--	--	1	32	36	--	34
Jagalene	30	30	29	30	66	71	79	72	31	35	41	44	20	--	54	52	--	--	3	--	--	3	33	35	--	34
Postrock	47	35	40	41	104	81	109	98	36	--	42	--	33	--	56	55	55	56	2	--	--	2	32	34	--	33
RustBuster-S	56	48	40	48	123	111	108	114	--	--	--	--	--	--	56	55	55	55	1	--	--	1	34	36	--	35
TAM 203	50	44	30	42	112	104	82	99	--	--	--	--	--	--	55	54	56	55	3	--	--	3	33	36	--	35
AGSECO																										
Protection CL	41	34	28	34	91	80	75	82	35	37	48	49	20	--	52	51	--	--	0	--	--	0	36	36	--	36
AMIGO																										
Sturdy-2K	46	40	30	39	103	93	82	93	38	44	47	47	27	--	55	53	--	--	2	--	--	2	35	37	--	36
Blend																										
FullrPostR/SF	51	47	46	48	113	111	125	116	--	--	--	--	--	--	56	57	56	56	1	--	--	1	33	36	--	34
Jagger/2137	43	42	38	41	96	99	103	99	--	--	--	--	--	--	54	53	56	54	1	--	--	1	34	36	--	35
Overly/PostR/SF	46	42	36	41	102	98	98	99	--	--	--	--	--	--	56	56	--	--	0	--	--	0	33	37	--	35
Kansas																										
(W) Danby	42	36	40	40	94	84	110	96	34	29	46	49	30	--	56	52	58	55	2	--	--	2	35	36	--	35
2137	45	48	55	50	101	113	150	121	41	43	53	52	41	--	55	55	56	55	1	--	--	1	33	36	--	34
Fuller	53	50	40	48	117	116	109	114	39	--	52	--	33	--	56	57	56	56	1	--	--	1	33	35	--	34
Jagger	36	29	28	31	79	67	77	74	33	37	43	45	20	--	52	52	55	53	0	--	--	0	33	37	--	35
Overley	42	38	37	39	94	88	100	94	36	42	47	51	29	--	54	55	57	55	-1	--	--	-1	34	37	--	35
Oklahoma																										
2174	42	44	36	41	94	103	99	99	33	38	48	49	32	--	55	56	57	56	1	--	--	1	33	36	--	34
Centerfield	41	37	33	37	90	87	90	89	--	--	--	--	--	--	55	54	54	54	1	--	--	1	33	37	--	35
Deliver	50	41	34	41	110	96	91	99	38	40	44	45	31	--	57	53	58	56	2	--	--	2	33	35	--	34
Duster	42	45	47	45	94	105	126	108	--	--	--	--	34	--	56	55	55	55	2	--	--	2	32	34	--	33
OK Bullet	38	35	33	35	84	82	89	85	37	--	47	--	27	--	54	55	55	54	2	--	--	2	35	37	--	36
OK00611W	38	38	36	37	84	88	98	90	--	--	--	--	--	--	52	53	54	53	1	--	--	1	34	38	--	36
WestBred																										
Armour	60	54	31	48	132	126	83	114	--	--	--	--	--	--	55	55	56	55	0	--	--	0	30	33	--	31
HV9W02-942R	56	51	41	49	124	119	112	118	--	--	--	--	--	--	55	55	54	55	2	--	--	2	31	34	--	32
Santa Fe	49	46	39	45	109	108	107	108	43	46	49	51	36	--	57	57	58	57	0	--	--	0	32	35	--	34
Shocker	46	47	41	44	102	109	110	107	38	--	50	--	30	--	55	56	56	55	1	--	--	1	32	35	--	33
Spartan	50	49	28	42	111	113	77	100	--	--	--	--	24	--	53	54	56	55	0	--	--	0	28	32	--	30
Winterhawk	33	41	38	37	73	97	102	91	--	--	--	--	32	--	51	52	55	53	1	--	--	1	34	36	--	35
Averages	45	43	37	42	45	43	37	42	--	--	--	--	--	--	55	55	48	52	1	--	--	1	33	36	--	34
CV (%)	5	9	11	8	5	9	11	8	--	--	--	--	--	--	2	2	2	2	--	--	--	--	3	3	--	3
LSD (0.05)*	3	5	6	5	7	13	15	12	--	--	--	--	--	--	1	1	1	1	--	--	--	--	1	2	--	2

¹ HE = Hesston, KS, Harvey County Experiment Field, Harvey County..
² HU = Hutchinson, KS, South Central Experiment Field, Reno County..
³ CS = Conway Springs, KS, Sumner County.

(W) = Hard white wheat.
 * Least Significant Difference, similar to 'Margin of Error', indicates difference needed to overcome test error.

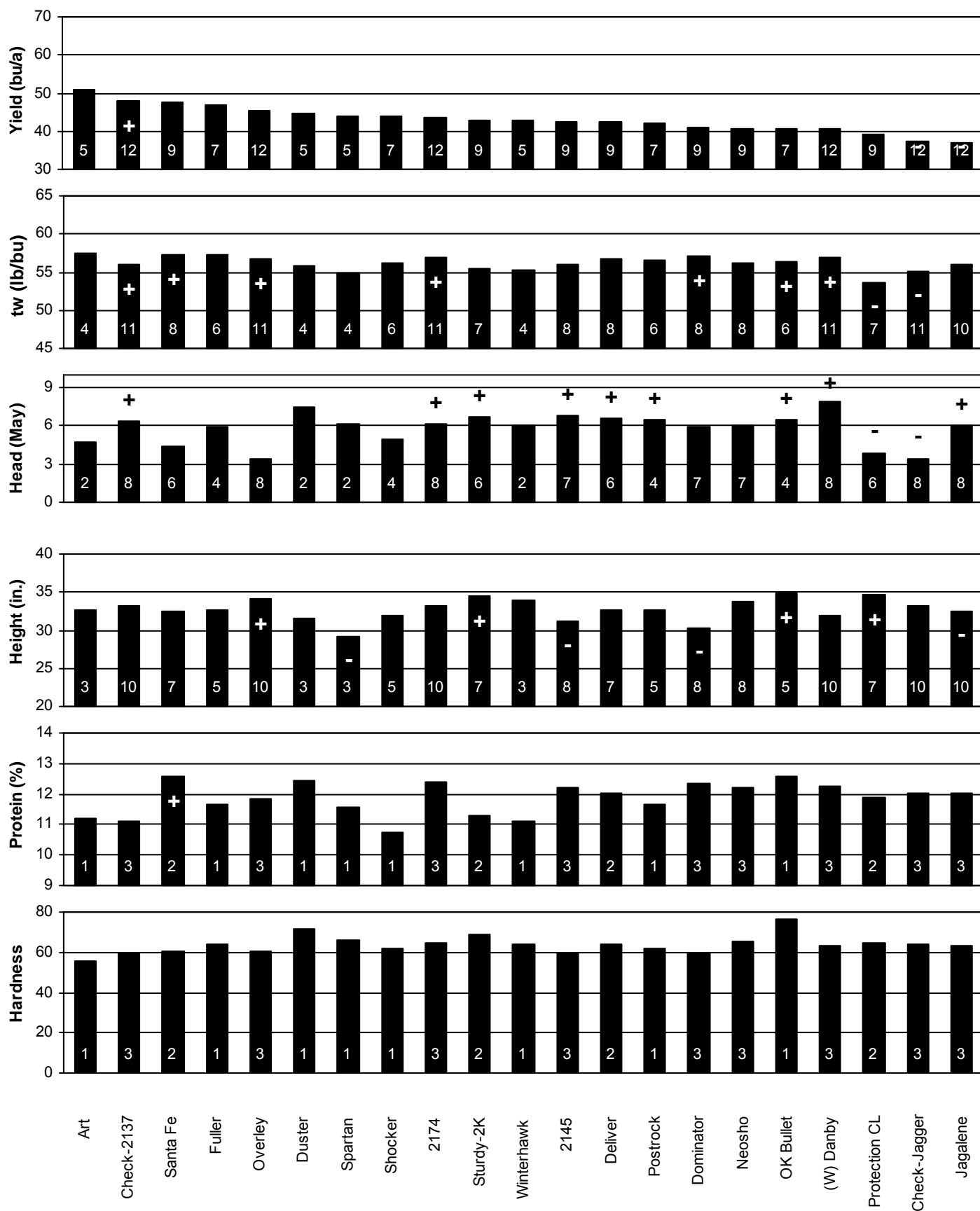


Figure 5. Performance summary of wheat varieties in SOUTH CENTRAL Kansas, 2005-2008

Values inside bars indicate the number of comparisons with checks. Symbols (+, -) indicate if statistically greater or less than mean of checks.

