K-STATE Kansas State University

2004

KANSAS PERFORMANCE TESTS WITH WINTER WHEAT VARIETIES

REPORT OF PROGRESS 930

Kansas State University
Agricultural Experiment Station
and Cooperative Extension Service

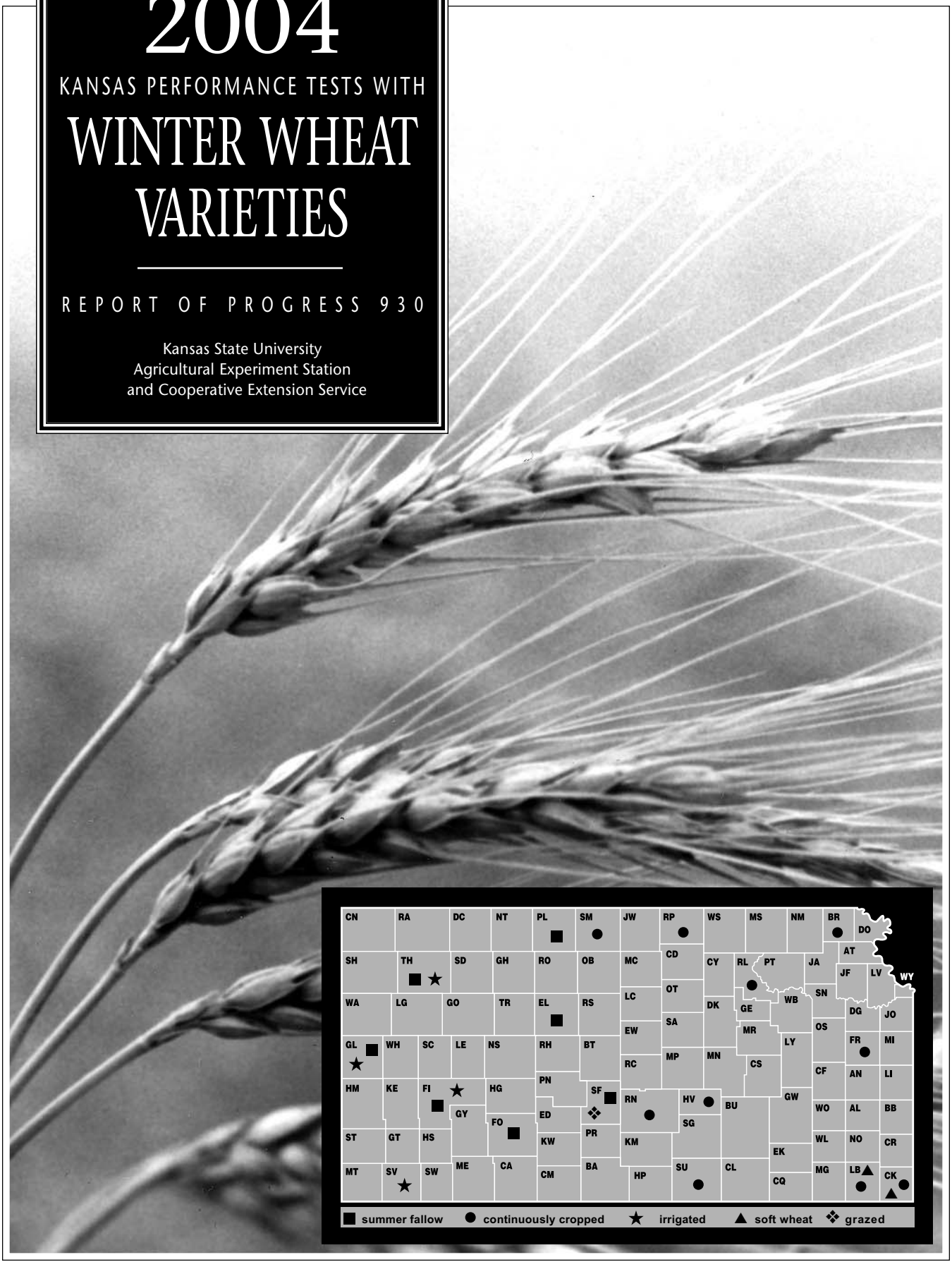

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Table 1. Private entrants in the 2004 Kansas Wheat Performance Tests.

AgriPro	***Drussel***	***MFA***	***Pioneer***
AgriPro Wheat, Inc.	Drussel Seed and Supply	MFA Incorporated	Pioneer Hi-Bred, Intl., Inc.
6515 Ascher Rd	2197 W Parallel Road	201 Ray Yound Dr.	390 Union Blvd, Suite 500A
Junction City, KS 66441	Garden City, KS 67846	Columbia, MO 65201	Lakewood, CO 80228
785-210-0218	620-275-2359	573-876-5285	800-258-5604
AGS	***Farmer Direct***	***M-Pride***	***Polansky***
AGSouth Genetics, LLC	Am. White Wheat Prod Assn	Midwest Premium Genetics	Polansky Seed
PO Box 398	PO Box 326	523 S Main, PO Box 688	PO Box 306, 2729 M St
Newton, GA 39870-0398	Atchinson, KS 66002	Concordia, MO 64020	Belleville, KS 66935
229-881-7455	913-367-4422	800-662-1150	785-527-2271
AGSECO	***General Mills***	***NK***	***Rinck***
DeLange Seed	General Mills Ag. Research	Syngenta Seeds	Rinck Seed Farm, Inc.
PO Box 7	1201 North 4th	PO Box 1240	PO Box 141, 720 Road 29
Girard, KS 66743-0007	Le Sueur, MN 56058	Winterville, NC 28590	Niotaze, KS 67355
620-724-6223	507-665-3515	252-746-3004	620-673-5343

Contribution No. 05-27-S from the Kansas Agricultural Experiment Station

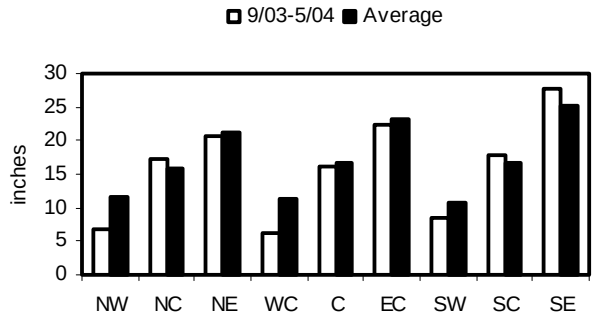
2004 WHEAT CROP REVIEW

Crop Development

The rate of crop development reflected opposite patterns in the fall and spring. Planting occurred at a pace similar to that for 2003, but emergence lagged the 2003 rate by as much as a week. Jointing and heading were slightly ahead of last year and the 5-year average, but coloring and ripening were far ahead of previous years. Harvest started out roughly a week before average, but rain delays caused the rate of harvest to fall behind average by early July. The last fields were harvested far later than average.

The condition of the 2004 wheat crop responded to a wide range of environmental conditions. Crop condition declined gradually from mid-October, when 60% was classified as good or excellent, to mid May, when 35-40% was classified as good or excellent. Much of the decline in condition was related to drought stress, especially in western Kansas. The northwest, west-central, and southwest crop-reporting districts received 58%, 55%, and 79% of their long-term average September-May precipitation, respectively (Figure 1). The central and eastern districts received close to or above their average September-May precipitation.

Figure 1. September-May precipitation by crop reporting district



Wind, winter kill, and typical disease stress also contributed to the decline in crop condition. Condition of the crop improved in mid-March as the crop responded to significant, widespread precipitation, but resumed its downward trend soon after. In late May, the effects of the severity of leaf diseases, primarily leaf rust and powdery mildew, in central and eastern Kansas and May freezes in the west became evident, dropping the portion of the crop in the good to excellent category to around 25%. Crop condition rebounded slightly in June.

There were several freezes in May. The first, on May 3 and 4, was sporadic in coverage. With little wheat at a vulnerable stage, damage was not wide-spread. There were spotty reports of freezing temperatures a week later. Again, damage was relatively light. On May 13 to 14, freezing temperatures were reported from Colby to Elkhart and eastward to Meade, Gray, and Lane counties. Temperatures reached as low as 27° F, and the duration of sub-freezing temperatures lasted from 1 to 5 hours. Much of the wheat was at its most vulnerable stage, so damage was widespread and severe.

(*Crop-Weather* reports, Kansas Ag. Statistics and Mary Knapp, KSU Weather Data Library).

Diseases

Several diseases of wheat were prevalent in Kansas in 2004. Early in the spring season, the incidence and severity of *powdery mildew* was at a 20-year high for Kansas. A similar epidemic occurred in Oklahoma. Although most varieties became diseased, Jagalene and Overley seemed to be the most affected. Some fields were treated with fungicide to stop the powdery mildew before the grain-fill period.

Wheat Steak Mosaic Virus (WMSV) was very severe in many fields in western Kansas. In some fields, yield loss was 50% or more. The wide prevalence and severity of WSMV could be traced in many instances to the large populations of volunteer wheat and the very large populations of the wheat curl mite. It is important to clean up fields that have volunteer wheat and other weeds that support the virus and mites at least 10 days before planting.

High Plains Virus (HPV) was detected in a small number of fields, mostly in western Kansas. In those fields that had both HPV and WSMV, yields were significantly reduced. A new strain of HPV was described in wheat from an undetermined number of fields north of I-70. The significance of this new strain was not determined.

Stripe rust inoculum was detected throughout Kansas, but significant disease developed only in a few fields south of I-70. The high temperatures that occurred in mid May likely stopped epidemic development for most of the state.

Take all disease of wheat was prevalent in Kansas, with many fields experiencing some yield loss. High soil moisture in the fall and a very early spring, along with large weed populations, may account for the take all in the affected fields. It was not possible to determine if any varieties were more affected by take all than others.

In several pivot-irrigated fields where wheat was low-till planted into corn stubble, severe *head scab* occurred. The impact of overhead irrigation was evident in the affected fields; the pivot corners had much less incidence and severity of scab. Jagger and Overley were severely affected in these fields.

Leaf rust developed rapidly in June in central and eastern Kansas at severities great enough to result in yield loss. Severe leaf rust developed on most varieties, even those that were previously rated as resistant. This indicates that many races of the rust pathogen were present this year. Similar observations were made in other states.

Reports were received of other diseases that likely had a less dramatic effect on yield than those just mentioned. Scattered across the state, some fields had root and crown rot develop in patches of various sizes. Although the plants survived, it is possible that yield was reduced. *Barley*

Yellow Dwarf Virus occurred in many fields, but occurred in damaging amounts only in a few fields. *Loose smut* was prevalent over much of western and southern Kansas at extents greater than would be predicted for a normal year. *Common Bunt* was reported from some areas at harvest time. Those who are saving seed from a field that has either loose smut or common bunt should consider using a seed-applied fungicide before planting that seed in the fall.

(KSU Extension Plant Pathologist, James Stack).

Insects

Army cutworm infestations were quite extensive throughout central Kansas, from the Oklahoma border to Nebraska. Many acres were treated in late fall and early winter because the relatively mild fall allowed this pest to continue feeding longer than normal. Many fields not treated in the fall were treated in late winter or early spring.

A few Hessian fly infestations were reported in the spring in south-central Kansas. This pest can be managed fairly well with resistant varieties, destruction of volunteer plants, and planting after the fly-free date. But the fly-free date probably was later than average because of the mild fall.

Scattered infestations of wheat head armyworms were noted from south-central and southwest Kansas, but populations were not as extensive as those reported in 2003. True armyworm infestations were reported from eastern Kansas, but these were noted after the wheat had passed the soft-dough stage and treatment was not practical.

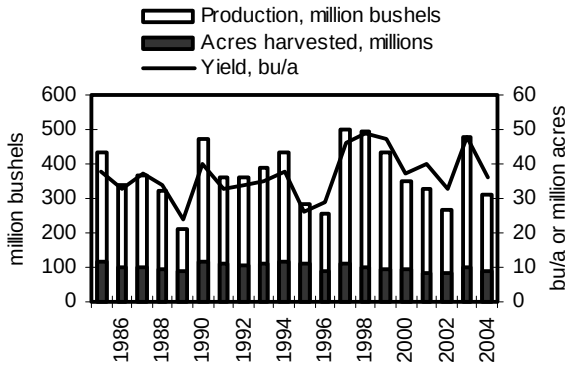
(KSU Extension Entomologist, Jeff Whitworth).

