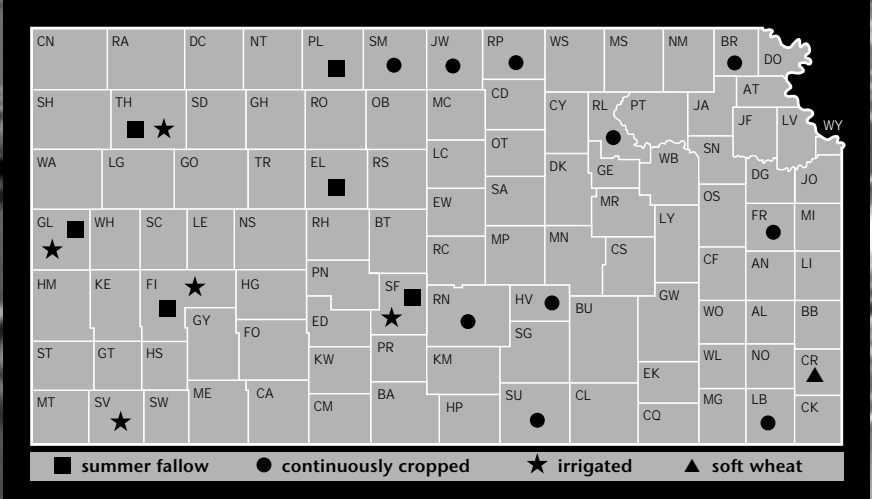
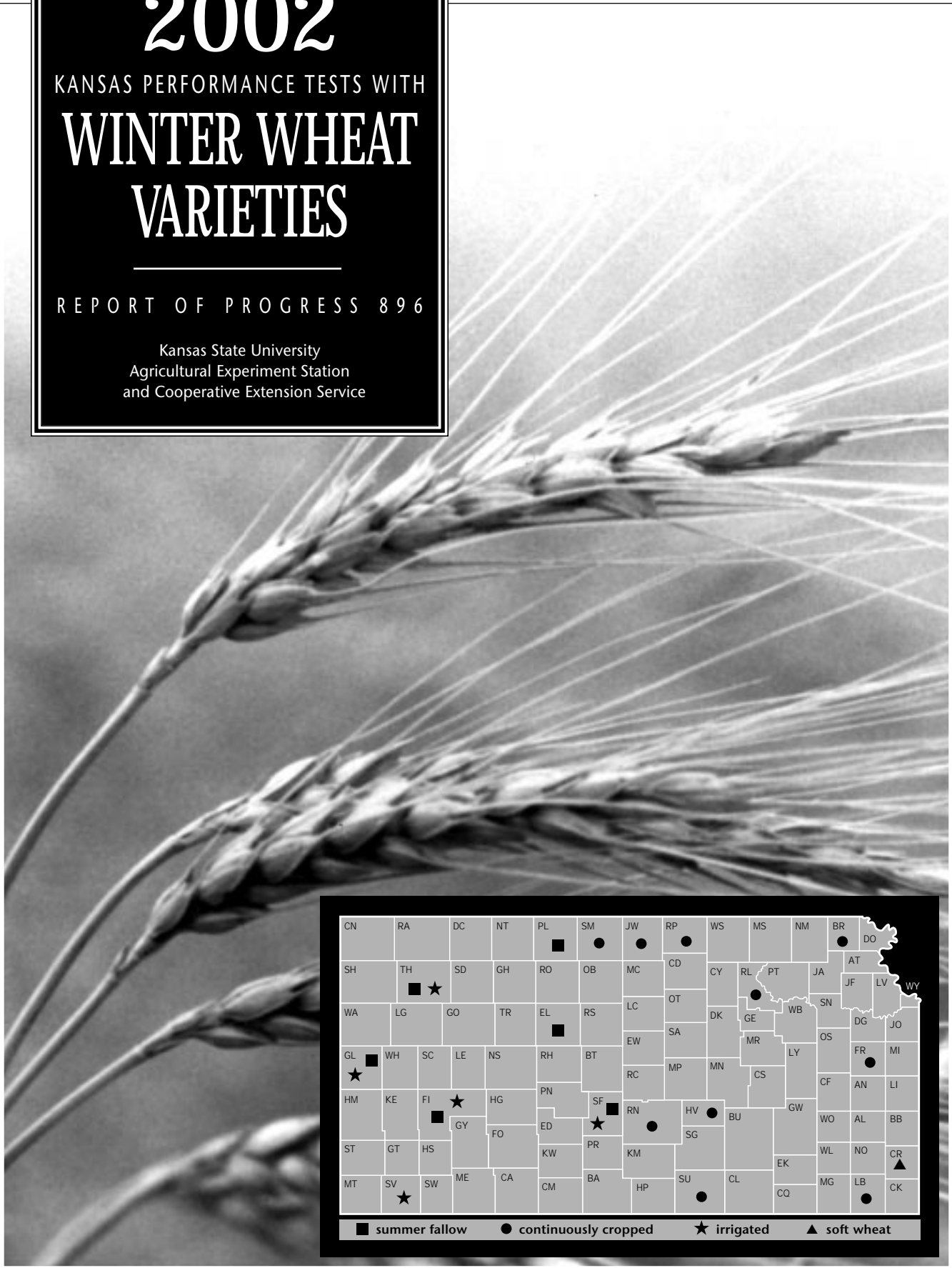


2002

KANSAS PERFORMANCE TESTS WITH
WINTER WHEAT
VARIETIES

REPORT OF PROGRESS 896

Kansas State University
Agricultural Experiment Station
and Cooperative Extension Service



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Table 1. Private entrants in the 2002 Kansas Wheat Performance Tests.

AgriPro AgriPro Wheat, Inc. 6515 Ascher Rd Junction City, KS 66441 785-210-0218	Drussel Drussel Seed and Supply 2197 W Parallel Road Garden City, KS 67846 620-275-2359	MFA MFA Incorporated 201 Ray Yound Dr. Columbia, MO 65201 573-876-5285	Pioneer Pioneer, A DuPont Co. 390 Union Blvd, Suite 500A Lakewood, CO 80228 303-716-3960
AGS AGSouth Genetics, LLC 6830 Lisa Lane Dunwoody, GA 30338 770-350-0011	General Mills General Mills Operations, Inc. PO Box 5022 Great Falls, MT 59403 406-761-6252	M-Pride Midwest Premium Genetics 101NE Davis Rd, PO Box 688 Concordia, MO 64020 800-662-1150	Polansky Polansky Seed PO Box 306, 2729 M St Belleville, KS 66935 785-527-2271
AGSECO DeLange Seed (AGSECO) PO Box 7 Girard, KS 66743 620-724-6223	Goertzen Goertzen Seed Research 14604 S Haven Rd Haven, KS 67543 620-465-2675	NK Syngenta Seeds PO Box 1240 Winterville, NC 28590 252-746-3004	WPB Western Plant Breeders 6025 W 300 S Lafayette, IN 47909 765-572-2905