Table 9. 2008 NORTHWEST Kansas winter wheat performance tests

Brand / Name	1 2 3				-HA-				-CO-				-TR-													
	HA	CO	TR	Av.	HA	CO	TR	Av.	2yr	3yr	2yr	3yr	2yr	3yr	HA	CO	TR	Av.	HA	CO	TR	Av.	HA	CO	TR	Av.
	yield (bu/a)				% of test average				multi-year avg (bu/a)				tw (lb/bu)				head (+/- Jagger)				height (in.)					
AgriPro																										
(W) NuDakota	63	66	63	64	106	107	118	110	56	--	73	--	54	50	59	59	59	59	4	4	2	3	32	28	24	28
Art	58	62	50	57	97	102	93	97	--	--	73	--	53	--	61	60	58	60	3	2	2	3	34	29	25	29
Hawken	64	61	52	59	106	99	97	101	--	--	68	--	51	--	61	60	60	61	2	2	1	2	32	28	22	27
Jagalene	62	62	53	59	103	101	100	101	52	59	68	70	45	44	62	61	61	62	4	4	3	3	35	30	24	30
Postrock	59	67	54	60	99	110	101	103	52	--	74	--	54	50	61	60	61	61	3	1	1	2	33	28	25	29
TAM 111	62	63	55	60	104	103	104	104	52	60	72	74	57	51	62	60	61	61	4	4	3	4	36	33	25	31
AGSECO																										
Protection CL	54	62	48	55	90	101	90	94	51	--	70	--	46	45	59	57	58	58	2	0	1	1	36	32	26	32
TAM 110	59	64	55	60	99	104	104	103	53	61	68	66	48	40	60	60	60	60	0	-1	0	0	35	28	25	29
Blend																										
Hatch/T111/PR	62	66	58	62	103	108	109	107	--	--	--	--	--	--	62	59	61	61	3	2	2	2	35	32	25	31
Jagger/2137	63	62	56	60	106	101	104	104	--	--	--	--	--	--	61	60	60	60	1	1	1	1	36	29	25	30
Wesly/T111/PR	61	60	56	59	102	98	105	102	--	--	--	--	--	--	60	59	60	60	4	4	3	4	34	32	25	30
Colorado																										
Bill Brown	63	69	61	64	105	112	115	111	--	--	--	--	--	--	62	60	61	61	3	2	2	2	33	31	25	30
Bond CL	58	69	54	60	96	112	102	103	51	59	72	74	49	48	62	58	59	60	3	0	1	1	36	32	26	31
Hatcher	63	69	61	65	105	113	115	111	53	61	77	78	59	53	61	60	61	61	3	3	3	3	35	30	24	30
Ripper	61	65	59	62	102	105	111	106	--	--	68	--	57	--	59	59	59	59	3	1	1	1	33	28	24	28
Drussel																										
T81	61	57	56	58	102	93	106	100	53	61	65	69	50	47	61	60	61	61	2	1	1	1	35	31	24	30
Kansas																										
(W) Danby	67	68	57	64	112	111	107	110	59	63	71	73	53	50	63	60	62	62	5	5	3	4	35	32	24	30
2137	61	56	52	57	102	92	98	98	52	55	65	65	54	50	60	59	59	59	4	4	3	4	34	31	24	30
Fuller	58	63	59	60	97	103	110	103	51	--	71	--	54	49	61	59	61	60	2	2	1	1	36	30	25	30
Jagger	50	61	52	54	83	100	98	94	47	56	71	71	47	45	60	59	59	59	0	0	0	0	35	30	25	30
Overley	54	63	49	56	90	103	93	96	50	53	72	71	53	47	61	61	60	61	1	0	1	1	36	30	26	31
Nebraska																										
Hallam	58	63	57	59	96	102	106	102	50	56	68	69	57	52	58	59	58	58	3	2	1	2	37	32	26	32
Overland	68	64	59	63	113	104	110	109	--	--	73	--	59	--	61	61	60	61	6	4	3	4	38	34	27	33
Wesley	67	56	57	60	111	91	107	103	54	57	64	66	53	45	60	59	59	59	4	4	3	4	33	28	24	28
Oklahoma																										
2174	50	56	44	50	84	90	83	86	43	46	65	65	44	42	62	60	61	61	4	3	3	3	33	29	22	28
Centerfield	56	57	45	53	93	94	84	90	--	--	--	--	--	--	61	59	59	60	4	2	3	3	34	30	23	29
Deliver	52	54	41	49	86	88	77	84	46	--	67	--	45	40	62	60	60	60	4	4	4	4	35	29	24	29
Duster	56	58	53	56	93	95	100	96	--	--	66	--	54	--	62	59	61	61	4	4	3	4	34	30	24	29
OK Bullet	59	62	54	58	98	100	102	100	52	--	68	--	53	49	62	61	61	61	3	2	2	2	37	33	27	32
OK00611W	57	59	50	55	96	96	94	95	--	--	--	--	--	--	60	59	60	59	3	2	2	2	36	31	25	30
Seed-link																										
ACS 56007	55	54	51	53	92	88	95	92	--	--	--	--	--	--	59	54	58	57	6	8	5	7	33	29	24	28
ACS 56008	58	50	47	52	96	82	88	89	--	--	--	--	--	--	57	57	57	57	5	5	3	4	33	30	25	29
ACS 56012	54	47	46	49	91	76	87	85	--	--	--	--	--	--	60	58	59	59	6	6	5	6	32	30	23	28
ACS 56013	58	48	44	50	97	77	84	86	--	--	--	--	--	--	60	58	60	59	4	5	5	5	33	27	22	27
ACS97003	53	52	37	47	88	85	69	80	--	--	63	--	42	--	60	55	58	58	5	6	4	5	36	28	22	28
Trio-Research																										
T-140	57	66	44	56	95	107	82	95	--	--	--	--	--	--	59	60	58	59	2	1	2	1	36	32	24	31
Watley																										
TAM 112	66	75	60	67	110	121	112	115	61	--	78	--	61	57	62	60	61	61	0	0	0	0	37	31	26	31

Table 9, continued. 2008 NORTHWEST Kansas winter wheat performance tests

Brand / Name	¹ HA ² CO ³ TR Av.				HA CO TR Av.				-HA- -CO- -TR- 2yr 3yr 2yr 3yr 2yr 3yr				HA CO TR Av.				HA CO TR Av.											
	yield (bu/a)				% of test average				multi-year avg (bu/a)				tw (lb/bu)				head (+/- Jagger)				height (in.)							
WestBred																												
Armour	73	63	49	62	121	102	93	105	--	--	--	--	--	--	60	60	59	60	1	1	1	1	32	26	22	27		
Aspen	63	61	51	59	106	100	96	101	--	--	71	--	54	--	61	60	59	60	1	1	1	1	32	26	22	26		
HV9W02-942R	63	59	52	58	105	96	97	99	--	--	--	--	--	--	61	60	59	60	5	6	4	5	31	28	22	27		
Keota	50	59	49	53	83	96	93	91	46	54	68	71	47	44	61	60	61	60	4	3	3	3	34	32	24	30		
Smoky Hill	59	63	57	60	99	102	106	103	49	--	71	--	50	49	60	60	62	61	4	4	2	3	34	31	25	30		
Spartan	58	61	57	59	97	100	106	101	--	--	--	--	--	--	59	58	59	58	0	1	2	1	32	25	23	27		
Winterhawk	60	66	57	61	100	107	107	104	--	--	--	--	--	--	61	60	62	61	4	2	3	3	34	32	24	30		
Averages	60	61	53	58	60	61	53	58	--	--	--	--	--	--	61	59	60	60	3	3	2	3	34	30	24	30		
CV (%)	7	6	8	7	7	6	8	7	--	--	--	--	--	--	1	2	2	2	--	--	--	--	3	3	6	4		
LSD (0.05)*	6	5	6	6	9	9	11	10	--	--	--	--	--	--	1	1	1	1	--	--	--	--	1	1	2	2		

¹ HA = Hays, KS, K-State Research and Extension Center - Hays, Ellis County.