Harvest Statistics

The Kansas Agricultural Statistics' July 12 estimate of the 2004 crop was 313.2 million bushels from 8.7 million acres with a 36 bushels/acre yield average. These are significant decreases from last year's near-record production. Only 3 years in the past 10 had less statewide production.

(July 12, 2004, C*ROPS* report, Kansas Ag. Statistics, Topeka).

Figure 2. Historical Kansas wheat production

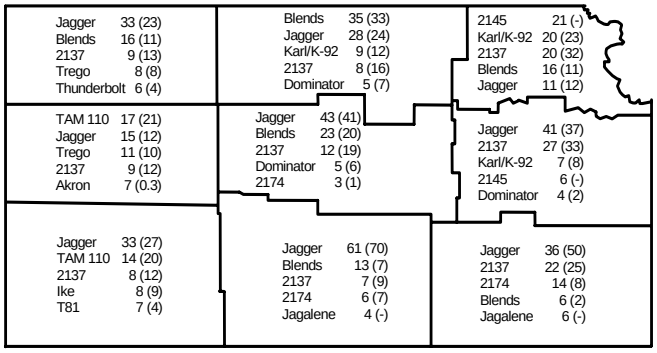


Acreage Distribution

The domination of Jagger and 2137 on Kansas wheat acres dropped slightly in 2004. Those two varieties occupied 49.5% of the state's wheat acreage, compared with 58.5% in 2003. The acreage of blends continues to increase, making up 15.2% of the 2004 planted acres.

(February 4, 2004, *Wheat Variety*, Kansas Ag. Statistics, Topeka).

Figure 3. Leading wheat varieties in Kansas
Percentage of seeded acreage for 2004 and (2003) crops



2004 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.

Varieties Included in Tests

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 2004 private entrants are listed in Table 1. Twelve entrants provided a total of 33 varieties for testing.

Table 13 describes the characteristics of seed submitted for testing. Seed quality, including such factors as size, purity, and germination, can be important in determining the performance of a variety. Wheat seed used for entries in the Kansas Crop Performance Tests is prepared professionally and usually meets or exceeds Kansas Crop Improvement Certification standards. Performance of a given variety or hybrid 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 Affecting Tests

Locations of test sites are shown on the map on the front cover. Four locations had to be abandoned. One location had excessive volunteer wheat, even after repeated irrigations and tillage passes the previous summer. Another was lost because of the mid-May freeze, followed by a mid-June hail storm. A third was lost because June and July rains eventually flattened the test and damaged the grain. The fourth location was severely damaged by hail in mid-June. Site descriptions and management practices for each site are summarized in Table 3 on page 5.

Test Results and Variety Characterization

Results from Kansas tests are presented in Tables 4 through 12. Yields are reported as bushels per acre (60 pounds per 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. Multi-year averages are presented for those varieties entered more than one year. One-year or one-location results can be misleading because of the possibility of unusual weather or pest conditions.

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 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.

Coleoptile length (Table 13) predicts the relative ability of a cultivar to emerge from deep plantings through noncrusted soil. Maximum coleoptile elongation of a variety is influenced heavily by soil temperature. If deep planting is needed because of dry soil late in the planting season, choice of variety will have minimal effects on stand establishment. The same can be said for plantings made during optimum times when soil temperature is already less than 65° F. Plantings made in late August or early September, when soil temperature is high, will be the most vulnerable to poor emergence because of coleoptile length. If plantings must be made deeper than 3.5 in. when soil temperature is high, use a variety that has a long coleoptile.

Graphical Performance Summaries

Figures 4-10 summarize the performance of each variety standardized to the average of two check varieties: Jagger and 2137, the two most popular varieties in 2004. The number at the base of each bar indicates the number of direct comparisons with the check varieties. In general, as the number of comparisons increases, the reliability of a value increases. Values that differ significantly from the average of the two check varieties are indicated by a + or – at the end of the bar.

Grazed Test

Table 11 presents results from a grazed test at St. John. This test was designed to assess the impact of grazing on grain yield and did not compare forage production. The plots were grazed from December 8 through March 16 at a grazing intensity of 1 head/acre. Cattle weighed 550 lb at start of grazing in December and gained an average of 2.7 lb/day over the entire grazing period. Grazing was uniform across all varieties. Cattle were removed just before jointing of the wheat. Although grain yields were much lower for this test than for the ungrazed test at this location, the value of the combined beef and grain production was roughly equal to the value of the grain from the ungrazed test.

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

Variety[1]	% of Kansas seeded acreage 2004 [1]	Relative[2]										Relative milling and baking quality[4]	Resistance or tolerance to:[5]													
		Test weight	Straw strength	Maturity	Height[3]	Coleoptile length	Shattering	Winter hardiness	Al Tolerance	Sprout Tolerance	Protein content[3]		Soilborne mosaic	Spindle streak mosaic	Wheat streak mosaic	Barley yellow dwarf	Leaf rust	Stem rust	Stripe rust	Speckled leaf blotch	Glume blotch	Tan spot	Powdery mildew	Head scab	Hessian fly	Russ. wheat aphid
Jagger	40.9	4	4	1	5	6	5	6	3	3	3	EX*	2	2	4	7	8	3	1	3	6	3	7	7	9	9
2137	8.6	4	1	3	5	7	5	3	2	2	7	AC	1	5	4	6	7	7	8	5	7	4	4	8	5	9
TAM 110	4.2	3	2	1	5	5	2	--	8	3	7	AC	9	7	5	8	9	3	8	6	6	7	1	8	9	8
Trego+	3.5	3	4	3	4	6	2	2	8	5	7	AC	2	4	5	7	3	2	8	7	5	7	8	9	7	9
Jagalene	3.0	3	3	2	4	6	4	5	4	2	4	AC	2	--	4	--	5	2	3	--	--	7	7	--	8	9
2174	2.8	3	1	3	4	5	3	4	5	1	3	AC	1	5	7	5	6	8	5	4	7	5	2	6	9	9
Karl/Karl 92	2.3	3	4	1	3	7	3	3	9	3	3	EX*	1	3	9	8	9	6	3	5	3	3	3	6	9	9
Ike	2.0	3	4	4	6	7	2	3	8	2	3	AC	1	5	9	6	9	3	6	8	6	7	6	6	3	9
T81	1.8	4	--	2	4	7	--	--	--	--	8	AC	8	4	6	7	7	3	3	7	--	6	1	--	8	9
2145	1.5	4	2	3	3	6	6	3	8	3	3	AC	1	--	9	--	6	3	4	4	--	8	8	8	5	9
Dominator	1.5	4	3	4	2	8	7	3	8	5	3	AC	1	1	7	6	8	3	6	5	4	4	4	7	4	9
Stanton	1.4	4	3	3	5	6	2	2	--	2	4	AC	8	--	5	8	2	2	6	7	--	--	--	7	6	3
Thunderbolt	1.4	2	--	3	7	6	6	--	7	2	3	AC	8	7	5	7	7	8	5	--	--	6	7	7	9	9
TAM 107	1.3	4	2	1	4	5	2	2	9	3	6	LD	8	7	5	8	9	3	8	8	6	6	1	6	9	7
Akron	0.9	3	5	4	6	6	3	3	--	2	7	AC	9	9	9	9	8	3	4	9	7	7	1	6	8	9
Cutter	0.7	4	4	3	5	5	5	3	--	3	4	AC	3	--	4	--	3	2	2	7	--	6	7	8	8	9
NuFrontier+	0.6	4	3	4	6	5	3	--	--	7	5	LD	--	--	--	--	9	--	--	--	--	7	--	--	7	--
Coronado	0.5	3	1	2	3	8	4	5	3	--	3	AC	1	3	6	6	7	3	6	6	6	6	4	9	5	9
Larned	0.4	4	5	4	9	3	3	3	8	3	4	AC	9	8	9	9	8	2	2	8	8	9	5	5	3	9
TAM 105	0.4	4	4	3	--	--	--	--	--	3	--	LD	8	--	6	--	9	8	8	7	--	9	5	--	--	7
2163	0.3	6	1	3	3	7	6	4	2	--	7	LD	1	4	4	6	7	4	7	5	8	4	2	8	3	9
Lakin+	0.3	4	3	3	5	7	3	2	--	7	7	AC	2	--	5	6	9	7	8	7	--	7	--	5	9	--
Ogallala	0.3	2	2	3	2	7	6	4	5	3	2	EX	9	8	5	7	5	3	6	5	6	6	6	--	9	9
Above	0.2	4	5	1	3	5	3	3	--	3	7	AC	9	--	5	--	9	3	8	6	--	7	1	--	8	9
Alliance	0.2	4	5	4	6	8	3	3	--	4	8	AC	9	7	9	9	8	2	3	7	--	7	--	5	3	9
NuHorizon+	0.2	4	1	5	3	5	3	--	--	7	4	AC	--	--	--	--	9	--	--	--	--	5	--	--	9	--
Platte+	0.2	4	--	4	4	--	--	--	--	--	--	AC	--	--	--	--	4	--	8	--	--	--	--	--	8	9
Scout / S66	0.2	4	6	4	9	3	3	3	8	3	3	AC	9	7	7	9	8	3	1	7	9	9	5	--	9	9
Tomahawk	0.2	4	3	3	5	6	3	2	8	3	4	AC	1	4	8	8	4	3	8	8	8	4	3	9	9	9
Venango	0.2	3	2	4	5	7	--	--	--	--	3	AC	1	--	5	--	5	5	8	9	--	6	6	--	8	9
Vista	0.2	4	6	5	2	8	3	2	7	5	6	AC*	8	7	9	7	7	6	2	5	6	8	4	6	1	9
Blends	15.2																									
Other White	0.1																									
Other Red	2.5																									
Other Soft	0.0																									
+Hard white variety	Scale:	1=Best 9=Poor	1=Best 9=Poor	1=Early 9=Late	1=Short 9=Tall	1=Long 9=Short	1=Best 9=Poor	1=Best 9=Poor	1=Best 9=Poor	1=Best 9=Poor	1=Best 9=Poor		Scale: 1=Most resistant/tolerant 9=Least resistant/tolerant													

[1] Varieties and percentage seeded acreage from the Feb. 4, 2004, Wheat Variety survey, KS Ag. 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, Ray Lamond, and Kraig Roozeboom, KSU Agronomy.

[3] Summary of crop performance test results from recent years.

[4] Ratings by Bob Bennet, KSU Grain Science and Industry, using inputs from the U.S. Grain Marketing and Production Research Center, and industry. See also "Milling & Bread-baking Qualities of Hard Winter Wheat Varieties".

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

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

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

-- = Inadequate information or conflicting data.

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

[5] Ratings by Allan Fritz, Joe Martin, Hays; W.W. Bockus, James Stack, KSU Plant Pathology. Final ratings and descriptions of disease and insect pests are available in "Wheat Variety Disease and Insect Ratings 2004".

Table 3. Wheat Performance Test site descriptions and management in 2004.