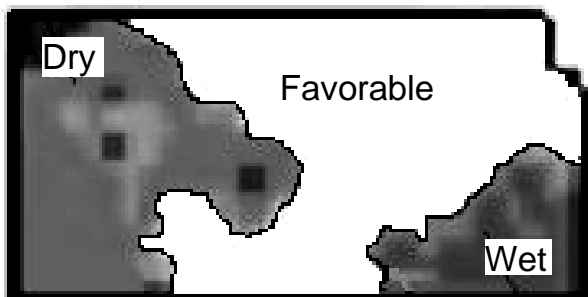
2002 WHEAT CROP REVIEW

Crop Development

The 2002 wheat crop started off ahead of last year's pace with over 90% emerged by late October. Over 70% of the crop was in good or excellent condition through early November. However, the condition of the crop deteriorated steadily from November through April in response to below-normal precipitation, especially in western Kansas. By early June, 80% of the acres were rated as fair to very poor. Many of the spring rains were too late to be of much benefit to a crop that had been subjected to moisture stress all winter. From November through April, 70%-80% of the crop acres were rated as being short or very short of topsoil moisture. Much of the dryland wheat in western Kansas never developed an adequate root system and wasn't able to take advantage of the limited spring rainfall. Fields that had good moisture conservation techniques applied did better than might otherwise have been expected.

Jointing started quickly, but soon lagged behind average. Heading tracked fairly closely with previous years. Western areas had to contend with scattered freeze damage in late May. Warm conditions in late May and early June hastened maturation so that the wheat ripened ahead of average. Heavy rains in southeast Kansas delayed harvest to some extent, increased diseases, and reduced grain quality. Several areas suffered considerable damage from hail. Hot, dry weather in late June enabled rapid completion of harvest after a slow start. Nearly 60% of the crop was harvested during the last week of June. (From *Crop-Weather* reports, Kansas Ag. Statistics, and Mary Knapp, KSU State Climatologist).

Figure 1. May precipitation distribution.



Diseases

Diseases began to appear last fall. Low infestations of speckled leaf blotch, leaf rust, and wheat streak mosaic occasionally were found in the central third of the state by early November. Crazy top was found in low-lying areas in some fields. By mid-November, these diseases were found in southwest Kansas, especially in early, irrigated fields.

Dry conditions in early spring limited disease development. Low levels of speckled leaf blotch were observed in central Kansas in early April. Powdery mildew was seen in several fields in southeast Kansas, occasionally at a moderate level. Light levels of *septoria nodorum* leaf blight were found in

some southern fields. Soil borne mosaic was identified in southeast Kansas. Spindle streak and barley yellow dwarf were confirmed in central and eastern Kansas, respectively.

By mid-May, tan spot and leaf rust had advanced to the flag leaf in southern fields, but incidences were relatively low. Barley yellow dwarf and wheat streak mosaic were reported at moderate levels in south central and central wheat fields. Foliar disease remained low in the west, northeast, and north-central regions. Other diseases included powdery mildew, one case of strawbreaker, dryland foot rot in south-central Kansas, loose smut in south-central and central Kansas, speckled leaf blotch in central, southeast, and east-central Kansas, and some stripe rust in south-central Kansas.

May rains allowed foliar diseases to increase. Tan spot, barley yellow dwarf, and leaf rust were common on flag leaves in central and southeast Kansas by late May. In some fields, all leaves were lost to disease. Take all, dryland foot rot, scab, and bunt were seen in extreme southern counties. (Kansas Department of Agriculture Plant Disease Reports).

Insects

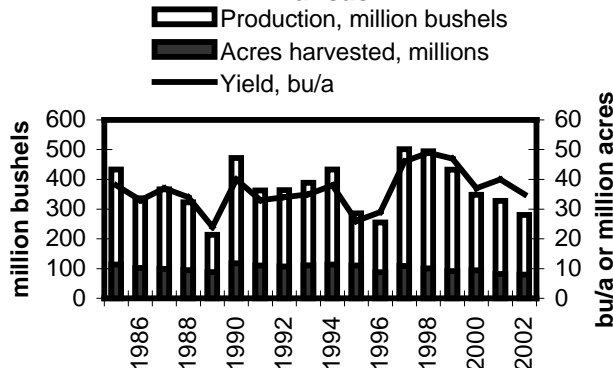
Significant fall insect activity involved oat birdcherry aphids and greenbugs. The winter grain mite and army cutworm occasionally were found in south-central fields. Chinch bugs damaged some fields after sorghum, sudan, or wheat.

Spring insect activity was fairly limited. Small numbers of army cutworm were found in about the western half of the state in early March; however, damage developed in some south-central fields. Considerable acreages were treated in March in parts of Reno, Sumner, and Harper counties. Lack of moisture slowed recovery in some of those treated fields. Only trace numbers of Russian wheat aphid were found in a small number of southwest Kansas fields. (From Kansas Department of Agriculture Cooperative Economic Insect Reports and Extension Entomologist, Leroy Brooks).

Harvest Statistics

The Kansas Agricultural Statistics' July 11 estimate of the 2002 crop was 272.0 million bushels from 8.0 million acres. That is the lowest harvested acreage since 1957. This continues the 5-year decline in total production since the 1997 crop of close to 500 million bushels. (From July 11, 2002 *CROPS* report, Kansas Ag. Statistics, Topeka).

Figure 2. Historical wheat production in Kansas



Acreage Distribution

The top five varieties occupied 68.0% of the state's seeded acreage in 2002. Including the blends as a single variety increased that to 76.4%. (From February 12, 2001, *Wheat Variety* report, Kansas Ag. Statistics, Topeka).

Figure 3. Leading wheat varieties in Kansas
Percent of seeded acreage for 2002 and (2001) crops

Jagger 27(22) 2137 16(21) Blends 10(3) Vista 9(11) TAM 107 9(14)	Blends 29(21) Jagger 21(19) 2137 18(25) Karl/K-92 15(13) Dominator 6(6)	2137 43(37) Karl/K-92 26(24) Jagger 10(11) Blends 6(6) Dominator 3(5)
Jagger 19(14) 2137 18(25) TAM 110 15(12) TAM 107 11(19) Ike 7(9)	Jagger 41(31) 2137 20(32) Blends 16(11) Dominator 6(4) Karl/Karl 92 4(4)	2137 35(36) Jagger 28(27) Karl/K-92 13(9) 2163 5(4) Blends 4(3)
Jagger 33(22) 2137 12(19) Ike 12(13) TAM 110 11(11) TAM 107 7(15)	Jagger 63(55) 2137 11(18) Blends 9(5) 2174 7(6) Coronado 1(2)	Jagger 51(50) 2137 28(26) Karl/K-92 5(5) 2174 4(3) Blends 2(1)

2002 PERFORMANCE TESTS

Objectives

To help Kansas growers select wheat varieties suited for their area and conditions, the Kansas Agricultural Experiment Station annually compares both new and currently grown varieties in the state's major crop-producing areas. These tests provide Kansas growers with unbiased performance information on varieties available in the state.