² CO = Colby, KS, Northwest Research-Extension Center, Thomas County.

³ TR = Tribune, KS, Southwest Research-Extension Center, Greeley County.

(W) = Hard white wheat.

* Least Significant Difference, similar to 'Margin of Error', difference needed to overcome test error.

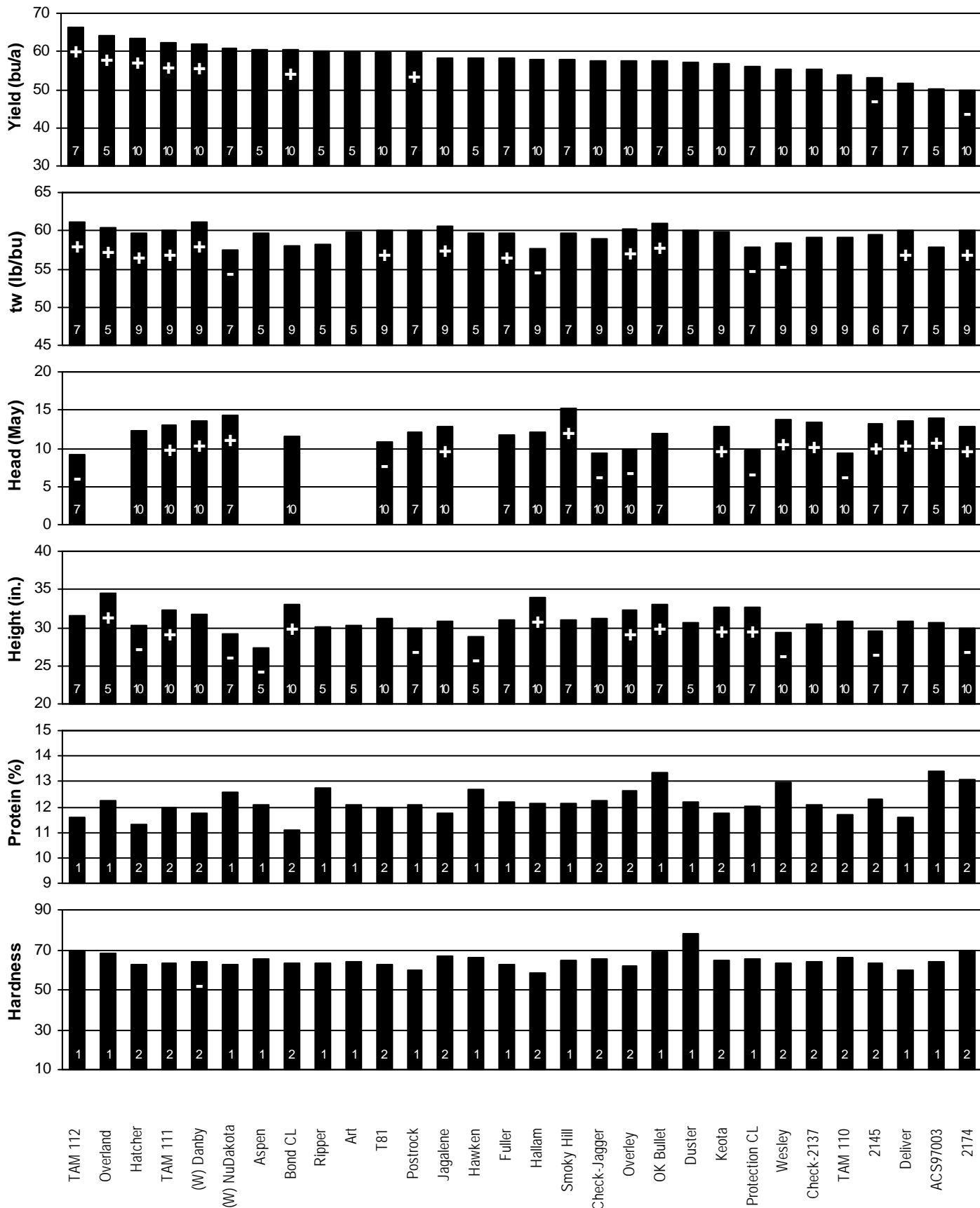


Figure 6. Performance summary of wheat varieties in NORTHWEST Kansas, 2005-2008

Values inside bars indicate the number of comparisons with checks. Symbols (+,-) indicate if statistically greater or less than mean of checks.