Region / Location	Soil / crop	N	P	K		Plant-harvest	Conditions
Northeast							
Bunck Seed Farms	Grundy silty clay loam	75	--	--	Fall	N/A - Abandoned	Hail in mid-June caused roughly 85% of the heads to be broken off or completely shattered.
Everest (EV)	Corn, 2003	--	20	--	Spring	90 lb/a	
Ashland Agronomy Farm	Reading silt loam	50	--	--	Fall	N/A - Abandoned	Test looked good in early June; frequent, ongoing rain delayed harvest; all plots lodged and sprouted.
Manhattan (MA)	Oats, 2003	50	--	--	Spring	75 lb/a	
Southeast							
EC KS Experiment Field	Woodson silt loam	8	32	16	Fall	10/8/2003 - 6/24/2004	Good planting conditions, fall growth, and tillering; mild winter; late leaf diseases (LR, PM, SLB, TS).
Ottawa (OT)	Soybean, 2003	80	--	--	Spring	1200000 seeds/a	
Farmer's field	Parsons silt loam	80	50	50	Fall	10/29/2003 - 6/16/2004	Wet at planting, favorable winter, wet spring, leaf diseases and BYD, waterlogged soils reduced yields.
Columbus (CL)	Soybean, 2003	--	--	--	Spring	75 lb/a	
SE Agric Res Ctr	Parsons silt loam	80	50	50	Fall	10/21/2003 - 6/15/2004	Wet at planting, favorable winter, wet spring, moderate to severe leaf diseases (e.g. septoria), severe BYD.
Parsons (PA)	Soybean, 2003	--	--	--	Spring	75 lb/a	
Southeast - Soft							
Farmer's field	Parsons silt loam	80	50	50	Fall	10/29/2003 - 6/16/2004	Wet at planting, favorable winter, wet spring, leaf diseases and BYD, waterlogged soils reduced yields.
Columbus (CL)	Grain sorghum, 2003	--	--	--	Spring	75 lb/a	
SE Agric Res Ctr	Parsons silt loam	80	50	50	Fall	10/21/2003 - 6/15/2004	Wet at planting, favorable winter, wet spring, moderate to severe leaf diseases (e.g. septoria), severe BYD.
Parsons (PA)	Soybean, 2003	--	--	--	Spring	75 lb/a	
North Central							
NC KS Experiment Field	Crete silt loam	75	30	5	Fall	10/5/2003 - 6/24/2004	Dry fall and winter, hail in early summer, yields better than expected.
Belleville (BE)	Corn, 2002	--	--	--	Spring	90 lb/a	
Farmer's Field	Silt loam	75	20	--	Fall	10/4/2003 - 6/23/2004	Good planting conditions, dry winter, timely spring rains, light rust late in season.
Smith Center (SC)	Wheat, 2002	--	--	--	Spring	90 lb/a	
Farmer's Field	Silty loam	70	40	--	Fall	10/3/2003 - 6/22/2004	Poor seedbed, but good stands; dry winter and spring; light leaf rust late in the season.
Phillipsburg (PH)	Sorghum, 2002	--	--	--	Spring	90 lb/a	
South Central							
Harvey Co Expt Field	Ladysmith silty clay loam	90	32	--	Fall	10/23/2003 - 6/14/2004	Dry fall, good growth, wet March, dry April and May, flag leaves gone by end of May, rain delayed harvest.
Hesston (HE)	Soybean, 2003	--	--	--	Spring	60 lb/a	
SC KS Experiment Field	Ost silt loam	75	40	--	Fall	10/20/2003 - 6/25/2004	Good seeding and over-wintering conditions, leaf diseases (esp. PM, LR) reduced yields.
Hutchinson (HU)	Fallow, 2003	50	--	--	Spring	60 lb/a	
Max Kolarik Farm	Sandy loam	70	25	--	Fall	10/21/2004 - 6/16/2004	Good weed control, matured early, severe leaf rust and powdery mildew.
Caldwell (CA)	Wheat, 2003	--	--	--	Spring	60 lb/a	
Northwest Dryland							
Agric Res Ctr - Hays	Harney clay loam	60	--	--	Fall	10/1/2003 - 6/15/2004	Yields better than expected after dry fall and winter.
Hays (HA)	Wheat, 2002	--	--	--	Spring	45 lb/a	
NW Res-Ext Ctr	Keith silt loam	50	20	--	Fall	9/25/2003 - 6/25/2004	Dry winter, mid-May freezes, hail, wind, 100-degree temperatures during grain fill, rain delayed harvest.
Colby (CO)	Wheat, 2002	--	--	--	Spring	60 lb/a	
SW Res-Ext Ctr	Richfield silt loam	5	25	--	Fall	N/A - Abandoned	Abandoned - freeze in mid-May, hail in mid-June.
Tribune (TR)	Sunflower, 2002	60	--	--	Spring	55 lb/a	
Southwest Dryland							
Sandyland Expt Field	Sandy loam	68	46	--	Fall	10/24/2003 - 6/28/2004	Better yields than expected, rust and powdery mildew present late in season, yields not related to lodging.
St. John (SJ)	Sorghum, 2002	50	--	--	Spring	60 lb/a	
Farmer's Field	Silt loam	50	--	--	Fall	9/22/2003 - 6/13/2004	Looked outstanding in early May, dry May hastened maturation and drydown, yields better than expected.
Dodge City (DC)	Wheat, 2002	--	--	--	Spring	45 lb/a	
SW Res-Ext Ctr	Keith silt laom	60	--	--	Fall	9/19/2003 - 6/23/2004	Good stands, April freeze damaged early varieties, May freeze damaged some varieties.
Garden City (GC)	Wheat, 2002	--	--	--	Spring	45 lb/a	
Irrigated							
NW Res-Ext Ctr	Keith silt loam	110	--	--	Fall	N/A - Abandoned	Abandoned - too much volunteer wheat, even after repeated irrigations and tillage passes last summer.
Colby (CO)	Wheat, 2003	--	--	--	Spring	90 lb/a	
SW Res-Ext Ctr	Ulysses silt loam	10	46	--	Fall	9/19/2003 - 7/3/2004	Some damage from May 14 freeze, wet June delayed harvest.
Tribune (TR)	Wheat, 2002	120	--	--	Spring	80 lb/a	
SW Res-Ext Ctr	Keith silt loam	120	--	--	Fall	9/23/2003 - 6/25/2004	Excellent seeding conditions, minor freeze damage, harvest delayed by rain.
Garden City (GC)	Soybean, 2002	--	--	--	Spring	75 lb/a	
Jim Kramer Farm	Richfield sandy loam	50	30	--	Fall	10/10/2003 - 7/14/2004	May freeze, rain delayed harvest, severe lodging and shattering.
Hugoton (HG)	Corn, 2003	50	--	--	Spring	90 lb/a	
Grazing Test							
Sandyland Expt Field	Sandy loam	68	46	--	Fall	9/25/2003 - 7/14/2004	Grazed 12/8 - 3/16 @ 1 head/acre, uniform grazing, little disease pressure.
St. John (SJ)	Sorghum, 2002	50	--	--	Spring	90 lb/a	

Table 4. 2004 SOUTHEAST Kansas Winter Wheat Performance Tests.

Brand / Name	yield (bu/a)				% of test average				multi-year avg (bu/a)						tw (lb/bu)				head (+/- Jagger)				height (in)			
	OT [1]	CL [2]	PA [3]	Av.	OT	CL	PA	Av.	-OT- 2yr	-OT- 3yr	-CL- 2yr	-CL- 3yr	-PA- 2yr	-PA- 3yr	OT	CL	PA	Av.	OT	CL	PA	Av.	OT	CL	PA	Av.
AgriPro																										
Cutter	64	44	52	53	96	91	93	94	71	64	40	--	52	44	57	57	56	57	4	6	5	5	37	36	42	38
Jagalene	70	48	56	58	105	98	101	102	78	69	50	--	60	53	60	57	55	57	4	4	4	4	35	33	40	36
W96-1311-01	80	56	69	68	121	114	124	120	--	--	--	--	--	--	59	56	58	58	3	3	3	3	37	36	38	37
AGSECO																										
Gem	70	49	53	57	106	100	95	101	76	68	50	--	59	49	59	56	54	56	5	5	5	5	34	34	39	35
Onaga	65	48	55	56	98	97	99	98	73	64	50	--	64	55	59	59	56	58	3	3	2	3	34	33	38	35
General Mills																										
(W) GM10006	68	36	52	52	102	74	94	91	--	--	--	--	--	--	59	58	55	57	6	8	7	7	31	28	37	32
Polansky																										
Dominator	70	53	59	60	105	108	106	106	--	--	--	--	--	--	60	58	54	57	2	2	1	1	34	31	38	34
Rinck																										
TAM 302	63	51	42	52	94	103	76	91	--	--	--	--	--	--	57	55	49	54	5	7	6	6	33	34	41	36
Public																										
2137	63	52	53	56	95	105	96	98	68	61	60	--	60	51	59	56	54	57	5	6	6	5	34	35	40	36
2145	65	46	61	58	98	95	110	101	70	63	50	--	66	55	60	57	56	58	5	5	4	4	32	32	37	34
2163	56	50	48	51	84	103	87	90	--	--	--	--	--	--	58	55	50	55	3	3	3	3	34	33	38	35
2174	70	50	54	58	106	101	98	102	75	65	60	--	65	56	59	58	57	58	4	4	5	4	35	34	39	36
Jag,2137	60	48	53	54	91	99	96	95	68	61	50	--	58	50	58	56	54	56	1	1	1	1	36	32	40	36
Jag,2137,Dom	65	47	53	55	98	96	96	97	73	64	50	--	60	52	59	57	53	56	2	2	1	2	35	32	39	35
Jagger	57	46	53	52	87	94	95	91	63	55	50	--	54	45	58	55	52	55	0	0	0	0	36	33	39	36
Karl 92	62	53	54	57	94	109	97	99	65	58	50	--	62	54	59	57	56	57	1	1	0	1	34	34	39	36
KS01HW163-4	72	52	65	63	109	105	117	110	--	--	--	--	--	--	60	57	57	58	4	5	4	4	35	35	41	37
KS02HW34	70	49	56	58	105	100	101	103	--	--	--	--	--	--	60	59	56	58	5	5	6	5	34	34	41	36
Ok102	74	52	65	64	111	105	118	112	--	--	--	--	--	--	58	57	57	57	4	5	4	4	32	32	39	34
Overley	64	51	56	57	96	105	102	100	72	--	60	--	60	--	59	56	54	56	0	0	-1	0	37	34	41	37
Average	66	49	55	57	66	49	55	57	71	63	50	--	57	49	59	57	55	57	3	4	3	3	34	33	39	36
CV (%)	5	4	8	6	5	4	8	6	--	--	--	--	--	--	1	1	2	1	0	1	1	1	3	4	4	4
LSD (0.05)*	5	3	6	3	8	6	11	5	--	--	--	--	--	--	1	1	2	1	1	1	1	1	1	2	2	1

[1] OT = Ottawa, KS, East Central Experiment Field, Franklin County

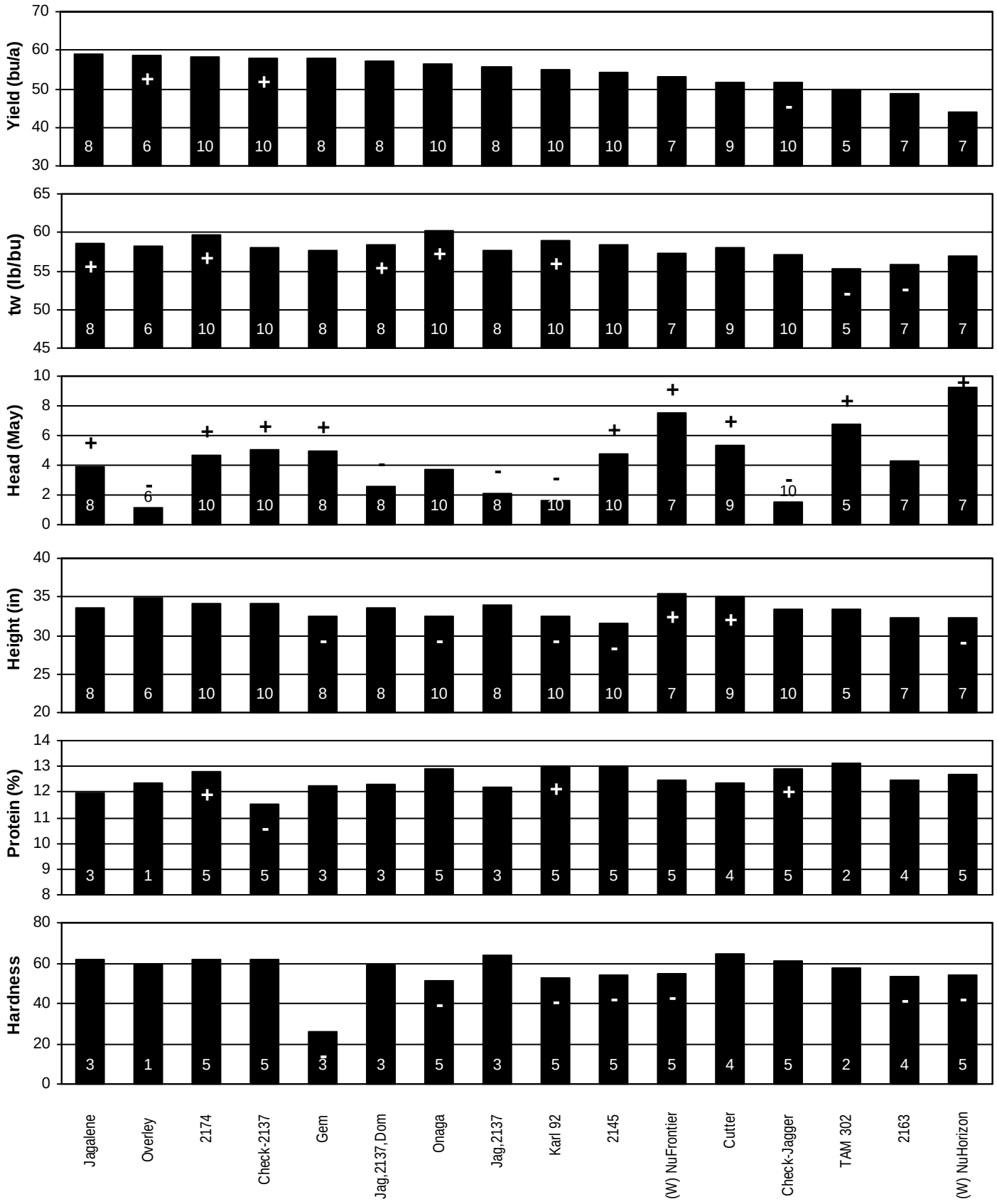
[2] CL = Columbus, KS, Cherokee County; moved from Pittsburg in Crawford County for 2004

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

(W) = Hard white wheat

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

Figure 4. Wheat variety performance summary, SOUTHEAST region, 2001-2004



+ = significantly greater than the average of the checks; - = significantly less than the average of the checks

Table 5. 2004 SOUTHEAST Kansas SOFT Winter Wheat Performance Tests.