Varieties Included in Tests

Public varieties are selected for inclusion in the tests based on 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 2002 private entrants are listed in Table 1. Twelve entrants provided a total of 41 varieties for testing.

Table 15 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. Five locations had to be abandoned because of drought or hail. The western locations were affected by extremely dry, stressful conditions, significantly affecting

test results. Site descriptions and management practices for each site are summarized in Table 3 on page 4.

Test Results and Variety Characterization

Results from Kansas tests are presented in Tables 4 through 14. The information in these tables is from replicated comparisons at several sites located across the state.

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 a variety of reasons. Planting varieties with a range of maturities helps minimize weather risks.

At the bottom of each table is the 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 it to be significant. 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 the same variety grown only a short distance apart.

Coleoptile length (Table 15) measurements predict 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 below 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 4-8 summarize the performance of each variety standardized to the average of two check varieties: Jagger and 2137. These were the most popular varieties in 2002 with 58.3% of the total wheat acreage in Kansas. The number of direct comparisons of a given variety with the check varieties has a bearing on the confidence one can place in the performance of that variety. The number beside each bar shows the number of times that variety was compared to the check varieties. In general, the more comparisons, the greater confidence one has in a value.

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

Variety ¹	Percent Kansas seeded acreage 2002 ¹	Relative ²										Relative milling and baking quality ⁴	Resistance or tolerance to: ⁵													
		Test weight	Straw strength	Matur- ity	Coleop- tile		Shat- tering	Winter hardi- ness	AI Toler- ance	Protein content ³	Soil- borne mosaic		Spindle streak mosaic	Wheat streak mosaic	Barley yellow dwarf	Leaf rust	Stem rust	Stripe rust	Speckled			Powd- ery mildew	Hes- sian fly	Russ. wheat aphid		
					Height ³	length													leaf	Glume blotch	Tan spot				Head scab	
Jagger	42.8	4	4	1	5	6	5	6	3	3	EX*	1	2	4	7	8	3	1	3	6	3	7	8	9	9	
2137	15.5	4	1	3	5	7	5	3	2	7	AC	1	5	4	6	7	7	8	4	7	4	4	9	2	9	
Karl/Karl 92	3.6	3	4	1	3	7	3	3	9	3	EX*	1	3	9	8	9	6	3	5	3	3	5	9	9	9	
2174	3.1	3	1	3	4	5	3	4	5	3	AC	1	5	7	5	6	8	5	4	7	5	2	5	9	9	
TAM 110	3.0	3	2	1	5	5	2	--	8	7	AC	9	7	5	8	9	3	8	6	6	7	1	--	9	9	
TAM 107	2.9	4	2	1	4	5	2	2	9	6	LD	8	7	5	8	9	3	8	6	6	6	1	7	9	7	
Ike	2.6	3	4	4	6	7	2	3	8	3	AC	1	5	9	6	9	3	6	8	6	7	6	7	1	9	
Dominator	2.0	4	3	4	2	8	7	3	8	3	AC	1	1	7	6	8	3	6	4	4	5	4	7	3	9	
2163	1.3	6	1	3	3	7	6	4	2	7	LD	1	4	4	6	7	4	7	4	8	5	2	9	2	9	
Larned	0.9	4	5	4	9	3	3	3	8	4	AC	9	8	9	9	8	2	2	7	8	9	5	6	3	9	
Vista	0.9	4	6	5	2	8	3	2	7	6	AC*	8	7	9	7	7	6	1	5	6	8	4	--	1	9	
T81	0.8	4	--	2	4	7	--	--	--	8	--	8	4	6	7	7	3	2	7	--	6	1	--	8	9	
Trego (W)	0.8	3	4	4	4	6	2	2	8	7	AC	2	4	5	7	2	2	8	7	5	7	8	9	6	9	
Coronado	0.7	3	1	2	3	8	4	5	3	3	AC	1	3	6	6	7	3	6	6	6	4	9	5	9	9	
Thunderbolt	0.6	2	--	3	7	6	--	--	7	4	AC	8	7	5	7	1	8	5	--	--	6	7	--	9	9	
7853	0.4	4	4	3	5	7	3	5	8	3	EX	1	5	5	6	7	4	7	9	5	6	4	7	9	9	
Akron	0.4	3	5	5	6	6	3	3	--	7	AC	9	9	9	9	8	3	4	9	7	7	1	--	8	9	
Ogallala	0.4	2	2	3	2	7	6	4	5	2	EX	9	8	5	7	5	3	6	5	6	6	6	--	9	9	
Alliance	0.3	4	4	4	6	8	3	3	--	8	AC	9	7	9	9	8	2	3	7	--	7	--	--	2	9	
Tomahawk	0.3	4	3	3	5	6	3	2	8	4	AC	1	4	8	8	4	3	8	8	8	4	3	9	9	9	
Pecos	0.2	4	1	1	3	7	4	5	5	--	AC	1	6	6	7	7	5	8	5	4	6	6	--	3	9	
Big Dawg	0.2	4	1	6	7	4	3	5	5	2	AC	1	2	4	7	7	5	1	2	3	3	6	7	9	9	
Niobrara	0.2	4	5	3	7	6	3	3	6	8	AC	8	7	7	--	7	3	8	7	7	8	--	--	9	9	
Eagle	0.2	4	5	4	--	--	2	3	--	--	EX*	9	9	7	9	8	4	--	7	--	9	5	--	9	9	
Onaga	0.2	3	--	3	2	6	--	--	--	3	--	1	5	5	6	5	8	6	5	--	8	4	5	5	8	
Prairie Red	0.2	4	2	1	4	5	2	2	9	6	--	9	7	5	8	9	3	8	6	6	7	1	7	9	4	
Scout / S66	0.2	4	6	4	9	3	3	3	8	3	AC	9	7	7	9	8	3	1	7	9	9	5	--	9	9	
Longhorn	0.2	3	1	5	6	3	5		7	4	LD	9	7	5	6	5	1	--	7	5	6	3	--	9	9	
Blends	11.4																									
Other White	0.3																									
Other Red	3.3																									
Other Soft	0.1																									

Scale: 1=Best 1=Best 1=Early 1=Short 1=Long 1=Best 1=Best 1=Best 1=Best 1=Best
9=Poor 9=Poor 9=Late 9=Tall 9=Short 9=Poor 9=Poor 9=Poor 9=Poor 9=Poor

Scale: 1=Most resistant/tolerant
9=Least resistant/tolerant

¹ Varieties and percent seeded acreage from the Feb. 7, 2002, 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 Allen 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.