Table 10. 2008 SOUTHWEST Kansas winter wheat performance tests

Brand / Name	¹ LA ² DC ³ GC Av.				-LA- -DC- -GC-				LA DC GC Av.				LA DC GC Av.											
	yield (bu/a)				% of test average				multi-year avg (bu/a)				tw (lb/bu)				head (+/- Jagger)				height (in.)			
AgriPro																								
Hawken	--	52	--	52	--	101	--	101	--	--	--	--	--	58	--	58	--	--	--	--	--	23	--	23
Jagalene	--	49	--	49	--	94	--	94	33	--	--	32 36	--	59	--	59	--	--	--	--	--	24	--	24
Postrock	--	53	--	53	--	102	--	102	28	--	--	37 --	--	59	--	59	--	--	--	--	--	24	--	24
TAM 111	--	52	--	52	--	100	--	100	27	--	--	38 44	--	59	--	59	--	--	--	--	--	27	--	27
TAM 203	--	52	--	52	--	100	--	100	--	--	--	-- --	--	55	--	55	--	--	--	--	--	26	--	26
AGSECO																								
Protection CL	--	46	--	46	--	89	--	89	29	--	--	33 36	--	55	--	55	--	--	--	--	--	24	--	24
TAM 110	--	50	--	50	--	98	--	98	31	--	--	33 33	--	57	--	57	--	--	--	--	--	23	--	23
Blend																								
Hatch/T111/PR	--	54	--	54	--	105	--	105	--	--	--	-- --	--	57	--	57	--	--	--	--	--	25	--	25
Jagger/2137	--	48	--	48	--	92	--	92	--	--	--	-- --	--	57	--	57	--	--	--	--	--	24	--	24
T81/T112/Shoc	--	51	--	51	--	99	--	99	--	--	--	-- --	--	59	--	59	--	--	--	--	--	22	--	22
Colorado																								
Bill Brown	--	56	--	56	--	109	--	109	--	--	--	-- --	--	58	--	58	--	--	--	--	--	24	--	24
Bond CL	--	51	--	51	--	98	--	98	34	--	--	33 35	--	57	--	57	--	--	--	--	--	26	--	26
Hatcher	--	57	--	57	--	111	--	111	35	--	--	36 40	--	58	--	58	--	--	--	--	--	25	--	25
Ripper	--	54	--	54	--	105	--	105	--	--	--	-- --	--	56	--	56	--	--	--	--	--	23	--	23
Drussel																								
T81	--	49	--	49	--	95	--	95	31	--	--	30 36	--	59	--	59	--	--	--	--	--	22	--	22
Kansas																								
(W) Danby	--	61	--	61	--	119	--	119	36	--	--	36 39	--	61	--	61	--	--	--	--	--	24	--	24
2137	--	49	--	49	--	95	--	95	33	--	--	36 34	--	57	--	57	--	--	--	--	--	25	--	25
Fuller	--	57	--	57	--	111	--	111	30	--	--	34 --	--	58	--	58	--	--	--	--	--	23	--	23
Jagger	--	50	--	50	--	98	--	98	24	--	--	31 35	--	58	--	58	--	--	--	--	--	22	--	22
Overley	--	49	--	49	--	94	--	94	26	--	--	32 34	--	58	--	58	--	--	--	--	--	25	--	25
Nebraska																								
Wesley	--	56	--	56	--	108	--	108	29	--	--	30 35	--	57	--	57	--	--	--	--	--	24	--	24
Oklahoma																								
2174	--	48	--	48	--	94	--	94	27	--	--	33 33	--	58	--	58	--	--	--	--	--	25	--	25
Centerfield	--	45	--	45	--	87	--	87	--	--	--	-- --	--	58	--	58	--	--	--	--	--	24	--	24
Deliver	--	45	--	45	--	88	--	88	34	--	--	35 38	--	58	--	58	--	--	--	--	--	24	--	24
Duster	--	48	--	48	--	93	--	93	--	--	--	-- --	--	58	--	58	--	--	--	--	--	25	--	25
OK Bullet	--	54	--	54	--	104	--	104	32	--	--	31 --	--	60	--	60	--	--	--	--	--	27	--	27
OK00611W	--	47	--	47	--	92	--	92	--	--	--	-- --	--	58	--	58	--	--	--	--	--	24	--	24
Watley																								
TAM 112	--	62	--	62	--	120	--	120	40	--	--	35 --	--	60	--	60	--	--	--	--	--	24	--	24
WestBred																								
Armour	--	51	--	51	--	100	--	100	--	--	--	-- --	--	56	--	56	--	--	--	--	--	20	--	20
Aspen	--	49	--	49	--	95	--	95	--	--	--	-- --	--	58	--	58	--	--	--	--	--	22	--	22
HV9W02-942R	--	58	--	58	--	113	--	113	--	--	--	-- --	--	58	--	58	--	--	--	--	--	24	--	24
Keota	--	50	--	50	--	97	--	97	30	--	--	36 37	--	59	--	59	--	--	--	--	--	23	--	23
Shocker	--	45	--	45	--	87	--	87	30	--	--	35 --	--	56	--	56	--	--	--	--	--	23	--	23
Spartan	--	53	--	53	--	102	--	102	--	--	--	-- --	--	56	--	56	--	--	--	--	--	21	--	21
Winterhawk	--	48	--	48	--	93	--	93	--	--	--	-- --	--	59	--	59	--	--	--	--	--	24	--	24
Averages	--	52	--	52	--	52	--	52	--	--	--	-- --	--	58	--	58	--	--	--	--	--	24	--	24
CV (%)	--	11	--	11	--	11	--	11	--	--	--	-- --	--	1	--	1	--	--	--	--	--	3	--	3
LSD (0.05)*	--	8	--	8	--	15	--	15	--	--	--	-- --	--	1	--	1	--	--	--	--	--	1	--	1

¹ LA = Larned, KS, Pawnee County. Abandoned; poor emergence and stands. (W) = Hard white wheat.

² DC = Dodge City, KS, Ford County.

³ GC = Garden City, KS, Finney County. Abandoned; hailstorm 6/20/2008.

* Least Significant Difference, similar to 'Margin of Error', indicates difference needed to overcome test error.

Table 11. 2008 IRRIGATED Kansas winter wheat performance tests

Brand / Name	¹ CO ² DC ³ GC Av.				-CO- 2yr 3yr				-DC- 2yr 3yr				-GC- 2yr 3yr				CO DC GC Av.				CO DC GC Av.				CO DC GC Av.							
	yield (bu/a)				% of test average				multi-year avg (bu/a)				tw (lb/bu)				head (+/- Jagger)				height (in.)											
AgriPro																																
Jagalene	103	--	--	103	105	--	--	105	94	91	--	--	59	63	--	--	56	--	--	56	2	--	--	2	40	--	--	40				
AGSECO																																
TAM 110	101	--	--	101	103	--	--	103	90	80	--	--	62	64	--	--	56	--	--	56	-3	--	--	-3	40	--	--	40				
Blend																																
Hatch/T111/PR	90	--	--	90	93	--	--	93	--	--	--	--	--	--	--	--	54	--	--	54	2	--	--	2	43	--	--	43				
Jagger/2137	100	--	--	100	102	--	--	102	--	--	--	--	--	--	--	--	54	--	--	54	-1	--	--	-1	40	--	--	40				
T81/T112/Shoc	102	--	--	102	105	--	--	105	--	--	--	--	--	--	--	--	57	--	--	57	-2	--	--	-2	40	--	--	40				
Wesly/T111/PR	95	--	--	95	98	--	--	98	--	--	--	--	--	--	--	--	54	--	--	54	2	--	--	2	43	--	--	43				
Colorado																																
Bill Brown	91	--	--	91	93	--	--	93	--	--	--	--	--	--	--	--	51	--	--	51	3	--	--	3	40	--	--	40				
Bond CL	101	--	--	101	104	--	--	104	97	90	--	--	63	64	--	--	52	--	--	52	-1	--	--	-1	42	--	--	42				
Hatcher	88	--	--	88	90	--	--	90	93	90	--	--	68	66	--	--	53	--	--	53	2	--	--	2	41	--	--	41				
Ripper	95	--	--	95	97	--	--	97	87	--	--	--	--	--	--	--	54	--	--	54	0	--	--	0	38	--	--	38				
Drussel																																
T81	94	--	--	94	96	--	--	96	91	89	--	--	64	66	--	--	55	--	--	55	0	--	--	0	42	--	--	42				
Kansas																																
(W) Danby	106	--	--	106	108	--	--	108	100	96	--	--	65	66	--	--	55	--	--	55	4	--	--	4	41	--	--	41				
2137	98	--	--	98	100	--	--	100	92	80	--	--	63	61	--	--	54	--	--	54	1	--	--	1	41	--	--	41				
Fuller	96	--	--	96	99	--	--	99	98	--	--	--	65	--	--	--	54	--	--	54	0	--	--	0	38	--	--	38				
Jagger	93	--	--	93	95	--	--	95	90	88	--	--	50	56	--	--	53	--	--	53	0	--	--	0	40	--	--	40				
Overley	102	--	--	102	104	--	--	104	100	94	--	--	58	61	--	--	57	--	--	57	-1	--	--	-1	40	--	--	40				
Nebraska																																
Wesley	91	--	--	91	93	--	--	93	91	86	--	--	64	65	--	--	51	--	--	51	3	--	--	3	39	--	--	39				
Oklahoma																																
2174	91	--	--	91	93	--	--	93	90	83	--	--	59	58	--	--	57	--	--	57	2	--	--	2	39	--	--	39				
Centerfield	92	--	--	92	95	--	--	95	--	--	--	--	--	--	--	--	56	--	--	56	3	--	--	3	41	--	--	41				
Deliver	95	--	--	95	98	--	--	98	94	--	--	--	63	--	--	--	54	--	--	54	2	--	--	2	41	--	--	41				
Duster	89	--	--	89	91	--	--	91	91	--	--	--	--	--	--	--	53	--	--	53	3	--	--	3	39	--	--	39				
OK Bullet	96	--	--	96	99	--	--	99	96	--	--	--	66	--	--	--	59	--	--	59	2	--	--	2	43	--	--	43				
OK00611W	97	--	--	97	100	--	--	100	--	--	--	--	--	--	--	--	58	--	--	58	1	--	--	1	40	--	--	40				
Scott Seed																																
TAM 304	104	--	--	104	106	--	--	106	--	--	--	--	--	--	--	--	51	--	--	51	-1	--	--	-1	37	--	--	37				
Watley																																
TAM 112	100	--	--	100	103	--	--	103	99	--	--	--	68	--	--	--	58	--	--	58	-3	--	--	-3	36	--	--	36				
WestBred																																
Armour	102	--	--	102	104	--	--	104	--	--	--	--	--	--	--	--	55	--	--	55	-2	--	--	-2	37	--	--	37				
Aspen	110	--	--	110	113	--	--	113	108	--	--	--	--	--	--	--	55	--	--	55	-1	--	--	-1	37	--	--	37				
HV9W02-942R	100	--	--	100	103	--	--	103	--	--	--	--	--	--	--	--	54	--	--	54	4	--	--	4	37	--	--	37				
Keota	97	--	--	97	99	--	--	99	93	90	--	--	64	63	--	--	57	--	--	57	2	--	--	2	41	--	--	41				
Shocker	99	--	--	99	101	--	--	101	--	--	--	--	--	--	--	--	56	--	--	56	-1	--	--	-1	38	--	--	38				
Spartan	93	--	--	93	95	--	--	95	96	--	--	--	--	--	--	--	52	--	--	52	0	--	--	0	37	--	--	37				
Winterhawk	96	--	--	96	98	--	--	98	98	--	--	--	--	--	--	--	54	--	--	54	1	--	--	1	41	--	--	41				
Averages	98	--	--	98	98	--	--	98	--	--	--	--	--	--	--	--	55	--	--	55	1	--	--	1	40	--	--	40				
CV (%)	4	--	--	4	4	--	--	4	--	--	--	--	--	--	--	--	2	--	--	2	--	--	--	--	4	--	--	4				
LSD (0.05)*	6	--	--	6	6	--	--	6	--	--	--	--	--	--	--	--	2	--	--	2	--	--	--	--	2	--	--	2				