Brand / Name	CL[1]	PA[2]	Av.	CL	PA	Av.	-CL- 2yr	-CL- 3yr	-PA- 2yr	-PA- 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)		
AGS																			
(S) 2000	62	70	66	101	106	103	67	52	76	--	56	56	56	3	3	3	36	41	38
(S) 2485	60	70	65	97	106	102	70	--	76	--	57	58	58	2	3	2	37	41	39
MFA																			
(S) 2020	63	70	66	102	105	104	66	--	78	--	56	55	55	3	4	3	39	41	40
(S) 766	63	64	64	102	97	99	65	56	67	--	55	55	55	2	1	1	35	37	36
M-Pride																			
(S)MPV14S-4SRW	67	70	68	108	105	107	--	--	--	--	56	56	56	6	5	5	41	43	42
NK																			
(S) Coker 9184	55	54	54	89	82	85	--	--	--	--	57	54	56	5	5	5	37	39	38
(S) Coker 9663	62	67	64	100	101	101	67	53	72	--	56	57	57	5	4	4	41	43	42
Pioneer																			
(S) 25R37	64	66	65	105	100	102	--	--	--	--	56	57	56	5	5	5	33	37	35
(S) 25R47	76	75	75	123	113	118	--	--	--	--	54	52	53	2	4	3	35	40	38
(S) 25R54	74	77	75	120	115	118	--	--	--	--	55	54	55	5	5	5	36	39	37
Public																			
(S) Kaskaskia	59	64	62	96	97	97	62	50	70	--	57	57	57	5	5	5	39	45	42
(S) Pat	55	65	60	90	98	94	67	--	73	--	57	57	57	9	8	8	37	45	41
(S) Roane	67	74	70	108	112	110	65	56	77	--	58	58	58	5	4	4	34	38	36
(S) Sabbe	64	64	64	104	96	100	74	--	78	--	55	56	55	7	7	7	37	40	38
(S) Truman	50	70	60	82	105	94	62	--	79	--	56	58	57	13	11	12	38	43	41
2137	56	53	55	91	80	85	63	51	58	--	56	55	56	5	5	5	35	40	37
Jagger	51	53	52	83	80	81	46	36	52	--	55	52	53	0	0	0	35	39	37
Average	62	66	64	62	66	64	65	53	70	--	56	56	56	5	4	5	37	41	39
CV (%)	4	5	5	4	5	5	--	--	--	--	1	1	1	1	0	1	5	4	5
LSD (0.05)*	4	5	3	6	7	5	--	--	--	--	1	1	1	1	1	1	3	3	2

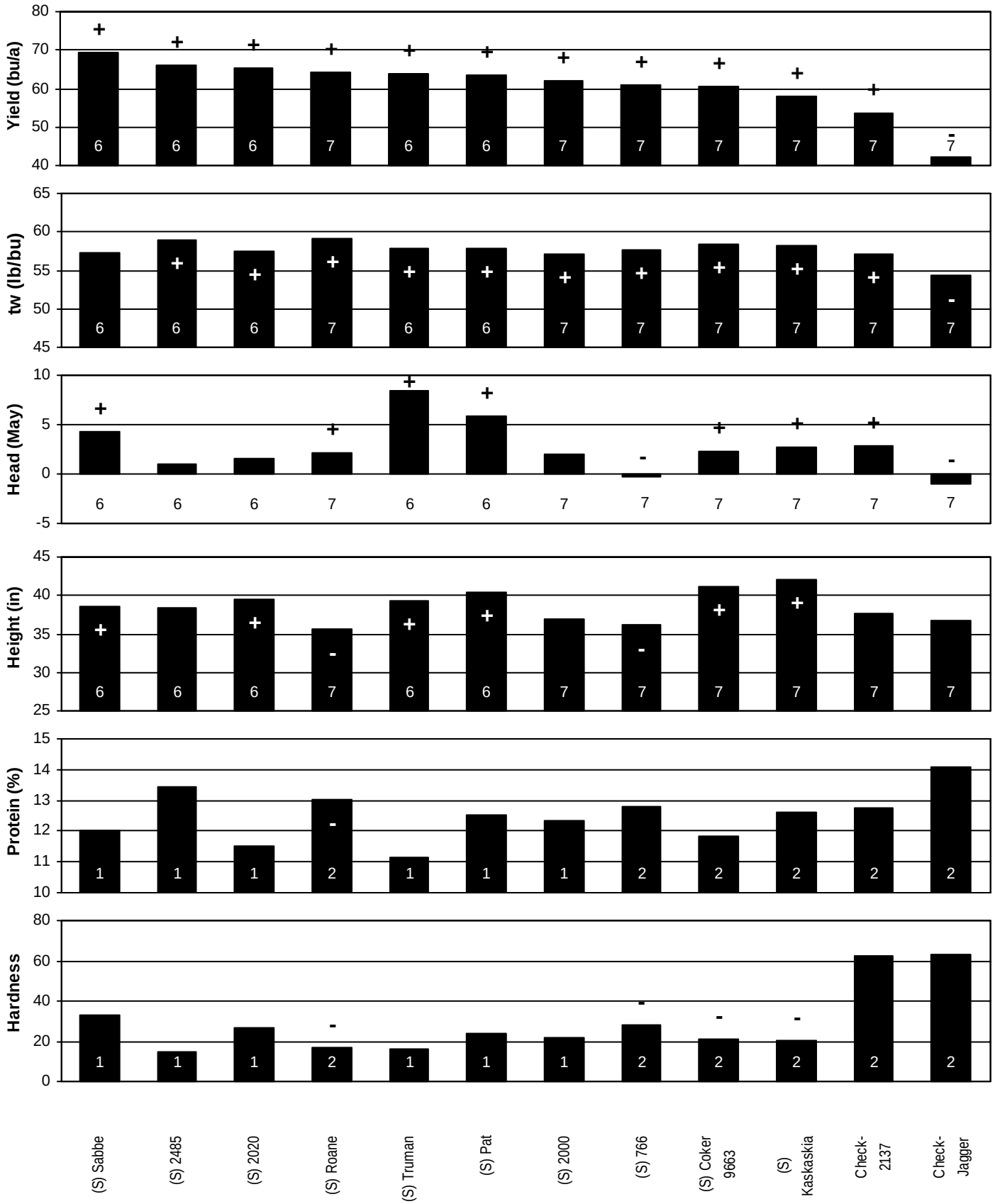
[1] CL = Columbus, KS, Cherokee County; moved from Pittsburg in Crawford County for 2004

[2] PA = 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.

Figure 5. Wheat variety performance summary, SOFT region, 2002-2004



+ = significantly greater than the average of the checks; - = significantly less than the average of the checks

Table 6. 2004 NORTH CENTRAL Kansas Winter Wheat Performance Tests.

Brand / Name	BE[1]	SC[2]	PH[3]	Av.	BE	SC	PH	Av.	-BE- 2yr	-BE- 3yr	-SC- 2yr	-SC- 3yr	-PH- 2yr	-PH- 3yr	BE	SC	PH	Av.	BE	BE	SC	PH	Av.
	yield (bu/a)				% of test average				multi-year avg (bu/a)						tw (lb/bu)				head (+/- Jagger)	height (in)			
AgriPro																							
Cutter	82	80	33	65	110	113	110	111	90	92	80	--	72	65	61	60	57	59	1	37	33	22	31
Jagalene	86	88	43	72	115	123	140	123	103	101	86	--	84	76	62	61	57	60	0	35	34	22	30
W96-1311-01	78	73	28	60	105	104	92	102	--	--	--	--	--	--	62	60	57	60	1	36	33	23	31
W99-194	82	77	30	63	111	108	100	108	--	--	--	--	--	--	62	60	57	59	0	34	34	23	31
AGSECO																							
Gem	71	57	25	51	95	80	84	87	--	--	--	--	--	--	61	59	55	58	0	34	31	20	28
General Mills																							
(W) NuFrontier	68	72	26	55	91	101	87	94	85	81	78	75	67	61	62	58	55	58	2	35	36	21	31
(W) NuHills	78	72	32	61	104	102	106	104	99	--	77	--	74	--	62	60	55	59	2	33	32	21	29
(W) NuHorizon	58	63	25	48	78	88	81	83	80	81	76	74	63	57	62	60	56	59	2	32	31	19	27
Polansky																							
Dominator	79	67	30	59	106	95	97	100	94	91	78	79	67	58	62	60	57	60	0	33	27	19	26
Rinck																							
TAM 302	62	68	25	52	83	96	83	88	--	--	--	--	--	--	62	59	55	59	0	34	31	20	28
Public																							
(W) Betty	64	61	19	48	86	86	63	82	--	--	--	--	--	--	61	59	55	58	1	36	35	22	31
(W) Intrada	64	66	24	51	86	92	79	87	--	--	--	--	--	--	62	59	55	59	1	34	30	18	27
(W) Lakin	75	77	24	59	100	109	78	100	--	--	--	--	--	--	62	60	55	59	1	32	32	20	28
(W) Nuplains	75	62	27	54	100	87	89	93	--	--	--	--	--	--	62	59	55	59	2	36	29	20	29
(W) Trego	79	72	28	60	106	102	93	102	92	--	74	74	61	--	63	60	56	60	1	35	31	19	28
2137	84	81	40	68	113	114	131	116	97	94	83	80	67	62	63	60	57	60	0	35	31	22	29
2145	83	77	37	66	112	109	122	112	98	98	75	75	68	59	62	59	56	59	1	33	29	19	27
2174	79	63	27	56	106	89	88	96	92	89	66	67	60	53	62	59	55	59	0	36	31	21	29
Goodstreak	59	71	28	53	79	100	93	90	69	--	73	--	61	--	58	59	54	57	3	39	34	24	32
Harry	73	63	29	55	98	88	94	94	72	--	74	--	67	--	60	59	57	59	1	36	29	20	29
Ike	63	71	31	55	84	101	104	94	75	79	79	77	64	58	60	60	56	59	1	33	33	20	29
Jag,2137	83	80	36	66	111	112	118	113	97	92	83	--	65	60	61	60	57	59	0	34	31	22	29
Jag,2137,Dom	83	81	38	67	112	114	126	115	98	94	84	--	76	65	61	61	57	60	1	34	31	22	29
Jagger	84	82	46	71	112	116	151	121	93	90	85	85	72	63	61	60	57	59	0	34	32	22	29
Karl 92	68	60	17	48	91	84	57	82	87	86	67	72	58	51	60	60	56	59	-2	32	30	20	27
KS01HW152-6	74	73	34	61	100	103	113	103	--	--	--	--	--	--	61	60	56	59	1	33	31	21	28
KS01HW163-4	63	72	32	56	85	102	107	95	--	--	--	--	--	--	62	60	56	59	1	35	33	22	30
KS02HW34	84	70	35	63	113	98	115	107	--	--	--	--	--	--	62	60	56	59	1	37	33	21	30
Millennium	73	64	29	55	98	90	95	94	78	80	72	74	65	59	62	59	54	59	2	38	35	21	31
Ok102	83	63	22	56	112	88	72	95	--	--	--	--	--	--	62	59	55	58	0	30	27	22	26
Overley	83	75	37	65	112	105	120	111	101	--	75	--	60	--	61	61	57	60	1	36	33	22	30
Stanton	64	71	29	54	85	99	94	93	83	86	77	74	64	58	61	60	55	59	1	36	32	20	29
Wahoo	69	71	30	56	92	100	97	96	74	77	77	--	67	60	61	60	55	59	3	36	32	20	29
Wesley	81	71	36	63	108	101	119	107	101	99	79	82	79	69	60	59	56	58	2	34	30	21	28
Average	75	71	30	59	75	71	30	59	87	85	76	74	66	58	61	60	56	59	1	35	32	21	29
CV (%)	6	7	10	7	6	7	10	7	--	--	--	--	--	--	0	1	1	1	0	3	4	7	5
LSD (0.05)*	7	8	5	4	10	12	17	7	--	--	--	--	--	--	0	0	1	0	1	2	2	2	1