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 Joe Martin, Hays; W.W. Bockus, KSU Plant Pathology; and Leroy Brooks, KSU Entomology. Final ratings and descriptions of disease and insect pests are available in "Wheat Variety Disease and Insect Ratings 2002".

Table 3. Wheat Performance Test site descriptions and management in 2002.

REGION / Location	Soil / crop	N	P	K	Plant-harvest	Conditions	
<u>EAST</u>							
Bunck Seed Farms (BR) Everest	Grundy silty clay loam Corn, 2001	75 --	-- 20	-- --	Fall Spring	10/8/01 - 7/3/02 90 lb/a	Good stands; dry winter, wet spring, very dry grain fill period; tan spot a significant factor
Ashland Agronomy Farm (RL) Manhattan	Reading silt loam Oats, 2001	40 50	-- --	-- --	Fall Spring	9/29/01 - Abandoned 75 lb/a	Hail on April 21 hurt early varieties, others recovered somewhat, but too variable to use
EC KS Experiment Field (FR) Ottawa	Woodson silt loam Wheat, 2001	8 80	32 --	16 --	Fall Spring	10/12/01 - 6/26/02 1200000 seeds/a	Good stands; dry winter; cool, wet spring until mid-June; BYD & leaf rust but damage minimal
SE Agric Res Ctr (LB) Parsons	Parsons silt loam Corn, 2001	70 60	60 --	60 --	Fall Spring	10/17/01 - 6/20/02 75 lb/a	Ideal winter & spring, excellent growth and tillering, freeze & wind in March; severe BYD
4-State Farm Show (CS) Pittsburg	silt loam 6.3 Fallow, 2001	50 100	50 --	50 --	Fall Spring	10/18/01 - 6/19/02 75 lb/a	Good fall, winter; freeze damage in March; powdery mildew, tan spot; severe BYD
<u>NORTH CENTRAL</u>							
NC KS Experiment Field (RP) Belleville	Crete silt loam 6 Corn, 2000	80 --	30 --	-- --	Fall Spring	10/2/01 - 6/28/02 90 lb/a	Good stands, fall growth; dry winter, but spring rains helped produce good yields
Farmer's Field (JW) Mankato	Silty loam 6.2 Soybeans, 2001	50 30	20 --	-- --	Fall Spring	10/23/01 - 7/2/02 90 lb/a	No-till; good stands, fall growth, winter survival; very dry spring; timely rains in late May
Farmer's Field (SM) Smith Center	Silty loam 6 Sorghum, 2000	80 --	30 --	-- --	Fall Spring	9/26/02 - Abandoned 90 lb/a	Looked great until a hail storm destroyed the test on May 26
Farmer's Field (PH) Phillipsburg	Silty loam 6.5 Sorghum, 2000	80 --	30 --	-- --	Fall Spring	9/25/01 - 6/24/02 60 lb/a	Good moisture at planting; good stands, tillering; dry spring, very dry summer
<u>SOUTH CENTRAL</u>							
Harvey Co Expt Field (HV) Hesston	Ladysmith silty clay loam Soy, 2001	91 --	32 --	-- --	Fall Spring	10/3/01 - 6/24/02 60 lb/a	Good stands, tillering, winter survival; minimal freeze damage; April rain; May dry; late rust
SC KS Experiment Field (RN) Hutchinson	Ost silt loam Sorghum, 2000	75 50	40 --	-- --	Fall Spring	N/A - Abandoned 60 lb/a	Good stands; dry winter, slow spring growth; little disease; June rains late; hail shattered grain
Sandyland Expt Field (SD) St. John	sandy loam Sorghum, 2000	68 50	46 --	-- --	Fall Spring	10/4/01 - 6/20/02 60 lb/a	Good stands, fall growth; dry winter, cold snaps; good spring rain, 4.1" in June; little/no disease
Max Kolarik Farm (SU) Caldwell	Sandy loam Wheat, 2001	70 --	25 --	-- --	Fall Spring	9/26/01 - 6/17/02 60 lb/a	Good stands; dry winter; spring rains beneficial but late; some tan spot, rust
<u>WEST</u>							
Agric Res Ctr - Hays (EL) Hays	Harney clay loam Wheat, 2000	-- 75	-- --	-- --	Fall Spring	10/1/01 - 6/19/02 60 lb/a	Good stands; dry fall, winter; average April rains, high temps; May and June precip. below normal
NW Res-Ext Ctr (TD) Colby	Keith silt loam 7.7 Wheat, 2000	58 --	-- --	-- --	Fall Spring	9/26/01 - 6/27/02 60 lb/a	Good stands but dry winter & spring; some freeze damage; hot, dry May & June
SW Res-Ext Ctr (GD) Tribune	Richfield silt loam Corn, 2000	5 60	25 --	-- --	Fall Spring	9/14/01 - 6/21/02 55 lb/a	Good stands; dry winter, spring; some winter kill; dry summer; minimal pest problems
SW Res-Ext Ctr (FD) Garden City	Keith silt loam Wheat, 2000	60 --	-- --	-- --	Fall Spring	9/28/01 - 6/24/02 45 lb/a	Good fall growth, but no root system; very dry winter and spring; wind & heat in early June
<u>IRRIGATED</u>							
Sandyland Expt Field (SI) St. John	silt loam Corn, 2001	68 50	46 --	-- --	Fall Spring	10/8/01 - 6/25/02 90 lb/a	Good stands, fall growth; minor stand loss; insect & diseases minimal; 4.1" rain in June
NW Res-Ext Ctr (TI) Colby	Keith silt loam 7.4 Wheat, 2001	100 --	40 --	-- --	Fall Spring	9/27/01 - 6/28/02 90 lb/a	Good stands; dry, mild winter; hot, dry May and June; early drydown; minimal disease
SW Res-Ext Ctr (FI) Garden City	Keith silt loam Corn, 2000	120 --	-- --	-- --	Fall Spring	9/26/01 - 6/26/02 75 lb/a	Good stands, fall growth, winter survival; hot, dry spring and summer; minimal disease pressure
SW Res-Ext Ctr (GI) Tribune	Silty loam Wheat, 2001	5 120	25 --	-- --	Fall Spring	9/20/01 - Abandoned 80 lb/a	Good stands in fall; dry winter, spring; looked fine until June 12 hail storm destroyed the test
Jim Kramer Farm (SV) Hugoton	Richfield sandy loam Corn, 2001	50 50	30 --	-- --	Fall Spring	10/2/01 - Abandoned 90 lb/a	Weather stresses and soil compaction problems forced test to be abandoned

Table 4. Yield, 2002 EASTERN Kansas Winter Wheat Performance Tests.