¹ CO = Colby, KS, Northwest Research-Extension Center, Thomas County.

² DC = Dodge City, KS, Ford County. Abandoned; extreme variation.

³ GC = Garden City, KS, Finney County. Abandoned, hailstorm 6/20/08.

* Least Significant Difference, similar to 'Margin of Error', difference needed to overcome test error.

(W) = Hard white wheat.

Table 12. 2008 Planted seed characteristics and Hessian Fly ratings

Brand / Name	1000	Test weight	Seeds per lb.	Hess. fly ¹	Brand / Name	1000	Test weight	Seeds per lb.	Hess. fly ¹
	Seed weight					Seed weight			
	(grams)	(lb/bu)	(1000)	(rating)		(grams)	(lb/bu)	(1000)	(rating)
AgriPro					Centerfield	25.5	56.9	17.8	MR
(W) NuDakota	28.5	55.5	15.9	--	Deliver	33.0	60.7	13.8	H
Art	26.0	62.2	17.5	S	Duster	16.8	55.3	27.1	R
Hawken	31.0	58.2	14.6	MS	OK Bullet	30.0	58.6	15.1	MS
Jagalene	25.3	57.6	18.0	S	OK00611W	32.8	57.1	13.9	S
Neosho	32.5	60.4	14.0	S	Pioneer				
Postrock	30.3	61.4	15.0	S	(S) 25R47	38.8	58.8	11.7	--
RustBuster-N	29.5	60.4	15.4	--	(S) 25R56	33.5	60.9	13.5	--
RustBuster-S	28.5	56.6	15.9	--	(S) 25R62	--	--	--	--
TAM 111	38.3	60.0	11.9	MS	Polansky				
TAM 203	35.0	56.2	13.0	--	Dominator	24.5	56.5	18.5	H
AgriPro COKER					Scott Seed				
(S) Coker 9553	38.5	61.0	11.8	--	TAM 304	31.3	58.1	14.5	--
AGSECO					Seed-link				
Onaga	14.8	59.4	30.8	--	ACS 56007	54.3	56.5	8.4	--
Protection CL	33.8	60.3	13.4	S	ACS 56008	48.5	57.7	9.4	--
TAM 110	32.0	62.2	14.2	S	ACS 56012	52.0	60.8	8.7	--
AMIGO					ACS 56013	49.0	59.5	9.3	--
Sturdy-2K	30.0	58.8	15.1	--	ACS97003	43.3	62.1	10.5	--
Blend					Trio-Research				
Fuller/PostR/SF	25.5	57.0	17.8	--	T-140	--	--	--	--
Hatche/T111/PR	35.0	59.1	13.0	--	Watley				
Jagger/2137	32.8	60.2	13.9	--	TAM 112	32.0	60.6	14.2	S
Overlay/PosR/SF	--	--	--	--	WestBred				
T81/TAM112/Shoc	32.3	60.4	14.1	--	Armour	39.8	60.1	11.4	--
Wesley/PR/Ta111	36.0	57.7	12.6	--	Aspen	34.3	63.2	13.2	S
Colorado					HV9W02-942R	36.8	61.1	12.3	S
Bill Brown	35.3	59.2	12.9	--	Keota	32.8	59.8	13.9	S
Bond CL	37.8	59.5	12.0	S	Santa Fe	30.5	58.9	14.9	S
Hatcher	37.3	57.4	12.2	MR	Shocker	25.8	56.7	17.6	S
Ripper	39.3	59.1	11.6	--	Smoky Hill	27.3	54.7	16.7	S
Drussel					Spartan	39.5	59.8	11.5	S
T81	33.3	58.8	13.6	S	Tarkio	32.0	62.2	14.2	S
Kansas					Winterhawk	37.0	62.8	12.3	S
(W) Danby	28.8	59.3	15.8	S	Maximum	54.3	63.2	30.8	
2137	32.8	60.1	13.9	MR	Minimum	0.0	53.3	8.4	
2145	24.0	59.9	18.9	MR	Average	32.3	58.9	14.3	
Fuller	37.3	57.5	12.2	S					
Jagger	34.0	57.8	13.3	S					
Overlay	39.5	56.6	11.5	S					
MFA									
(S) 2609	25.3	55.4	18.0	--					
(S) 2627	36.8	53.3	12.3	--					
Nebraska									
Hallam	30.0	57.2	15.1	--					
Overland	34.3	62.5	13.2	S					
Wesley	36.3	56.6	12.5	S					
Oklahoma									
2174	28.5	59.6	15.9	MR					

¹ Hessian fly ratings by C.E. Parker, USDA, with inputs from Erick DeWolf, Plant Pathology, and Phil Sloderbeck, Entomology; S = majority of plants susceptible, H = mixture of susceptible and resistant plants (heterogenous), R = majority of plants resistant. Tested with recent collection of Great Plains Hessian fly.

(W) = Hard white wheat. (S) = Soft red wheat.

2008 National Winter Canola Variety Trial

Winter canola production is a good fit for small-grains cropping systems because both use the same equipment. Canola is an excellent crop to rotate with winter wheat because it is a broadleaf; this allows use of more effective herbicides to control grassy winter annual weeds. Canola and wheat have no major diseases in common, so growing canola breaks disease cycles. Because canola is an oilseed, its commodity price is not tied to those of cereal grains, which spreads economic risks over more than one commodity class.

Objectives

Objectives of the National Winter Canola Variety Trial (NWCVT) are to evaluate improved germplasm over a wide range of environments, determine where released varieties and experimental lines are best adapted, and increase visibility of winter canola across the nation. Information obtained from this trial aids producers with variety selection. The wide diversity of environments included in the trial has improved our knowledge and understanding of winter canola variety performance.

Procedures

The NWCVT was distributed to 63 locations in 26 states for the 2007-2008 growing season. The trial included 17 released varieties and 43 experimentals from 10 participating seed suppliers. Blue Sun Biodiesel LLC is the newest participant. All entries were treated with either Helix Xtra or Prosper 400 to control insects and diseases during winter.

Management guidelines were supplied to cooperators, but previous experience at the location influenced final management decisions. Agronomic information, site descriptions, and growing conditions are described for each location. All trials were planted in small research plots (approximately 100 ft²) and replicated three times. Yield results are listed highest to lowest and include 2-year averages.