[1] BE = Belleville, KS, North Central Experiment Field, Republic County

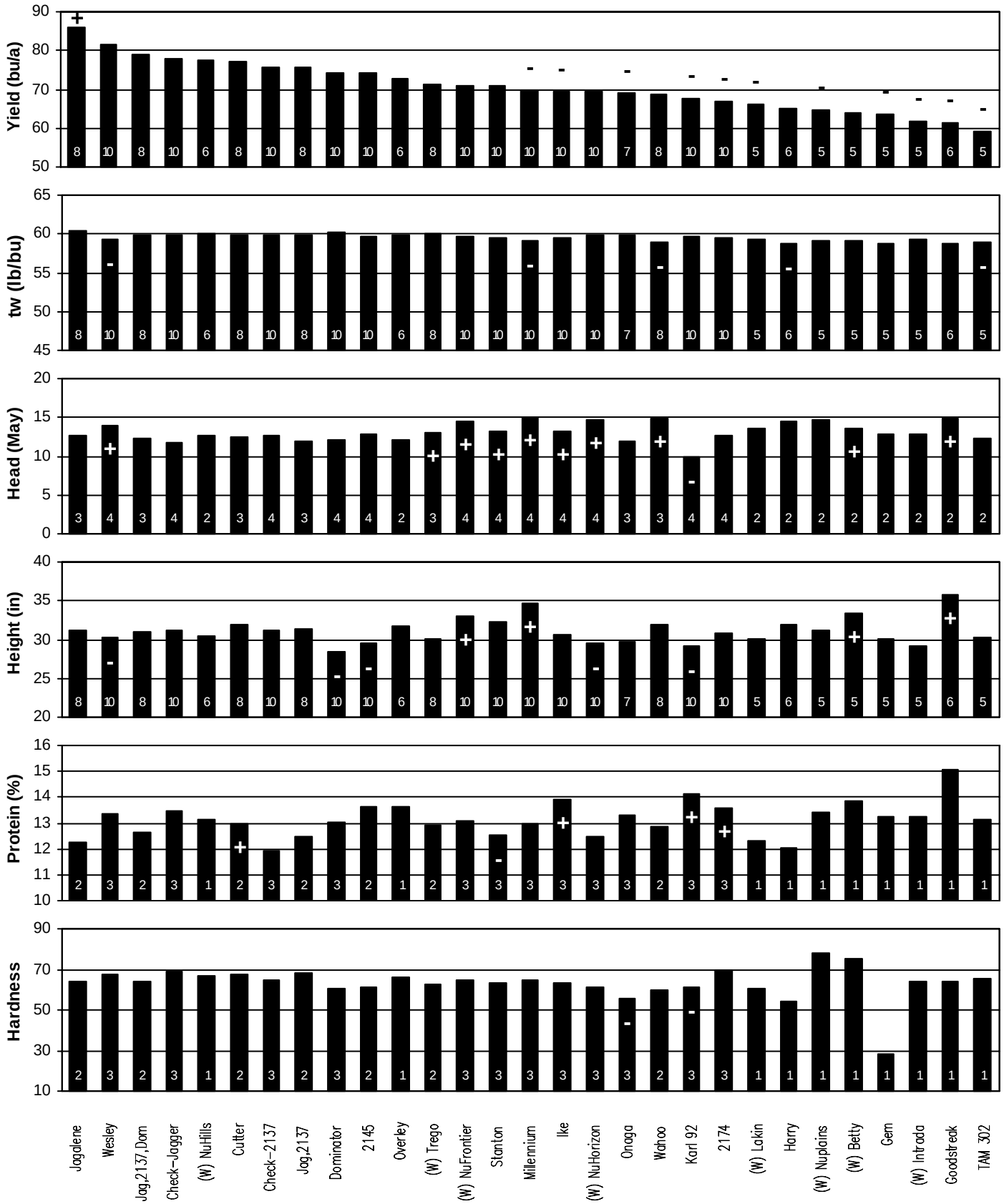
[2] SC = Smith Center, KS, Smith County

[3] PH = Phillipsburg, KS, Phillips County

(W) = Hard white wheat

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

Figure 6. Wheat variety performance summary, NORTH CENTRAL region, 2001-2004



+ = significantly greater than the average of the checks; - = significantly less than the average of the checks

Table 7. 2004 SOUTH CENTRAL Kansas Winter Wheat Performance Tests.

Brand / Name	yield (bu/a)				% of test average				multi-year avg (bu/a)						tw (lb/bu)				head (+/- Jagger)				height (in)			
	HE[1]	HU[2]	CA[3]	Av.	HE	HU	CA	Av.	-HE- 2yr	-HE- 3yr	-HU- 2yr	-HU- 3yr	-CA- 2yr	-CA- 3yr	HE	HU	CA	Av.	HE	HU	CA	Av.	HE	HU	CA	Av.
AgriPro																										
Cutter	54	48	45	49	100	97	105	101	58	57	55	56	43	39	61	58	53	57	5	3	--	4	35	36	42	38
Jagalene	55	48	37	47	102	96	86	95	63	62	57	--	37	39	62	59	55	59	5	3	--	4	33	34	39	35
W96-1311-01	57	53	42	51	106	107	97	104	--	--	--	--	--	--	62	59	55	58	5	1	--	3	34	38	43	38
AGSECO																										
Gem	51	49	36	45	95	98	84	93	63	55	56	--	31	32	60	56	52	56	6	3	--	4	29	32	38	33
Onaga	50	52	49	50	94	104	113	103	56	49	56	54	40	36	61	58	56	58	3	2	--	3	32	34	36	34
General Mills																										
(W) GM10006	48	48	29	42	90	97	67	85	--	--	--	--	--	--	62	59	53	58	6	4	--	5	28	29	34	30
(W) NuHills	54	50	48	51	101	100	111	104	58	--	54	--	38	--	63	59	57	60	6	3	--	4	31	34	38	34
Polansky																										
Dominator	51	51	40	47	96	102	92	97	61	54	47	51	29	--	62	58	55	58	4	2	--	3	29	31	35	32
Public																										
2137	56	57	48	54	105	114	111	110	57	54	50	49	39	39	60	56	54	57	5	3	--	4	32	35	38	35
2145	51	54	47	51	95	108	110	104	57	51	59	56	39	36	61	58	54	58	5	3	--	4	31	32	36	33
2174	57	53	49	53	106	106	114	108	59	54	58	57	41	38	61	58	56	58	5	2	--	4	33	37	38	36
Jag,2137	54	47	39	47	101	94	90	95	61	58	54	--	34	34	60	57	52	56	1	1	--	1	33	34	39	35
Jag,2137,K92	53	48	44	48	99	96	103	99	61	58	52	--	36	36	60	57	53	57	1	-1	--	0	32	35	38	35
Jagger	52	39	34	42	98	78	79	86	62	60	50	54	31	32	60	57	51	56	0	0	--	0	34	36	38	36
Karl 92	56	50	53	53	105	101	123	109	65	58	55	57	40	40	61	58	58	59	1	-1	--	0	33	35	35	34
KS01HW163-4	54	54	46	51	100	109	108	105	--	--	--	--	--	--	62	59	56	59	5	3	--	4	32	34	38	35
KS02HW34	58	52	42	51	108	104	98	104	--	--	--	--	--	--	63	59	56	59	5	3	--	4	30	33	37	33
Ok101	50	43	34	42	94	86	78	86	56	52	45	45	30	32	60	57	50	56	3	1	--	2	33	34	38	35
Ok102	56	50	43	50	105	100	99	102	60	--	52	--	36	--	61	57	54	58	5	2	--	3	31	32	37	33
Overley	54	52	56	54	101	104	131	111	65	--	70	--	50	--	61	58	54	58	0	-4	--	-2	34	38	40	37
Average	53	50	43	49	53	50	43	49	60	55	54	52	35	35	61	58	54	58	4	2	--	3	32	34	38	35
CV (%)	2	6	8	5	2	6	8	5	--	--	--	--	--	--	1	1	3	2	0	0	--	0	3	4	2	3
LSD (0.05)*	2	4	5	2	3	8	11	4	--	--	--	--	--	--	0	1	2	1	1	1	--	0	1	2	1	1

[1] HE = Hesston, KS, Harvey County Experiment Field, Harvey County

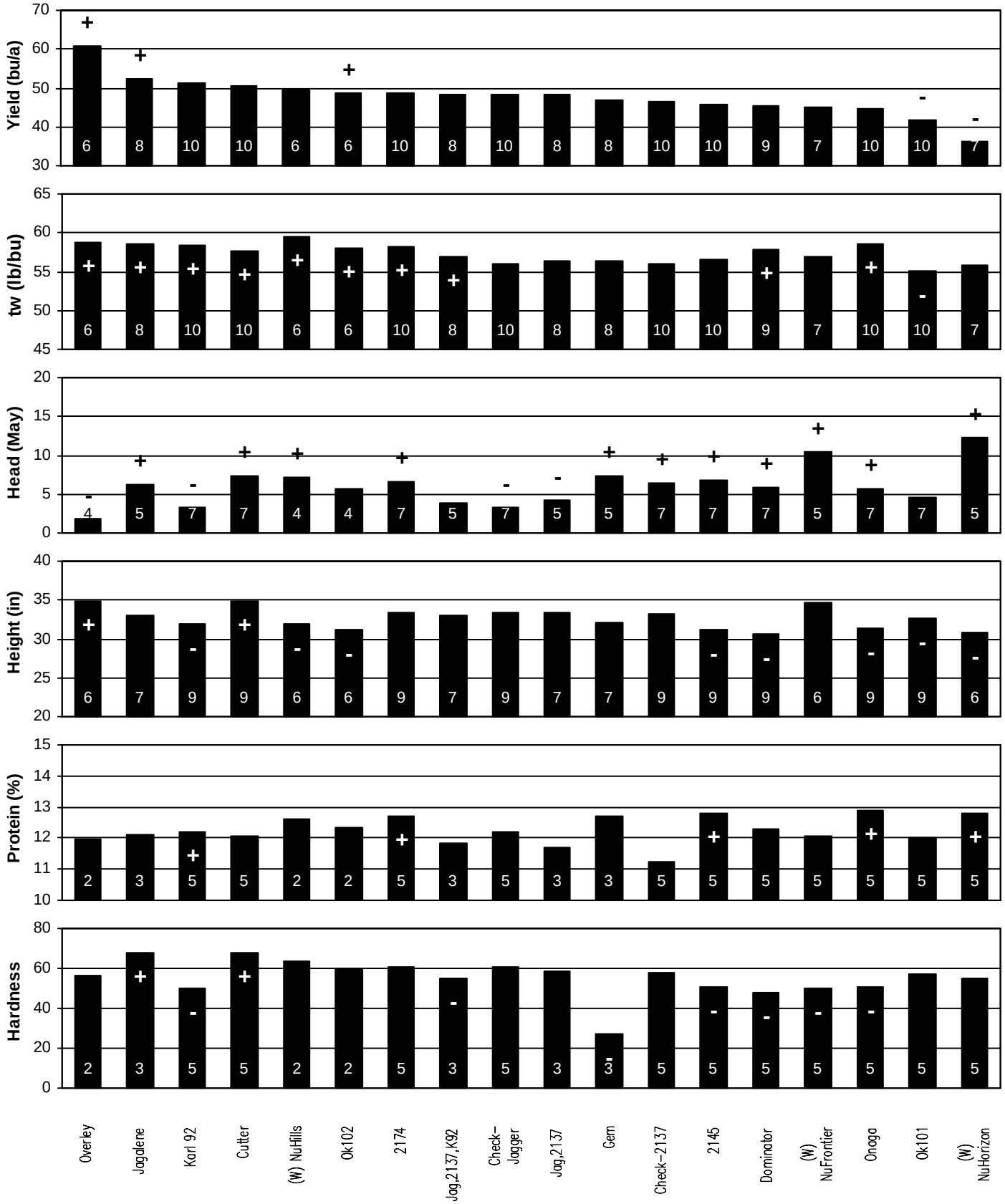
[2] HU = Hutchinson, KS, South Central Experiment Field, Reno County

[3] CA = Caldwell, KS, Max Kolarik farm, Sumner County

(W) = Hard white wheat

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

Figure 7. Wheat variety performance summary, SOUTH CENTRAL region, 2001-2004



+ = significantly greater than the average of the checks; - = significantly less than the average of the checks

Table 8. 2004 NORTHWEST DRYLAND Kansas Winter Wheat Performance Tests.