Brand / Name	BR ¹	FR ²	LB ³	Avg.	CS ⁴	BR	FR	LB	Avg.	CS	Everest-1		Ottawa-2		Parsons-3	
	bushels/acre					% of test average					multi-year averages, bushels/acre					
	2YR	3YR	2YR	3YR	2YR	3YR	2YR	3YR	2YR	3YR	2YR	3YR	2YR	3YR	2YR	3YR
AgriPro																
Cutter	47	49	26	41	--	95	104	82	93	--	--	--	--	--	38	--
Hondo	48	--	--	--	--	96	--	--	--	--	48	44	--	--	--	--
Jagalene	62	51	37	50	--	124	109	114	115	--	--	--	--	--	--	--
AGS																
(S) 2000	--	--	--	--	23	--	--	--	--	74	--	--	--	--	--	--
AGSECO																
Exp 2047	56	51	31	46	--	111	109	95	105	--	--	--	--	--	--	--
Exp 2139	50	--	--	--	--	100	--	--	--	--	--	--	--	--	--	--
Onaga	52	46	38	45	--	104	99	117	107	--	48	46	47	48	44	45
General Mills																
(SW) GM30001	42	44	20	35	--	84	93	61	79	--	--	--	--	--	--	--
(SW) GM30002	40	46	25	37	--	79	98	77	85	--	--	--	--	--	--	--
(W) NuFrontier	38	51	29	39	--	75	109	89	91	--	41	--	55	--	39	--
(W) NuHorizon	43	50	22	38	--	86	106	67	86	--	46	--	52	--	32	--
Goertzen																
Venango	59	52	34	48	--	117	112	106	111	--	50	46	54	55	44	--
MFA																
(S) 1828	--	--	--	--	31	--	--	--	--	102	--	--	--	--	--	--
(S) 766	--	--	--	--	40	--	--	--	--	130	--	--	--	--	--	--
M-Pride																
(S)MPV7921SRW	--	--	--	--	31	--	--	--	--	102	--	--	--	--	--	--
NK																
(S) BL940812	--	--	35	--	32	--	--	109	--	106	--	--	--	--	--	--
(S) Coker 9025	--	--	36	--	23	--	--	112	--	75	--	--	--	--	38	43
(S) Coker 9474	--	--	40	--	35	--	--	125	--	115	--	--	--	--	45	48
(S) Coker 9663	--	--	47	--	26	--	--	145	--	84	--	--	--	--	50	56
Pioneer																
(S) 25R49	--	--	--	--	45	--	--	--	--	148	--	--	--	--	--	--
(S) 25R78	--	--	--	--	47	--	--	--	--	153	--	--	--	--	--	--
Polansky																
Dominator	46	46	26	39	--	93	98	80	90	--	46	45	--	--	--	--
WPB																
(S) Y98-912	--	--	--	--	28	--	--	--	--	91	--	--	--	--	--	--
(S) Z98*912	--	--	--	--	26	--	--	--	--	85	--	--	--	--	--	--
Public																
(S) Caldwell	51	49	31	44	24	102	105	97	101	79	47	45	52	53	38	43
(S) Kaskaskia	57	50	39	49	26	115	107	122	115	86	61	55	53	54	45	49
(S) Roane	--	--	41	--	40	--	--	126	--	130	--	--	--	--	--	--
2137	59	47	35	47	27	119	100	109	109	89	55	49	54	55	45	47
2145	53	50	32	45	--	106	106	100	104	--	50	46	42	46	40	43
2163	45	43	28	39	--	90	92	87	89	--	43	40	53	54	24	34
2174	47	43	36	42	--	93	93	112	100	--	44	43	49	50	46	46
Jag,2137	55	46	33	45	--	109	99	101	103	--	--	--	--	--	--	--
Jag,2137,Dom	56	46	34	46	--	111	99	107	106	--	--	--	--	--	--	--
Jagger	60	39	27	42	15	119	84	83	95	51	55	51	51	48	40	45
Karl 92	47	42	39	43	--	95	90	121	102	--	52	49	49	47	47	47
Scout 66	39	42	9	30	--	78	90	29	65	--	38	37	41	42	18	20
Average	50	47	32	43	31	50	47	32	43	31	--	--	--	--	--	--
CV (%)	16	6	13	--	16	16	6	13	--	16	--	--	--	--	--	--
LSD (0.05)**	11	4	6	--	7	22	8	18	--	23	--	--	--	--	--	--

¹ BR = Brown County test at Bunck Seed Farm, Everest, KS.

³ LB = Labette County test at KSU SE Ag. Res. Center, Parsons, KS.

² FR = Franklin County test at East Central Exp. Field, Ottawa, KS.

⁴ CS = Crawford County Soft Wheat Test, Pittsburg, KS.

(S)=Soft; (W)=White

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

Table 5. TW, Heading, Height, 2002 EASTERN Kansas Winter Wheat Performance Tests.