2007-2008 Growing Conditions

Monthly maximum and minimum temperatures and precipitation are plotted in the graph at the top of the page summarizing each location. In general, the 2007-2008 season was challenging for growing winter canola, particularly at seedling establishment and harvest. Dry soils hindered emergence at some locations. Heavy rains soon followed and further reduced stands. Plants that developed normally were able to survive the winter. Winterkill was negligible at most locations, even where plant development was delayed. Where stands were thin, plants compensated with additional branching. Prior to harvest, heavy rains, high winds, and hail reduced yield potential at affected locations. High yields were achieved in environments where moisture was not limiting.

Test Locations

Seven of the 11 trials planted in Kansas and Oklahoma were harvested. Four were adversely affected by severe storms that caused considerable losses due to shattering and lodging. Trial locations included in this summary are Hesston and Garden City, Kansas.

Acknowledgements

This work was funded in part by the USDA-CSREES. Michael Stamm, Canola Breeder, Kansas State University and Oklahoma State University, is senior author. Assistant scientist Cynthia La Barge and student worker Ryan Westerman assisted with planting, care, harvest, and data preparation. Sincere appreciation is extended to Kansas State University agronomists Mark Claassen and John Holman, Oklahoma State University agronomists Chad Godsey and Rick Kochenower, and Texas A&M University agronomist John Sij for their cooperation and management of trials at remote locations.

Table 1. Seed sources for entries in the 2007-2008 national winter canola variety trial

Brand/Name	Type ¹	Trait ²	U.S. Market	Trans-genic	Sd Trt ³	Brand/Name	Type ¹	Trait ²	U.S. Market	Trans-genic	Sd Trt ³
DL Seeds Inc. Manitoba, Canada Kevin McCallum (kevin.mccallum@dlseeds.ca)						Pioneer Hi-Bred Cole Randol (800-228-4050 ext. 24)					
Flash	Hyb	---	Yes	No	H	46W14	Hyb	---	No	No	H
Hornet	Hyb	---	Yes	No	H	46W99	Hyb	RR	No	Yes	H
Rally	Hyb	---	Yes	No	H	45D03	Hyb	SD	No	No	H
Sitro	Hyb	---	Yes	No	H	University of Arkansas Department of Crop, Soil, & Environmental Science Fayetteville, AR 72701 Dr. Robert Bacon (479-545-5715)					
DSV07100	Hyb	---	No	No	H	ARC2180-1	OP	---	No	No	H
DSV07101	Hyb	---	No	No	H	ARC98007	OP	---	No	No	H
DSV07102	Hyb	---	No	No	H	ARC98015	OP	---	No	No	H
Kansas State University Department of Agronomy 2004 Throckmorton Plant Sciences Center Manhattan, KS 66506-5501 Michael J. Stamm (785-532-3871)						ARC97018 ARC97019 Norddeutsche Pflanzenzucht (NPZ) Hans-Georg Lembke KG Hohenlieth Germany D-24363 Holtsee Martin Frauen (m.frauen@npz.de)					
Abilene	OP	---	Yes	No	H	Baldur	Hyb	---	Yes	No	H
KS3018	OP	---	No	No	H	Ceres	OP	---	No	No	H
KS3074	OP	---	No	No	H	Jetton	OP	---	No	No	H
KS3077	OP	---	No	No	H	Kronos	Hyb	---	Yes	No	H
KS3132	OP	---	No	No	H	NPZ0391RR	Hyb	RR	No	Yes	H
KS3254	OP	---	No	No	H	NPZ0591RR	Hyb	RR	No	Yes	H
KS3302	OP	---	No	No	H	Taurus	Hyb	---	No	No	H
KS4022	OP	---	No	No	H	Visby	Hyb	---	No	No	H
KS4085	OP	---	No	No	H	Blue Sun Biodiesel 14143 Denver West Parkway, Suite 100 Golden, CO 80401 Charlie Rife (charlie@gobluesun.com)					
KS4158	OP	---	No	No	H	BSX-501		---	No	No	H
KS7436	OP	---	No	No	H	BSX-567		---	No	No	H
KS9135	OP	---	No	No	H	Winfield Solutions / Croplan Genetics 132 Arabian Path, St. Peters, MO 63376 Jay Bjerke, Canola Product Manager (636-379-9118) HyClass 107W					
Plainsman	OP	---	Yes	No	H	OP	RR	Yes	Yes	H	
Sumner	OP	SU	Yes	No	H	Miles Enterprises, Owensboro, KY Brian Caldbeck, Innovative Product Manager (270-926-2420)					
Wichita	OP	---	Yes	No	H	Forza	OP	---	Yes	No	H
Monsanto Company 800 North Lindberg Bvd. St. Louis, MO 63167 Jeff Koscelny (314-694-2335)						Kadore	OP	---	Yes	No	H
CWH081	Hyb	---	No	No	P	Satori	OP	---	Yes	No	H
CWH095	Hyb	---	No	No	P	Hybristar	Hyb	---	Yes	No	H
CWH111	OP	---	No	No	P	MH604001	Hyb	---	No	No	H
CWH116	Hyb	---	No	No	P	MH903383	Hyb	---	No	No	H
CWH630	OP	RR	No	Yes	P	¹ OP = open pollinated, Hyb = hybrid.					
CWH631	OP	RR	No	Yes	P	² SD = Semi-dwarf, SU = sulfonyleurea carryover tolerant, RR = glyphosate resistant.					
CWH632	OP	RR	No	Yes	P	³ Sd Trt = Seed treatment (H = Helix Xtra, P = Prosper 400).					
CWH633	OP	RR	No	Yes	P						
CWH686	OP	RR	No	Yes	P						
CWH687	OP	RR	No	Yes	P						
CWH688	OP	RR	No	Yes	P						
DKW13-69	OP	RR	Yes	Yes	P						
Virginia State University Agricultural Experiment Station Petersburg, VA 23806 Dr. Harbans Bhardwaj (804-524-6723) Virginia											
	OP	---	Yes	No	H						

Garden City, Kansas

Cooperator: John Holman
 Southwest Research-Extension Center,
 Kansas State University
 Planted: 9/14/2007 at 5 lb/a
 Harvested: 7/9/2008
 Irrigation: Date Inches
 10/1/2007 1.35
 10/30/2007 3.75
 4/8/2008 5.18
 5/15/2008 3.50
 6/5/2008 2.27
 Fertility: 10 lb 11-52-0 & 10 lb S in
 1"x1.5" band
 Elevation: 2888 ft Latitude: 37°99N
 Comments: Severe hail damage was noted
 in streaks across field from
 storm on 6/20/2008.

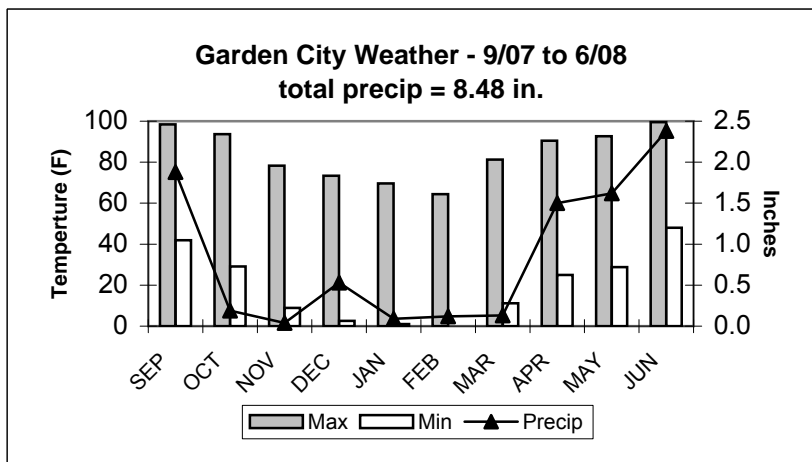


Table 2. Results from the 2008 national winter canola variety trial at Garden City, KS