Brand / Name	yield (bu/a)				% of test average				multi-year avg (bu/a)						tw (lb/bu)				head (+/- Scout)				height (in)			
	HA[1]	CO[2]	TR[3]	Av.	HA	CO	TR	Av.	-HA- 2yr	-HA- 3yr	-CO- 2yr	-CO- 3yr	-TR-[4] 2yr	-TR-[4] 3yr	HA	CO	TR	Av.	HA	CO	TR	Av.	HA	CO	TR	Av.
AgriPro																										
AP502CL	50	57	--	54	94	109	--	101	66	59	67	58	22	--	62	51	--	57	-2	-1	--	-1	29	27	--	28
Cutter	59	53	--	56	110	102	--	106	78	67	62	54	22	--	62	54	--	58	2	1	--	1	31	27	--	29
Jagalene	57	61	--	59	108	118	--	113	78	68	69	61	22	--	63	56	--	60	3	2	--	2	29	27	--	28
TAM 111	52	52	--	52	98	100	--	99	--	--	--	--	--	--	63	53	--	58	3	3	--	3	31	28	--	29
Thunderbolt	56	52	--	54	105	100	--	103	72	64	62	55	28	34	64	57	--	60	4	3	--	3	30	28	--	29
W99-194	54	48	--	51	101	93	--	97	--	--	--	--	--	--	62	51	--	56	2	1	--	2	29	27	--	28
AGSECO																										
TAM 110	56	55	--	55	104	105	--	105	68	60	65	57	21	31	62	53	--	58	-2	0	--	-1	30	26	--	28
DSS																										
T81	56	51	--	53	104	98	--	101	--	--	--	--	--	--	62	54	--	58	1	1	--	1	28	27	--	28
Farmer Direct																										
(W) Burchett	54	51	--	52	101	97	--	99	75	--	64	--	--	--	63	56	--	59	1	2	--	1	28	26	--	27
(W)PrairieWhite	50	49	--	49	93	94	--	93	72	--	65	--	--	--	63	53	--	58	1	1	--	1	29	26	--	27
General Mills																										
(W) NuFrontier	56	55	--	55	104	105	--	104	71	60	65	56	18	29	63	53	--	58	5	4	--	4	29	28	--	29
(W) NuHills	59	60	--	60	111	115	--	113	83	--	70	--	--	--	64	55	--	59	2	2	--	2	28	27	--	27
(W) NuHorizon	50	49	--	50	94	94	--	94	70	60	61	53	20	28	62	51	--	57	6	4	--	5	26	24	--	25
Public																										
(W) Avalanche	57	54	--	56	107	104	--	105	70	62	66	57	25	--	63	55	--	59	3	3	--	3	30	26	--	28
(W) Betty	44	44	--	44	83	85	--	84	66	58	56	49	20	30	63	51	--	57	5	4	--	4	30	28	--	29
(W) Intrada	45	41	--	43	84	79	--	82	64	55	57	49	16	26	64	55	--	60	3	2	--	2	27	25	--	26
(W) Lakin	52	52	--	52	97	100	--	98	62	57	64	56	16	27	63	54	--	58	2	2	--	2	30	27	--	28
(W) Nuplains	52	48	--	50	97	92	--	94	60	53	59	52	28	35	63	54	--	58	8	7	--	8	29	25	--	27
(W) Trego	56	53	--	54	104	102	--	103	72	64	65	57	20	30	64	54	--	59	3	3	--	3	28	25	--	26
2137	54	49	--	51	101	94	--	97	69	60	60	53	25	32	62	52	--	57	2	2	--	2	28	25	--	27
2145	56	52	--	54	104	100	--	102	73	62	59	51	17	27	62	53	--	58	2	3	--	2	27	25	--	26
2174	53	49	--	51	99	94	--	97	68	59	62	53	16	27	63	54	--	59	2	2	--	2	28	26	--	27
Above	59	59	--	59	111	113	--	112	71	63	68	59	22	--	62	54	--	58	-1	0	--	-1	29	26	--	28
Ankor	58	55	--	56	109	105	--	107	70	--	68	--	--	--	61	53	--	57	3	2	--	2	30	27	--	28
Goodstreak	49	46	--	48	92	88	--	90	63	--	58	--	--	--	62	55	--	58	5	5	--	5	33	30	--	31
Harry	48	51	--	50	90	98	--	94	70	--	67	--	--	--	58	48	--	53	7	7	--	7	29	27	--	28
Ike	53	49	--	51	99	93	--	96	72	63	64	56	19	30	62	53	--	58	3	2	--	2	30	27	--	28
Jag,2137	54	51	--	52	101	98	--	99	73	63	64	55	23	--	63	51	--	57	1	1	--	1	29	27	--	28
Jag,2137,Stan	55	52	--	53	103	99	--	101	74	64	65	56	22	--	62	53	--	57	2	1	--	1	29	27	--	28
Jagger	54	51	--	52	101	97	--	99	73	64	62	54	17	27	62	53	--	58	0	0	--	0	31	28	--	29
Karl 92	40	46	--	43	76	87	--	81	66	57	58	48	13	25	61	54	--	58	-2	0	--	-1	28	26	--	27
KS01HW152-6	69	60	--	65	130	115	--	123	--	--	--	--	--	--	64	51	--	58	1	1	--	1	29	25	--	27
KS01HW163-4	54	58	--	56	100	112	--	106	--	--	--	--	--	--	64	55	--	59	3	2	--	3	29	27	--	28
KS02HW34	60	59	--	59	112	113	--	113	--	--	--	--	--	--	64	56	--	60	3	3	--	3	30	26	--	28
Millennium	53	47	--	50	98	91	--	95	70	60	63	55	27	--	61	53	--	57	6	6	--	6	31	29	--	30
Ok101	51	51	--	51	96	99	--	97	71	61	63	54	20	--	63	54	--	59	-1	-1	--	-1	29	27	--	28
Ok102	50	51	--	50	93	97	--	95	--	--	--	--	--	--	63	55	--	59	1	2	--	2	26	25	--	25
Overley	54	55	--	55	101	105	--	103	73	--	64	--	--	--	63	53	--	58	0	1	--	0	29	28	--	28
Prairie Red	52	56	--	54	98	108	--	103	68	59	67	58	19	30	62	53	--	57	-2	-1	--	-1	29	27	--	28
Stanton	45	51	--	48	84	98	--	91	67	59	61	54	18	30	62	53	--	57	3	2	--	3	29	27	--	28
TAM 107	49	55	--	52	92	106	--	99	63	57	65	55	18	29	62	53	--	58	-2	-2	--	-2	30	27	--	28
Wahoo	61	53	--	57	115	102	--	109	76	65	67	59	24	--	60	52	--	56	5	5	--	5	31	28	--	29
Wesley	52	50	--	51	97	96	--	96	74	63	64	56	26	35	60	51	--	56	6	4	--	5	27	25	--	26
Average	53	52	--	53	53	52	--	53	70	61	64	55	21	30	62	53	--	58	2	2	--	2	29	27	--	28
CV (%)	9	3	--	7	9	3	--	7	--	--	--	--	--	--	1	2	--	1	0	0	--	0	4	2	--	3
LSD (0.05)*	7	2	--	4	13	5	--	7	--	--	--	--	--	--	1	1	--	1	1	1	--	1	1	1	--	1

[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

[4] Tribune 2-yr means from 2002 and 2003, 3-yr means from 2001 to 2003

(W) = Hard white wheat

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

Figure 8. Wheat variety performance summary, NORTHWEST DRYLAND region, 2001-2004

+ = significantly greater than the average of the checks; - = significantly less than the average of the checks

Table 9. 2004 SOUTHWEST DRYLAND Kansas Winter Wheat Performance Tests.

Brand / Name	SJ[1]	DC[2]	GC[3]	Av.	SJ	DC	GC	Av.	-SJ- 2yr	-SJ- 3yr	-DC- 2yr	-DC- 3yr	-GC- 2yr	-GC- 3yr	SJ	DC	GC	Av.	SJ	DC	GC	Av.	SJ	DC	GC	Av.
	yield (bu/a)				% of test average				multi-year avg (bu/a)						tw (lb/bu)				head (+/- Jagger)				height (in)			
AgriPro																										
AP502CL	67	51	30	49	88	100	95	93	--	--	50	--	34	32	54	55	53	54	0	0	0	0	35	32	23	30
Cutter	81	51	29	53	107	100	91	102	75	--	50	--	32	29	55	59	54	56	3	4	4	4	38	32	23	31
Jagalene	85	57	33	58	113	112	104	111	82	--	60	--	37	35	57	62	56	58	5	3	3	3	37	30	23	30
TAM 111	80	52	33	55	106	101	103	104	--	--	--	--	--	--	55	58	54	56	4	3	3	3	36	32	24	31
Thunderbolt	75	55	37	56	100	109	115	106	--	--	60	--	38	34	57	61	55	58	9	4	3	5	35	33	24	30
W99-194	75	47	27	50	99	93	84	94	--	--	--	--	--	--	57	58	53	56	2	5	4	4	35	34	23	30
AGSECO																										
TAM 110	71	49	35	52	95	96	109	98	--	--	50	--	36	33	55	56	54	55	2	-1	-1	0	36	32	23	30
DSS																										
T81	75	49	36	53	99	96	115	101	--	--	50	--	37	34	56	58	54	56	1	2	1	1	35	31	23	30
Farmer Direct																										
(W) Burchett	74	57	32	54	98	111	100	103	--	--	60	--	34	--	57	63	56	58	2	1	2	1	34	30	23	29
General Mills																										
(W) NuFrontier	79	47	33	53	105	92	104	101	71	--	50	--	36	32	56	57	53	55	7	6	5	6	37	33	23	31
(W) NuHills	91	59	29	60	121	117	92	114	--	--	60	--	33	--	58	62	55	58	4	4	2	3	33	31	22	29
(W) NuHorizon	78	42	30	50	104	82	95	95	71	--	50	--	35	30	55	59	55	56	7	6	7	7	30	26	21	26
Public																										
(W) Avalanche	83	49	36	56	109	96	112	106	--	--	50	--	36	32	57	60	55	57	4	4	4	4	35	32	23	30
(W) Betty	59	48	28	45	79	95	88	86	--	--	60	--	--	--	55	60	54	56	8	6	7	7	32	33	23	29
(W) Intrada	72	48	29	50	95	94	91	94	--	--	50	--	31	27	57	61	56	58	0	3	2	2	34	29	21	28
(W) Lakin	75	51	37	55	100	100	117	104	--	--	60	--	40	35	56	56	56	56	2	3	-1	2	32	32	25	29
(W) Nuplains	61	46	33	47	81	90	104	88	--	--	40	--	34	31	57	60	55	57	10	7	7	8	32	28	22	27
(W) Trego	78	50	34	54	104	97	107	102	--	--	60	--	33	31	57	58	55	57	6	4	2	4	33	29	22	28
2137	77	48	30	51	102	94	93	98	79	72	50	--	33	31	55	55	54	55	4	3	2	3	30	31	23	28
2145	88	51	29	56	116	101	92	107	76	67	50	--	34	30	56	58	54	56	2	4	4	3	31	29	22	27
2174	79	50	31	53	105	98	98	101	72	64	50	--	34	30	56	60	55	57	2	4	1	2	34	31	23	29
Above	74	53	35	54	98	105	110	103	--	--	50	--	38	33	55	56	53	55	-1	-1	-1	-1	35	31	23	30
Ankor	72	48	32	51	96	95	101	96	--	--	50	--	37	--	53	56	52	54	4	4	1	3	35	31	24	30
Ike	67	52	38	52	89	103	119	100	73	65	60	--	38	34	55	58	54	56	9	4	3	5	33	31	25	30
Jag,2137	76	49	28	51	100	97	89	97	76	--	50	--	33	30	55	56	54	55	1	2	1	1	35	32	23	30
Jag,2137,Stan	75	53	31	53	100	105	97	101	--	--	50	--	34	31	55	58	54	56	2	2	1	2	34	33	23	30
Jagger	56	50	27	45	75	99	86	85	62	58	60	--	32	29	54	59	54	56	0	0	0	0	34	32	23	30
Karl 92	64	46	20	44	85	91	64	83	66	58	50	--	25	23	56	62	55	58	0	-1	-1	-1	34	31	22	29
KS01HW152-6	73	63	31	56	97	124	99	106	--	--	--	--	--	--	53	61	54	56	3	1	1	1	32	31	21	28
KS01HW163-4	78	56	28	54	103	111	89	103	--	--	--	--	--	--	58	63	56	59	2	2	3	2	33	31	22	28
KS02HW34	78	55	36	56	103	109	113	107	--	--	--	--	--	--	58	62	56	59	7	3	3	4	35	30	23	29
Ok101	74	48	28	50	98	94	87	94	67	--	50	--	30	26	55	57	53	55	0	0	1	0	35	32	23	30
Ok102	75	45	34	51	100	88	107	97	--	--	--	--	--	--	56	59	56	57	3	3	0	2	32	29	21	27
Overley	94	50	29	57	125	98	90	109	--	--	50	--	35	--	57	59	54	57	1	0	2	1	39	32	23	31
Prairie Red	69	52	34	52	91	102	109	98	--	--	50	--	35	31	53	57	53	54	0	-1	-1	-1	35	31	23	30
Stanton	80	48	35	54	106	94	110	103	--	--	50	--	36	32	57	57	56	56	3	4	3	3	34	31	24	30
TAM 107	75	55	35	55	99	108	111	104	--	--	60	--	33	30	55	58	54	55	-1	-1	-2	-1	36	32	23	30
Wesley	82	52	34	56	108	102	108	106	--	--	60	--	37	--	54	56	52	54	10	6	5	7	33	28	22	28
Average	75	51	32	53	75	51	32	53	72	64	50	--	34	31	56	59	54	56	3	3	2	3	34	31	23	29
CV (%)	11	7	4	10	11	7	4	10	--	--	--	--	--	--	1	2	1	1	2	0	1	1	7	3	3	5
LSD (0.05)*	11	5	2	4	15	10	6	8	--	--	--	--	--	--	1	1	0	1	3	1	1	1	3	1	1	1