Brand / Name	BR ¹	FR ²	LB ³	Avg. CS ⁴		BR	FR	LB	Avg. CS		BR	FR	LB	Avg. CS	
	test weight (lb/bu)				heading (days +/- Scout)					plant height (in)					
AgriPro															
Cutter	58	61	55	58	--	--	-2.0	-2.8	-2.4	--	--	33	35	34	--
Hondo	59	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jagalene	58	61	57	59	--	--	-2.3	-4.5	-3.4	--	--	32	35	33	--
AGS															
(S) 2000	--	--	--	--	57	--	--	--	--	6.0	--	--	--	--	33
AGSECO															
Exp 2047	57	61	55	58	--	--	-1.3	-3.5	-2.4	--	--	31	33	32	--
Exp 2139	55	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Onaga	59	63	58	60	--	--	-1.8	-3.8	-2.8	--	--	31	33	32	--
General Mills															
(SW) GM30001	53	57	48	52	--	--	10.5	6.8	8.6	--	--	31	32	31	--
(SW) GM30002	53	58	52	54	--	--	4.0	0.0	2.0	--	--	30	34	32	--
(W) NuFrontier	55	60	55	57	--	--	1.5	-1.3	0.1	--	--	33	34	33	--
(W) NuHorizon	59	61	56	58	--	--	3.5	-0.3	1.6	--	--	31	33	32	--
Goertzen															
Venango	57	63	55	59	--	--	1.3	-0.8	0.3	--	--	32	35	33	--
MFA															
(S) 1828	--	--	--	--	55	--	--	--	--	1.8	--	--	--	--	38
(S) 766	--	--	--	--	58	--	--	--	--	0.0	--	--	--	--	36
M-Pride															
(S)MPV7921SRW	--	--	--	--	55	--	--	--	--	2.0	--	--	--	--	38
NK															
(S) BL940812	--	--	58	--	59	--	--	-3.0	--	4.3	--	--	33	--	34
(S) Coker 9025	--	--	55	--	55	--	--	-2.8	--	5.5	--	--	32	--	35
(S) Coker 9474	--	--	57	--	59	--	--	-4.5	--	2.3	--	--	32	--	33
(S) Coker 9663	--	--	58	--	58	--	--	-4.3	--	4.3	--	--	34	--	37
Pioneer															
(S) 25R49	--	--	--	--	56	--	--	--	--	1.8	--	--	--	--	36
(S) 25R78	--	--	--	--	58	--	--	--	--	0.8	--	--	--	--	34
Polansky															
Dominator	59	63	56	59	--	--	-2.5	-4.0	-3.3	--	--	29	31	30	--
WPB															
(S) Y98-912	--	--	--	--	57	--	--	--	--	4.8	--	--	--	--	37
(S) Z98*912	--	--	--	--	57	--	--	--	--	2.0	--	--	--	--	36
Public															
(S) Caldwell	55	60	54	56	56	--	-1.0	-4.8	-2.9	1.0	--	31	36	33	38
(S) Kaskaskia	56	62	56	58	58	--	-1.5	-4.0	-2.8	3.3	--	34	37	36	40
(S) Roane	--	--	58	--	59	--	--	-3.5	--	2.3	--	--	32	--	36
2137	56	61	57	58	58	--	-0.5	-2.8	-1.6	4.8	--	33	35	34	37
2145	57	63	57	59	--	--	-1.5	-2.8	-2.1	--	--	30	33	32	--
2163	53	60	54	56	--	--	-0.8	-4.3	-2.5	--	--	30	34	32	--
2174	58	61	58	59	--	--	-1.3	-2.8	-2.0	--	--	31	36	33	--
Jag,2137	57	62	56	58	--	--	-3.3	-5.5	-4.4	--	--	32	34	33	--
Jag,2137,Dom	57	62	56	58	--	--	-3.0	-6.3	-4.6	--	--	32	34	33	--
Jagger	57	61	54	57	55	--	-3.8	-8.0	-5.9	0.0	--	30	32	31	34
Karl 92	58	61	57	59	--	--	-3.8	-6.8	-5.3	--	--	30	32	31	--
Scout 66	58	60	52	57	--	--	0.0	0.0	0.0	--	--	37	35	36	--
Average	57	61	56	58	57	--	-0.4	-3.3	-1.9	2.7	--	32	34	33	36
CV (%)	1	1	2	--	1	--	15.3	3.6	--	4.1	--	4	5	--	5
LSD (0.05)**	1	1	1	--	1	--	1.3	1.5	--	1.6	--	2	2	--	2

¹ BR = Brown County test at Bunck Seed Farm, Everest, KS.

² FR = Franklin County test at East Central Exp. Field, Ottawa, KS.

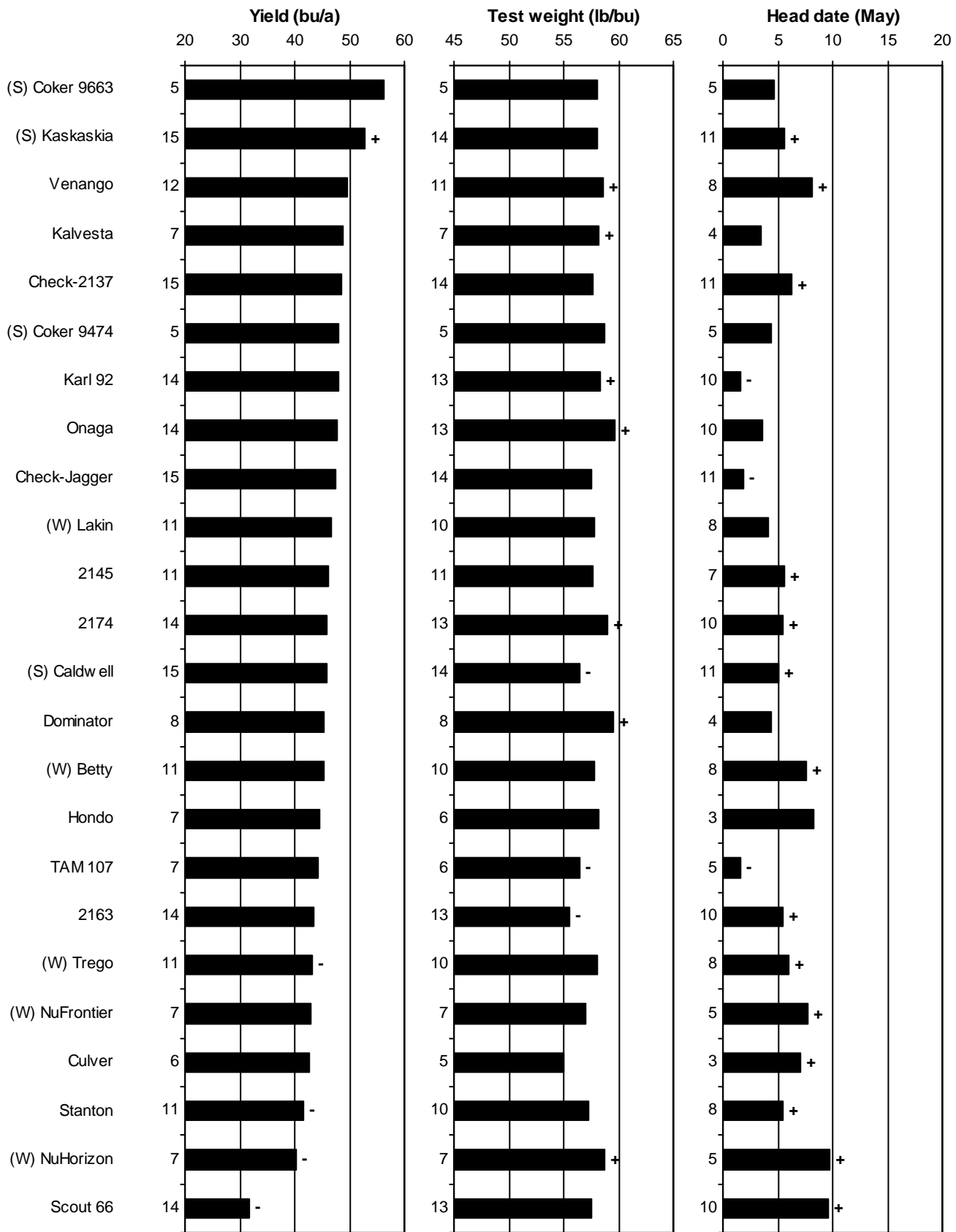
³ LB = Labette County test at KSU SE Ag. Res. Center, Parsons, KS.