Entry	Yield (lb/a)			Yield % of test avg. 2008	Fall		Spring		Height (inches)	Shatter (%)	Moisture (%)	Test weight (lb/bu)
	2008	2007	2-yr avg.		stand (0-10)	vigor (1-5)	stand (0-10)	vigor (1-5)				
KS4158	1611	---	---	155	6.2	4.0	6.2	4.3	55	5.0	8.0	46.9
Rally	1577	2482	2029	152	6.3	4.3	6.3	4.8	57	2.3	8.1	44.3
Kadore	1549	2432	1990	149	3.7	3.5	3.7	4.0	51	6.7	7.1	47.6
KS4022	1526	2466	1996	147	5.0	3.8	4.7	4.3	56	2.0	8.3	44.8
Virginia	1442	2954	2198	139	7.5	4.8	7.5	5.0	52	7.0	6.9	46.6
DSV07101	1426	---	---	138	8.5	4.7	8.3	5.0	55	3.3	8.7	43.5
MH604001	1395	3014	2205	135	6.0	4.3	5.7	4.5	53	10.0	8.8	46.2
DSV07100	1375	---	---	133	6.7	4.0	6.3	4.8	56	3.7	7.5	46.6
Sitro	1363	2885	2124	132	7.5	4.7	7.3	5.0	55	5.0	8.3	43.6
Satori	1360	2762	2061	131	6.2	4.3	5.7	4.3	54	6.7	7.1	46.2
Taurus	1357	3533	2445	131	6.0	4.2	6.0	4.7	56	8.3	9.2	45.7
KS4085	1338	2985	2161	129	7.5	4.0	7.5	5.0	57	6.7	8.1	46.8
KS3254	1285	2104	1694	124	6.3	4.0	6.2	4.5	55	3.3	7.6	45.9
DSV07102	1285	---	---	124	6.7	4.2	6.5	5.0	55	3.7	9.2	46.8
Hybristar	1272	2994	2133	123	5.8	4.0	5.0	4.8	54	8.3	7.5	44.0
ARC98007	1257	2524	1890	121	6.2	4.0	6.0	4.8	55	6.7	7.9	45.3
Baldur	1256	3651	2453	121	6.0	4.2	6.0	4.8	55	10.0	9.9	46.5
KS7436	1242	2836	2039	120	5.3	3.7	5.3	4.7	55	6.7	7.2	47.0
KS3132	1208	2893	2050	117	7.8	4.5	7.5	4.5	58	13.3	8.3	44.1
ARC97018	1201	3000	2101	116	6.3	4.2	7.2	4.8	58	8.3	7.5	45.6
ARC2180-1	1198	3214	2206	116	6.0	4.2	5.7	5.0	56	8.3	7.4	46.8
CWH116	1162	---	---	112	6.2	3.8	6.2	4.5	53	5.0	8.7	43.1
KS9135	1154	2852	2003	111	5.7	4.2	5.5	4.8	58	6.7	7.0	46.5
Forza	1112	---	---	107	5.5	4.0	5.0	4.5	52	6.7	10.3	41.6
46W14	1101	---	---	106	8.2	4.8	8.0	4.8	54	10.0	7.2	44.6
CWH095	1086	---	---	105	4.7	3.5	4.7	4.3	52	3.3	6.6	44.4
Kronos	1074	2887	1980	104	4.0	4.0	4.0	4.8	56	6.7	8.6	46.4
CWH081	1043	---	---	101	4.5	3.5	4.3	4.0	50	9.0	6.7	44.6
CWH687	1034	---	---	100	4.7	3.8	4.7	4.8	49	20.0	7.0	46.1
ARC98015	1015	2698	1857	98	6.3	4.2	6.2	5.0	58	10.7	9.2	44.4
Flash	1010	2621	1816	98	6.2	4.2	5.7	5.0	58	1.7	8.6	43.1
KS3077	1004	2492	1748	97	6.8	4.5	6.8	4.8	58	14.3	9.4	44.4
NPZ0791RR	998	---	---	96	7.0	4.2	6.3	4.2	55	5.0	9.1	41.4
ARC97019	993	3177	2085	96	5.5	4.0	5.5	5.0	57	7.0	8.2	43.1
CWH111	981	---	---	95	7.0	4.3	7.0	5.0	48	21.7	9.3	41.0
Hornet	949	2446	1697	92	6.0	3.8	6.0	5.0	56	3.3	8.8	44.3
Visby	925	---	---	89	5.7	3.7	5.7	5.0	51	23.3	7.0	43.9
KS3302	904	3155	2029	87	7.3	4.3	7.3	4.7	54	16.7	8.7	42.5
NPZ0391RR	894	3162	2028	86	7.5	4.2	7.3	4.3	53	5.0	7.4	44.5
CWH688	878	---	---	85	5.5	3.8	5.3	4.7	51	16.7	8.6	46.2
KS3074	812	1990	1401	78	8.7	4.3	8.3	4.3	53	23.3	7.3	42.8
DKW13-69	807	2683	1745	78	5.5	4.0	5.2	4.0	53	10.0	7.9	43.0
Ceres	782	2983	1883	75	6.8	3.8	6.0	4.3	54	13.3	8.3	47.6

Table 2, continued. Results from the 2008 national winter canola variety trial at Garden City, KS

Entry	Yield (lb/a)			Yield % of	Fall	Fall	Spring	Spring	Height (inches)	Shatter (%)	Moisture (%)	Test weight (lb/bu)
	2008	2007	2-yr avg.	test avg. 2008	stand (0-10)	vigor (1-5)	stand (0-10)	vigor (1-5)				
45D03	780	---	---	75	5.7	4.0	5.3	4.0	50	21.7	6.9	46.6
CWH631	770	---	---	74	5.3	3.7	5.3	4.7	52	36.7	7.1	44.1
Abilene	753	2947	1850	73	6.0	3.7	5.3	4.8	52	15.0	8.2	43.3
CWH630	746	---	---	72	4.8	3.7	4.8	4.5	52	53.3	6.5	46.6
CWH686	742	---	---	72	5.8	4.2	5.8	5.0	52	36.7	8.1	40.8
Wichita	737	2725	1731	71	6.0	3.8	6.0	4.7	51	45.0	6.8	44.5
BSX-501	735	---	---	71	5.2	3.8	5.2	4.3	53	11.7	9.3	42.6
MH903383	704	---	---	68	6.7	4.3	5.8	4.8	50	25.0	7.1	44.8
KS3018	702	3007	1854	68	6.5	4.3	6.5	5.0	54	25.0	7.1	42.9
46W99	602	---	---	58	5.8	3.8	5.3	5.0	52	31.7	9.7	47.0
CWH632	602	---	---	58	4.2	3.3	4.2	4.7	50	48.3	7.5	41.6
CWH633	592	---	---	57	6.5	3.7	6.5	4.7	50	40.0	7.6	41.7
Sumner	579	2912	1745	56	4.8	3.7	4.8	4.8	50	48.3	7.8	41.3
BSX-567	478	---	---	46	5.0	3.3	5.0	4.0	51	28.3	7.3	41.7
HyClass107W	324	---	---	31	2.7	3.0	2.7	4.0	48	11.7	7.2	43.1
Jetton	---	3265	---	0	0.8	2.0	0.5	3.0	43	10.0	0.0	0.0
Plainsman	---	2065	---	0	1.0	1.8	0.7	3.5	44	15.0	0.0	0.0
Mean	1036	2811	1924	---	5.8	3.9	5.7	4.6	53	14.6	8.1	44.7
CV	26	17	---	---	24.9	11.1	25.1	8.0	5	84.0	16.7	5.2
LSD (0.05)	429	851	---	---	2.4	0.7	2.3	0.6	4	19.9	NS	3.8

Bold - Superior LSD Group - Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

Hesston, Kansas

Cooperator: Mark Claassen
 Harvey County Experiment Field, Kansas State University
 Planted: 9/13/2007 at 5 lb/a in 9-in. rows
 Harvested: 6/23/2008 & 6/25/2008
 Herbicides: Treflan 1.5 pt/a
 Insecticides: none
 Fertility: 30-30-0 N-P-K fertilizer in the fall
 80-0-0 N-P-K fertilizer in the spring
 Previous Crop: Canola
 Soil Type: Ladysmith silty clay loam
 Elevation: 1499 ft Latitude: 38°08N
 Comments: Winter injury to crowns caused some plots to severely lodge at maturation.