[1] SJ = St. John, KS, Sandyland Experiment Field, Stafford County

[2] DC = Dodge City, KS, Ford County

[3] GC = Garden City, KS, Southwest Research-Extension Center, Finney County

(W) = Hard white wheat

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

Figure 9. Wheat variety performance summary, SOUTHWEST DRYLAND region, 2001-2004

+ = significantly greater than the average of the checks; - = significantly less than the average of the checks

Table 10. 2004 IRRIGATED Kansas Winter Wheat Performance Tests.

Brand / Name	yield (bu/a)				% of test average				multi-year avg (bu/a)						tw (lb/bu)				head (+/- Jagger)				height (in)			
	TR[1]	GC[2]	HG[3]	Av.	TR	GC	HG	Av.	-TR- 2yr	-TR- 3yr	-GC- 2yr	-GC- 3yr	-HG- 2yr	-HG- 3yr	TR	GC	HG	Av.	TR	GC	HG	Av.	TR	GC	HG	Av.
AgriPro																										
(W) Platte	60	93	79	77	109	103	109	106	68	--	82	--	--	--	52	54	53	53	4	4	--	4	29	36	33	33
Dumas	67	95	88	83	122	104	122	115	70	--	84	75	--	--	56	57	57	57	1	2	--	1	33	36	37	35
Jagalene	66	103	85	84	120	113	118	116	72	--	88	81	--	--	56	58	57	57	2	2	--	2	34	37	37	36
TAM 111	60	101	87	82	109	111	120	113	--	--	--	--	--	--	57	58	57	57	3	3	--	3	33	39	37	36
W99-194	47	83	54	62	86	91	75	85	--	--	--	--	--	--	54	57	55	55	4	3	--	3	33	37	36	35
AGSECO																										
TAM 110	49	97	73	73	89	107	101	101	63	--	87	81	--	--	56	55	55	55	-1	-2	--	-2	32	38	37	36
DSS																										
T81	57	106	71	78	105	116	98	107	--	--	89	82	--	--	56	57	55	56	0	-1	--	0	32	38	35	35
Farmer Direct																										
(W) Burchett	--	96	82	--	--	105	114	--	--	--	--	--	--	--	--	58	57	--	--	1	--	--	--	36	35	--
(W)Bakers White	--	94	77	--	--	103	106	--	--	--	--	--	--	--	--	55	56	--	--	2	--	--	--	36	34	--
General Mills																										
(W) NuFrontier	57	86	63	69	104	94	88	94	70	--	80	77	64	--	54	56	54	55	5	5	--	5	34	38	37	37
(W) NuHills	65	95	60	73	120	104	83	101	73	--	86	--	--	--	56	57	56	56	2	1	--	1	33	35	34	34
(W) NuHorizon	55	94	79	76	100	103	109	104	69	--	85	77	71	--	55	57	54	55	6	4	--	5	30	34	32	32
Rinck																										
TAM 302	52	--	--	--	95	--	--	--	--	--	--	--	--	--	50	--	--	--	5	--	--	--	32	--	--	--
Public																										
(W) Betty	62	93	79	78	112	102	109	107	64	--	78	71	78	72	53	56	55	55	6	5	--	5	38	38	39	38
(W) Intrada	40	81	65	62	72	89	90	85	58	--	78	71	55	--	56	58	58	57	1	2	--	1	29	35	35	33
(W) Lakin	60	92	82	78	109	101	114	107	69	--	81	78	54	67	55	56	56	56	3	0	--	1	32	37	36	35
(W) Nuplains	56	72	61	63	102	79	84	86	62	--	65	--	--	--	57	57	52	55	9	6	--	7	34	36	34	35
(W) Trego	48	84	66	66	87	93	91	91	64	--	77	75	45	56	57	57	55	56	3	3	--	3	28	36	34	33
2137	58	95	72	75	106	105	99	103	68	--	80	75	58	64	54	56	55	55	2	2	--	2	30	37	36	35
2145	60	78	66	68	110	86	92	94	69	--	71	67	62	--	55	57	54	55	3	2	--	3	31	36	34	33
2174	56	100	78	78	102	110	108	108	70	--	84	76	73	71	55	58	55	56	3	2	--	3	33	37	37	35
Jag,2137	51	90	76	72	92	99	105	99	62	--	83	75	--	--	55	56	55	55	0	1	--	1	32	37	35	35
Jag,2137,K92	50	93	72	72	92	103	100	99	62	--	83	75	--	--	54	56	55	55	0	-1	--	0	31	36	35	34
Jagger	51	84	62	65	93	92	86	90	59	--	78	69	67	71	55	55	55	55	0	0	--	0	31	37	36	35
Karl 92	48	92	63	68	88	101	87	93	61	--	81	72	71	70	55	57	58	56	0	-2	--	-1	31	35	34	33
KS01HW152-6	55	81	58	65	101	89	80	89	--	--	--	--	--	--	56	56	54	55	-1	-1	--	-1	29	35	35	33
KS01HW163-4	53	79	65	66	97	87	90	90	--	--	--	--	--	--	56	58	56	56	2	2	--	2	31	35	36	34
KS02HW34	60	91	84	78	109	100	116	108	--	--	--	--	--	--	57	59	58	58	3	3	--	3	31	38	34	34
Ok101	48	94	84	75	87	103	117	103	--	--	80	--	--	--	55	57	55	56	0	-1	--	-1	33	38	37	36
Ok102	56	94	78	76	102	103	108	105	--	--	79	--	--	--	55	57	56	56	2	0	--	1	32	34	35	34
Overley	44	88	43	58	80	97	59	80	53	--	77	--	--	--	55	57	55	55	-1	-1	--	-1	32	37	38	36
Stanton	57	99	76	77	103	108	105	106	72	--	87	80	60	65	57	57	57	57	3	2	--	2	35	39	37	37
TAM 107	53	92	83	76	98	101	115	105	62	--	77	73	60	62	56	55	56	56	-2	-3	--	-2	33	38	37	36
Average	55	91	72	73	55	91	72	73	65	--	80	74	61	66	55	57	56	56	2	1	--	2	32	37	36	35
CV (%)	11	10	13	11	12	10	13	11	--	--	--	--	--	--	2	1	2	2	1	1	--	1	5	3	4	4
LSD (0.05)*	9	13	13	7	17	14	18	9	--	--	--	--	--	--	1	1	2	1	1	1	--	1	2	2	2	1

[1] TR = Tribune, KS, Southwest Research-Extension Center, Greeley County

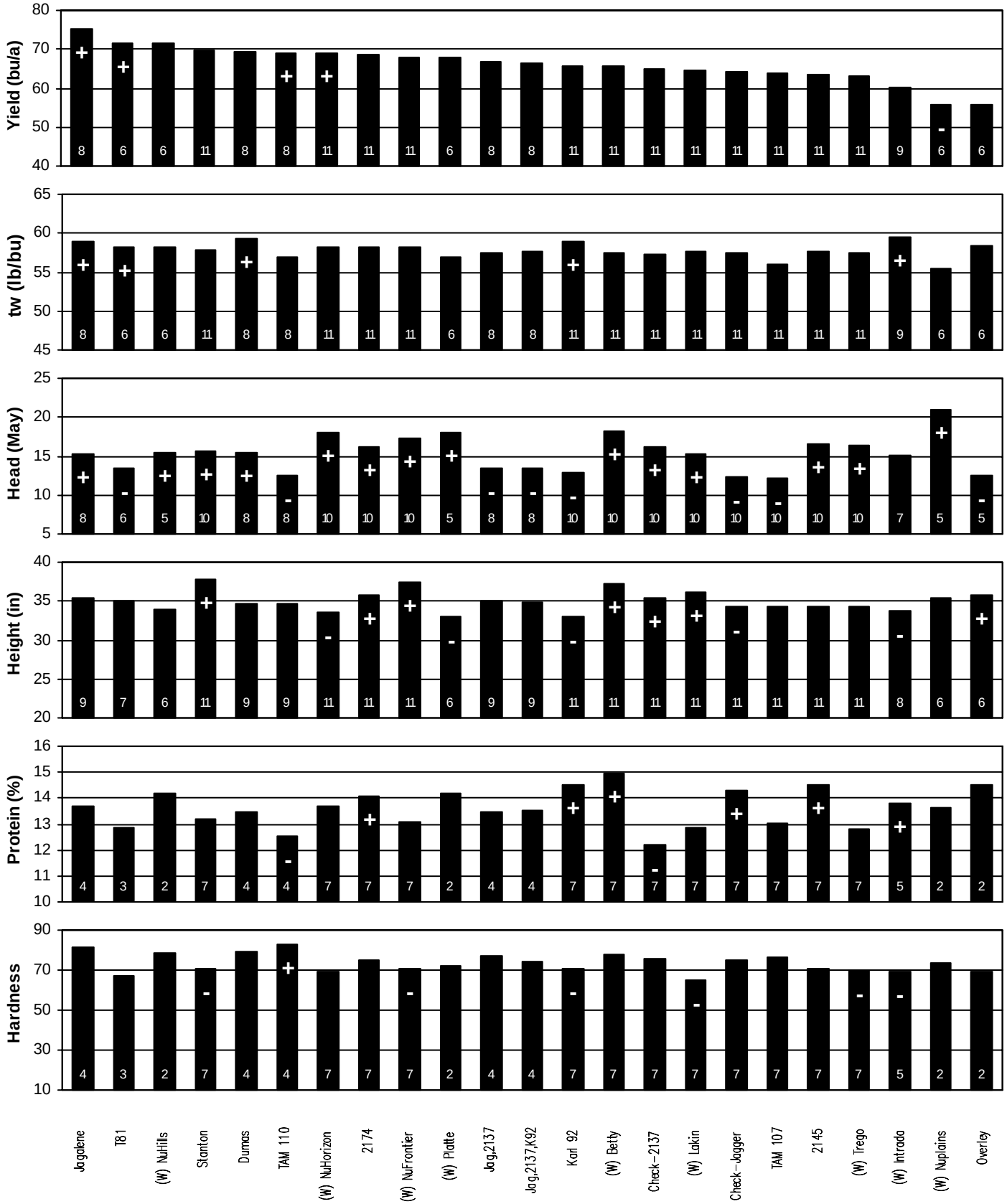
[2] GC = Garden City, KS, Southwest Research-Extension Center, Finney County

[3] HG = Hugoton, KS, Kramer Seed Farm, Stevens County

(W) = Hard white wheat

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

Figure 10. Wheat variety performance summary, IRRIGATED region, 2001-2004



+ = significantly greater than the average of the checks; - = significantly less than the average of the checks

Table 11. 2004 SOUTHWEST Kansas GRAZED Winter Wheat Performance Test.