⁴ CS = Crawford County Soft Wheat Test, Pittsburg, KS.

(S)=Soft; (W)=White

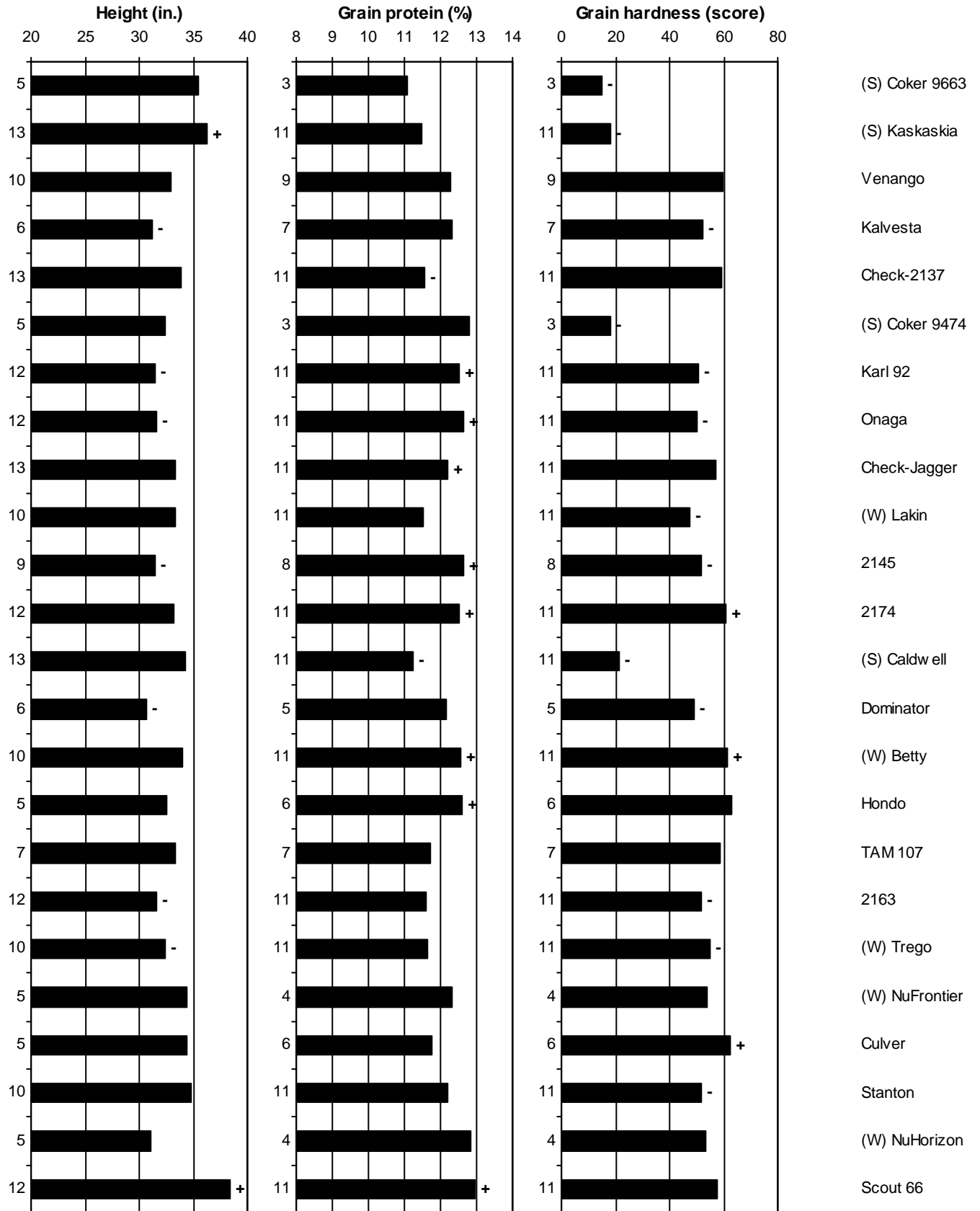
** Least Significant Difference, similar to 'Margin of Error', indicates difference needed to overcome test error.

Figure 4. Wheat variety performance summary, EASTERN region, 1999-2002



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

Figure 4. EASTERN region - continued



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

Table 6. Yield, 2002 NORTH CENTRAL Kansas Winter Wheat Performance Tests.

Brand / Name	1				Avg.	2				Avg.	Belleville-1		Mankato-2		Smith C.-3		Phil.-4	
	RP	JW	SM	PH		RP	JW	SM	PH		2YR	3YR	2YR	3YR	2YR	3YR	2YR	3YR
	bushels/acre				% of test average				multi-year averages, bushels/acre									
AgriPro																		
Cutter	98	53	--	52	68	121	118	--	117	119	--	--	--	--	--	--	--	--
Hondo	84	46	--	27	52	103	103	--	61	92	71	67	--	--	56	64	--	--
Jagalene	96	58	--	60	72	119	128	--	137	126	--	--	--	--	--	--	--	--
AGSECO																		
Exp 2047	79	45	--	45	56	97	99	--	103	99	--	--	--	--	--	--	--	--
Exp 2139	84	49	--	45	59	104	109	--	103	105	--	--	--	--	--	--	--	--
Onaga	88	42	--	33	54	108	93	--	76	96	66	66	--	--	71	74	--	--
General Mills																		
(SW) GM30001	57	24	--	27	36	70	54	--	61	64	--	--	--	--	--	--	--	--
(SW) GM30002	50	23	--	31	35	62	52	--	70	61	--	--	--	--	--	--	--	--
(W) NuFrontier	74	40	--	49	55	92	89	--	112	96	65	65	--	--	69	--	--	--
(W) NuHorizon	82	44	--	45	57	101	98	--	102	101	71	68	--	--	73	--	--	--
Goertzen																		
G970019	78	44	--	46	56	97	98	--	105	99	--	--	--	--	--	--	--	--
G970246	79	45	--	51	58	98	99	--	116	103	--	--	--	--	--	--	--	--
G970343	74	44	--	40	52	91	97	--	90	93	--	--	--	--	--	--	--	--
G970447	73	47	--	42	54	90	104	--	95	95	--	--	--	--	--	--	--	--
G970454	69	45	--	36	50	85	99	--	82	88	--	--	--	--	--	--	--	--
G970466	83	44	--	48	58	103	97	--	109	103	--	--	--	--	--	--	--	--
Venango	83	44	--	37	55	102	98	--	83	96	67	69	--	--	76	78	--	--
Polansky																		
Dominator	85	46	--	39	57	104	103	--	89	100	72	72	--	--	80	81	--	--
Public																		
2137	87	49	--	53	63	108	108	--	119	111	69	70	--	--	75	80	--	--
2145	99	50	--	40	63	122	110	--	91	111	72	74	--	--	80	--	--	--
2163	77	36	--	43	52	95	79	--	97	91	56	56	--	--	70	71	--	--
2174	84	44	--	38	55	103	98	--	86	97	63	65	--	--	71	76	--	--
Alliance	89	51	--	54	65	110	114	--	121	114	73	70	--	--	79	80	--	--
Arapahoe	76	50	--	40	55	94	112	--	90	98	72	68	--	--	73	77	--	--
Culver	79	47	--	47	58	97	104	--	106	101	67	68	--	--	73	78	--	--
Ike	87	44	--	45	59	108	98	--	102	104	70	70	--	--	76	78	--	--
Jag,2137	83	47	--	51	60	102	104	--	114	106	--	--	--	--	--	--	--	--
Jag,2137,Dom	86	46	--	45	59	106	101	--	102	104	--	--	--	--	--	--	--	--
Jagger	84	48	--	44	59	104	108	--	101	104	75	74	--	--	79	78	--	--
Karl 92	84	40	--	36	53	103	90	--	82	94	68	70	--	--	81	81	--	--
Millennium	83	48	--	47	60	103	107	--	107	105	72	69	--	--	74	--	--	--
Scout 66	58	47	--	55	53	71	103	--	124	93	53	50	--	--	50	55	--	--
Stanton	93	45	--	47	62	115	100	--	106	109	73	71	--	--	67	73	--	--
Vista	74	44	--	53	57	92	98	--	121	101	65	64	--	--	70	74	--	--
Wahoo	83	51	--	46	60	103	114	--	104	106	--	--	--	--	--	--	--	--
Wesley	94	49	--	51	65	116	110	--	115	114	79	76	--	--	81	86	--	--
Average	81	45	--	44	57	81	45	--	4	57	67	67	--	--	72	76	--	--
CV (%)	4	4	--	6	5	4	4	--	6	5	--	--	--	--	--	--	--	--
LSD (0.05)**	6	3	--	4	3	7	7	--	9	5	--	--	--	--	--	--	--	--