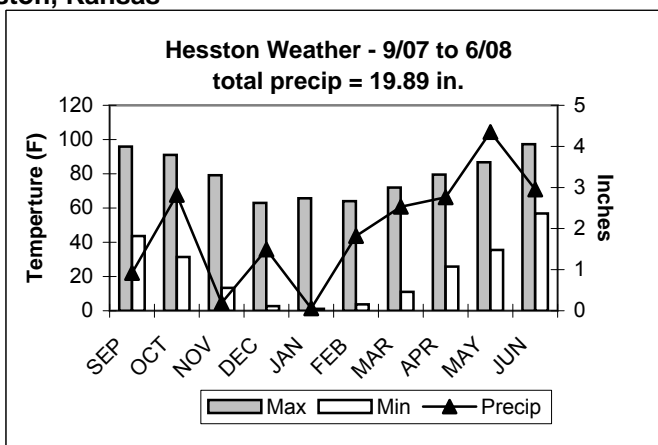


Table 3. Results from the 2008 national winter canola variety trial at Hesston, KS

Entry	Yield (lb/a)			Yield % of test avg. 2008	Fall stand (0-10)	Bloom (day)	Height (inches)	Lodging (%)	Shatter (%)	Moist ure (%)	Test weight (lb/bu)
	2008	2007	2-yr avg.								
KS3132	1365	1421	1393	168	7.7	114	47	0.3	6.7	10.5	49.5
KS4022	1364	961	1162	168	5.3	116	47	0.3	1.0	13.1	48.8
KS3077	1295	1156	1225	159	7.3	116	47	12.0	1.0	10.7	52.1
KS4085	1258	908	1083	155	8.3	114	47	3.3	1.0	10.2	51.2
KS4158	1241	---	---	153	7.7	113	44	8.7	2.0	9.5	51.9
KS3254	1239	1617	1428	152	8.0	116	44	0.7	0.3	11.5	51.6
KS9135**	1199	1260	1229	148	6.7	115	47	28.3	1.0	11.0	51.4
CWH095	1178	---	---	145	7.7	114	40	0.3	5.3	9.6	50.6
Virginia	1174	815	995	144	8.0	115	40	3.7	0.7	9.4	51.5
Wichita	1166	1010	1088	143	8.0	114	42	10.0	3.7	9.0	49.1
Kadore	1116	1600	1358	137	7.0	114	39	10.7	0.7	10.9	52.3
KS3074	1079	1346	1213	133	7.3	114	42	26.7	0.3	10.2	52.0
DSV07100	1066	---	---	131	7.3	114	43	7.0	1.7	9.9	51.8
KS3302	1040	813	926	128	7.7	113	43	12.0	2.3	9.7	50.6
NPZ0391RR	1029	1121	1075	127	4.7	117	41	8.3	0.3	11.1	50.7
ARC97019	1012	769	891	125	6.7	114	45	31.7	4.0	10.0	51.5
CWH081	995	---	---	122	8.0	114	42	3.3	2.3	9.5	48.9
KS7436	975	789	882	120	6.7	116	43	26.7	3.7	10.3	51.1
BSX-501	944	---	---	116	6.7	115	45	7.0	2.0	9.9	52.8
ARC2180-1	937	867	902	115	7.7	114	43	50.0	2.3	10.4	51.6
ARC97018	934	886	910	115	5.7	114	45	30.0	4.0	11.2	49.1
CWH630	923	---	---	114	4.3	115	42	7.8	1.0	10.2	49.7
NPZ0791RR	900	---	---	111	7.0	114	41	3.3	6.7	10.6	47.4
DSV07102	897	---	---	110	8.3	113	43	15.0	11.7	9.3	51.4
Ceres	855	1299	1077	105	7.7	114	41	30.1	5.0	9.0	50.2
46W99**	842	---	---	104	7.7	113	43	73.3	5.0	8.3	53.0
Baldur	817	321	569	101	6.7	113	41	49.7	5.5	10.0	52.0
KS3018**	813	943	878	100	7.7	113	44	36.7	3.7	9.0	51.1
CWH686	812	---	---	100	5.3	114	41	31.7	2.3	9.1	52.2
ARC98015	788	857	823	97	7.0	114	42	33.7	4.3	9.8	51.3
ARC98007**	786	738	762	97	7.7	115	45	33.7	2.7	9.5	52.1
CWH632	784	---	---	96	5.3	114	41	33.3	3.7	8.9	48.1
DKW13-69	753	898	826	93	6.3	114	39	26.7	3.7	11.4	48.3
Forza	750	---	---	92	7.7	113	37	75.0	2.3	12.2	48.0
Flash	740	215	477	91	7.3	116	43	47.2	0.5	11.8	51.0
CWH687	739	---	---	91	4.7	116	38	23.3	1.0	9.6	49.5
Abilene	734	711	723	90	5.7	.	48	26.7	5.3	10.4	50.3
BSX-567	725	---	---	89	5.3	116	42	32.8	5.5	9.6	50.8
DSV07101	689	---	---	85	8.3	113	41	7.0	17.0	8.6	52.8
Taurus	668	357	513	82	6.0	114	39	15.7	1.0	11.2	50.7
CWH633**	644	---	---	79	8.0	113	43	73.3	11.7	9.1	49.0
Sumner	638	809	723	78	5.3	114	43	13.3	10.0	9.7	49.0
Visby	597	---	---	74	6.0	113	39	53.3	1.3	10.7	50.8
CWH688**	571	---	---	70	6.3	114	38	73.3	0.5	7.7	49.7

Table 3, continued. Results from the 2008 national winter canola variety trial at Hesston, KS

Entry	Yield (lb/a)			Yield % of	Fall	Bloom	Height	Lodging	Shatter	Moist	Test
	2008	2007	2-yr avg.	test avg.	stand	(day)	(inches)	(%)	(%)	ure	weight
	2008	2007	2-yr avg.	2008	(0-10)	(day)	(inches)	(%)	(%)	(%)	(lb/bu)
Kronos	553	459	506	68	6.3	114	41	35.3	34.0	10.7	51.7
CWH116	537	---	---	66	6.3	115	39	38.7	24.0	8.5	50.8
Rally	536	502	519	66	6.3	115	43	36.7	0.7	10.7	48.8
MH903383	518	---	---	64	7.7	114	38	38.7	5.0	9.4	49.8
Satori	472	706	589	58	7.0	114	37	58.3	22.5	7.7	50.5
MH604001	454	935	695	56	8.0	113	39	65.0	4.0	9.3	49.5
45D03**	434	---	---	53	8.0	113	35	88.3	1.0	9.7	51.5
Hornet	434	488	461	53	8.0	113	45	70.0	2.0	10.0	48.8
Sitro	417	404	411	51	8.3	113	41	65.0	1.0	9.6	52.4
46W14	403	---	---	50	6.3	114	37	80.0	1.0	10.8	49.7
CWH631**	374	---	---	46	7.7	113	42	88.7	3.7	8.4	51.2
CWH111	365	---	---	45	8.3	114	34	73.3	5.7	8.7	48.7
HyClass107W	362	---	---	45	5.7	115	41	43.3	2.0	8.3	51.4
Hybristar	257	405	331	32	7.0	114	36	86.7	0.7	9.9	51.4
Plainsman	---	1205	---	---	1.3	116	37	99.4	0.0	11.5	---
Jetton	---	866	---	---	1.3	---	---	---	---	---	---
Mean	813	703	---	---	6.8	114	42	34.5	4.5	9.9	50.6
CV	32	34	---	---	18.9	1	7	83.9	239.4	13.2	4.9
LSD (0.05)	427	383	---	---	2.1	2	5	46.9	NS	2.1	4.0

Bold - Superior LSD Group - Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other. **Plot in third rep. severely lodged by heavy rain. Entries showing crown rot from winter injury were severely lodged.

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