Brand / Name	SJ[1]	SJ	SJ	SJ	SJ
	yield (bu/a)	% of test average	tw (lb/bu)	head (+/- Jagger)	height (in)
Farmer Direct					
(W) Arlin	40	95	56	-3	22
General Mills					
(W) NuFrontier	38	90	53	5	22
(W) NuHills	42	101	57	2	22
(W) NuHorizon	31	74	54	5	21
Rinck					
TAM 302	43	102	52	2	20
Public					
(W) Betty	37	88	54	3	23
(W) Intrada	40	95	56	1	21
(W) Trego	43	102	56	2	21
2137	46	111	56	3	21
2174	44	105	57	2	23
Jag,2137	48	114	56	1	22
Jagger	47	111	56	0	23
Ok101	46	110	56	0	20
Ok102	44	104	56	1	20
Overley	41	98	58	-1	24
Average	42	42	56	1	21
CV (%)	10	10	2	1	7
LSD (0.05)*	6	14	1	2	2

Stocked at a rate of 1 head per acre from December 8 through March 16. Cattle weighed 550 lb at start of grazing in December and gained an average of 2.7 lb/day over the entire grazing period. Grazing was uniform across all varieties. Cattle were removed just before jointing of the wheat. Harvest delayed by rain. All varieties more than 90% lodged at harvest.

[1] SJ = St. John, KS, Stafford County

(W) = Hard white wheat

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

Table 12. Shattering and lodging notes from 2004 Kansas Wheat Performance Tests.

Brand / Name	Shattering (%)[1]			Lodging (%)[2]						
	CL	DC	CO	CL	BE	CA	SJ	TR	GC	HG
AgriPro										
(W) Platte	--	--	--	--	--	--	--	0	0	1
AP502CL	--	3	0	--	--	--	75	--	--	--
Cutter	--	4	0	--	0	13	79	--	--	--
Dumas	--	--	--	--	--	--	--	1	0	1
Jagalene	--	5	0	--	0	9	58	40	43	4
TAM 111	--	4	0	--	--	--	33	15	3	6
Thunderbolt	--	6	3	--	--	--	36	--	--	--
W96-1311-01	--	--	--	--	0	4	--	--	--	--
W99-194	--	3	0	--	0	--	6	39	41	26
AGS										
(S) 2000	1	--	--	4	--	--	--	--	--	--
(S) 2485	3	--	--	5	--	--	--	--	--	--
AGSECO										
Gem	--	--	--	--	0	18	--	--	--	--
Onaga	--	--	--	--	--	3	--	--	--	--
TAM 110	--	3	0	--	--	--	81	11	26	3
DSS										
T81	--	4	0	--	--	--	56	5	1	5
Farmer Direct										
(W) Arlin	--	--	--	--	--	--	--	--	--	--
(W) Burchett	--	4	0	--	--	--	28	--	1	2
(W)Bakers White	--	--	--	--	--	--	--	--	14	3
(W)PrairieWhite	--	--	0	--	--	--	--	--	--	--
General Mills										
(W) GM10006	--	--	--	--	--	6	--	--	--	--
(W) NuFrontier	--	4	0	--	0	--	30	13	5	9
(W) NuHills	--	4	0	--	0	5	25	9	23	29
(W) NuHorizon	--	4	0	--	0	--	0	0	13	1
MFA										
(S) 2020	2	--	--	4	--	--	--	--	--	--
(S) 766	2	--	--	3	--	--	--	--	--	--
M-Pride										
(S)MPV14S-4SRW	4	--	--	8	--	--	--	--	--	--
NK										
(S) Coker 9184	0	--	--	2	--	--	--	--	--	--
(S) Coker 9663	4	--	--	17	--	--	--	--	--	--
Pioneer										
(S) 25R37	1	--	--	2	--	--	--	--	--	--
(S) 25R47	1	--	--	4	--	--	--	--	--	--
(S) 25R54	5	--	--	8	--	--	--	--	--	--
Polansky										
Dominator	--	--	--	--	0	8	--	--	--	--
Rinck										
TAM 302	--	--	--	--	0	--	--	15	--	--
Public										
(S) Kaskaskia	3	--	--	10	--	--	--	--	--	--
(S) Pat	2	--	--	4	--	--	--	--	--	--
(S) Roane	7	--	--	5	--	--	--	--	--	--
(S) Sabbe	3	--	--	3	--	--	--	--	--	--
(S) Truman	0	--	--	18	--	--	--	--	--	--
(W) Avalanche	--	3	3	--	--	--	39	--	--	--
(W) Betty	--	5	0	--	0	--	8	3	18	3
(W) Intrada	--	6	5	--	0	--	81	14	20	15
(W) Lakin	--	4	5	--	0	--	29	1	0	1
(W) Nuplains	--	4	0	--	0	--	4	36	61	8
(W) Trego	--	3	0	--	0	--	51	5	65	29
2137	0	5	11	2	0	4	8	1	0	2
2145	--	5	13	--	0	5	9	1	31	10
2163	--	--	--	--	--	--	--	--	--	--
2174	--	4	0	--	0	7	6	0	40	3
Above	--	3	0	--	--	--	70	--	--	--
Ankor	--	3	0	--	--	--	51	--	--	--
Goodstreak	--	--	3	--	38	--	--	--	--	--
Harry	--	--	0	--	0	--	--	--	--	--
Ike	--	3	0	--	0	--	46	--	--	--
Jag,2137	--	5	3	--	0	10	55	6	28	5
Jag,2137,Dom	--	--	--	--	0	--	--	--	--	--
Jag,2137,K92	--	--	--	--	--	7	--	11	14	7
Jag,2137,Stan	--	5	3	--	--	--	49	--	--	--
Jagger	0	6	3	20	0	14	76	30	78	22
Karl 92	--	3	0	--	0	6	23	3	29	4
KS01HW152-6	--	4	0	--	2	--	70	35	53	59
KS01HW163-4	--	3	0	--	0	8	70	10	28	39
KS02HW34	--	3	0	--	0	10	19	13	51	6
Millennium	--	--	8	--	0	--	--	--	--	--
Ok101	--	4	0	--	--	7	55	0	1	2
Ok102	--	4	0	--	0	7	5	0	1	3
Overley	--	6	9	--	0	9	31	9	4	6
Prairie Red	--	3	0	--	--	--	78	--	--	--
Stanton	--	3	0	--	0	--	34	6	41	6
TAM 107	--	3	0	--	--	--	71	16	13	5
Wahoo	--	--	3	--	7	--	--	--	--	--
Wesley	--	3	0	--	0	--	55	--	--	--
Average	2	4	2	7	1	8	42	11	23	10
CV (%)	85	17	173	77	166	51	50	130	108	104
LSD (0.05)*	3	1	4	8	4	6	30	20	35	15

[1] CL=Columbus Soft, DC=Dodge City, CO=Colby Irr.

[2] CL=Columbus Soft, BE=Belleville, CA=Caldwell, SJ=St. John, TR=Tribune Irr., GC=Garden City Irr., HU=Hugoton Irr.

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

Table 13. Planted seed characteristics, coleoptile lengths, and Hessian fly ratings.

Brand / Name	1000 Seed weight (grams)	Test weight (lb/bu)	Seeds per lb. (1000)	Col. length (1-9) [1]	Hess. fly [2]
AgriPro					
(W) Platte	32.4	62.4	14.0	6	S
AP502CL	30.6	56.4	14.8	5	S
Cutter	37.6	60.7	12.1	5	S
Dumas	33.4	63.6	13.6	6	S
Jagalene	38.6	61.6	11.8	6	S
TAM 111	36.0	60.7	12.6	--	S
Thunderbolt	35.8	61.5	12.7	6	S
W96-1311-01	33.8	60.4	13.4	--	S
W99-194	33.0	59.6	13.8	--	S
AGS					
(S) 2000	41.0	58.0	11.1	4	S
(S) 2485	35.8	58.0	12.7	5	S
AGSECO					
Gem	30.0	62.2	15.1	5	S
Onaga	30.6	62.3	14.8	6	R-
TAM 110	32.4	61.1	14.0	5	S
DSS					
T81	33.8	62.6	13.4	7	S
Farmer Direct					
(W) Arlin	37.0	61.2	12.3	6	S
(W)Bakers White	26.2	57.2	17.3	6	S
(W) Burchett	26.2	58.6	17.3	5	S
(W)PrairieWhite	23.2	54.2	19.6	7	S
General Mills					
(W) NuHills	34.2	64.3	13.3	7	S
(W) GM10006	28.0	63.6	16.2	--	S
(W) NuFrontier	27.8	62.2	16.3	5	H-
(W) NuHorizon	38.4	64.9	11.8	5	S
MFA					
(S) 2020	33.6	58.2	13.5	--	H-
(S) 766	33.6	62.6	13.5	8	S
M-Pride					
(S)MPV14S-4SRW	38.2	57.8	11.9	--	S
NK					
(S) Coker 9184	32.6	60.2	13.9	--	S
(S) Coker 9663	40.0	60.8	11.4	3	S
Pioneer					
(S) 25R37	40.2	58.8	11.3	--	S
(S) 25R47	36.6	57.1	12.4	--	S
(S) 25R54	36.6	58.1	12.4	--	R-
Polansky					
Dominator	29.2	63.2	15.6	8	S
Rinck					
TAM 302	28.0	55.7	16.2	5	S
Public					
(S) Pat	35.2	55.0	12.9	8	S
(S) Sabbe	33.6	53.1	13.5	4	S
(W) Avalanche	43.6	61.3	10.4	7	S
Above	32.0	57.5	14.2	5	S
Ankor	36.8	59.5	12.3	5	S
Prairie Red	42.8	59.6	10.6	5	S
(S) Kaskaskia	33.2	61.6	13.7	6	S
(W) Betty	27.6	62.0	16.5	7	S
(W) Lakin	36.0	63.5	12.6	7	S
(W) Trego	26.4	58.8	17.2	6	S
2137	28.8	57.2	15.8	7	H
2145	30.8	59.0	14.7	6	S
2163	30.8	57.1	14.7	7	H+
Ike	32.8	60.7	13.8	7	H+
Jag,2137	30.0	58.5	15.1	--	--
Jag,2137,Dom	30.8	60.6	14.7	8	--
Jag,2137,K92	31.8	59.6	14.3	7	--
Jag,2137,Stan	32.0	59.9	14.2	6	--
Jagger	32.4	58.9	14.0	6	S
Karl 92	33.0	61.1	13.8	7	S
KS01HW152-6	29.2	57.5	15.6	--	S
KS01HW163-4	29.4	60.1	15.4	--	S
KS02HW34	26.8	58.7	16.9	--	S
Overley	44.8	61.4	10.1	5	S
Stanton	35.0	61.7	13.0	6	S
(S) Truman	33.2	60.2	13.7	7	S
(W) Nuplains	26.0	62.6	17.5	7	S
Goodstreak	28.6	62.4	15.9	3	S
Harry	33.4	58.1	13.6	8	H
Millennium	32.0	61.6	14.2	7	H
Wahoo	26.8	56.8	16.9	6	H-
Wesley	35.8	60.7	12.7	7	S
(W) Intrada	32.2	61.5	14.1	6	S
2174	31.6	59.9	14.4	5	S
Ok101	34.2	58.4	13.3	8	H-
Ok102	28.4	59.0	16.0	--	H
TAM 107	33.8	59.0	13.4	5	S
(S) Roane	31.2	63.0	14.6	7	H
Maximum	44.8	64.9	19.6	8	
Minimum	23.2	53.1	10.1	3	
Average	32.9	60.0	14.0	6	

[1] Coleoptile length measured at 75 degrees F, which is the average soil temperature at 4" in western Kansas on September 1. Coleoptile rating of 3 is long and is equal to about 4.2", a rating of 8 is short and is equal to about 2.4". See discussion of coleoptile length on page 3. Ratings provided by T. Joe Martin, Kansas State University Agricultural Research Center - Hays.

Coleoptile ratings were not updated in 2004 because of technical staff shortages over the winter months. Values are presented from previous years' screening.

[2] Hessian fly ratings by E. Parker, USDA; S = majority of plants susceptible, H = mixture of susceptible and resistant plants (heterogenous), R = majority of plants resistant. Tested with the Great Plains Hessian fly.

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