¹ RP = Republic County test at North Central Exp. Field, Belleville, K

³ SM = Smith County test, Smith Center, KS - Hailed out.

² JW = Jewell County test near Mankato, KS.

⁴ PH = Phillips County test, Phillipsburg, KS.

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

Table 7. TW, Heading, Height, 2002 NORTH CENTRAL Kansas Winter Wheat Performance Tests.

Brand / Name	RP ¹	JW ²	SM ³	PH ⁴	Avg.	RP	JW	SM	PH	Avg.	RP	JW	SM	PH	Avg.
	test weight (lb/bu)					heading (days +/- Scout)					plant height (in)				
AgriPro															
Cutter	60	62	--	61	61	-3.7	--	--	--	--	37	28	--	25	30
Hondo	61	62	--	61	61	-1.3	--	--	--	--	38	28	--	24	30
Jagalene	61	63	--	62	62	-3.3	--	--	--	--	38	27	--	25	30
AGSECO															
Exp 2047	61	61	--	58	60	-2.0	--	--	--	--	37	26	--	24	29
Exp 2139	61	61	--	60	61	-3.3	--	--	--	--	37	25	--	25	29
Onaga	61	63	--	61	61	-3.3	--	--	--	--	34	26	--	23	28
General Mills															
(SW) GM30001	56	53	--	58	56	1.3	--	--	--	--	35	27	--	24	29
(SW) GM30002	56	54	--	59	57	1.7	--	--	--	--	35	26	--	23	28
(W) NuFrontier	60	62	--	61	61	-0.3	--	--	--	--	40	27	--	25	31
(W) NuHorizon	60	62	--	62	61	-0.3	--	--	--	--	35	24	--	23	27
Goertzen															
G970019	60	61	--	59	60	-0.7	--	--	--	--	36	25	--	26	29
G970246	60	62	--	61	61	-0.3	--	--	--	--	36	25	--	29	30
G970343	60	62	--	61	61	-0.3	--	--	--	--	37	25	--	25	29
G970447	60	62	--	59	60	-2.0	--	--	--	--	34	23	--	22	26
G970454	61	62	--	60	61	-0.3	--	--	--	--	36	25	--	24	28
G970466	61	63	--	60	61	-3.3	--	--	--	--	35	24	--	25	28
Venango	60	62	--	61	61	-1.0	--	--	--	--	38	26	--	27	30
Polansky															
Dominator	61	63	--	61	61	-4.0	--	--	--	--	34	23	--	22	26
Public															
2137	60	62	--	60	61	-2.7	--	--	--	--	39	25	--	25	30
2145	61	62	--	61	61	-2.0	--	--	--	--	37	24	--	25	29
2163	60	59	--	58	59	-2.3	--	--	--	--	34	25	--	25	28
2174	60	61	--	60	61	-2.3	--	--	--	--	37	27	--	24	30
Alliance	60	61	--	61	61	-1.3	--	--	--	--	39	27	--	26	31
Arapahoe	60	62	--	59	60	0.0	--	--	--	--	40	30	--	27	33
Culver	61	61	--	59	60	-0.3	--	--	--	--	39	29	--	26	31
Ike	61	62	--	60	61	-2.0	--	--	--	--	36	28	--	26	30
Jag,2137	60	61	--	60	61	-4.0	--	--	--	--	38	28	--	27	31
Jag,2137,Dom	61	62	--	60	61	-3.3	--	--	--	--	36	25	--	27	29
Jagger	60	62	--	61	61	-3.3	--	--	--	--	36	24	--	27	29
Karl 92	60	62	--	60	61	-6.3	--	--	--	--	34	24	--	26	28
Millennium	61	62	--	60	61	-1.3	--	--	--	--	42	30	--	28	33
Scout 66	60	62	--	61	61	0.0	--	--	--	--	43	32	--	30	35
Stanton	60	62	--	60	61	-1.7	--	--	--	--	39	26	--	27	31
Vista	60	61	--	59	60	-0.3	--	--	--	--	37	25	--	26	29
Wahoo	61	61	--	59	60	-1.0	--	--	--	--	39	27	--	26	31
Wesley	60	62	--	60	61	-1.7	--	--	--	--	35	25	--	26	28
Average	60	61	--	60	61	-1.7	--	--	--	--	37	26	--	25	30
CV (%)	1	1	--	1	1	3.1	--	--	--	--	4	5	--	8	5
LSD (0.05)**	1	1	--	1	0	0.8	--	--	--	--	2	2	--	3	1

¹ RP = Republic County test at North Central Exp. Field, Belleville, K

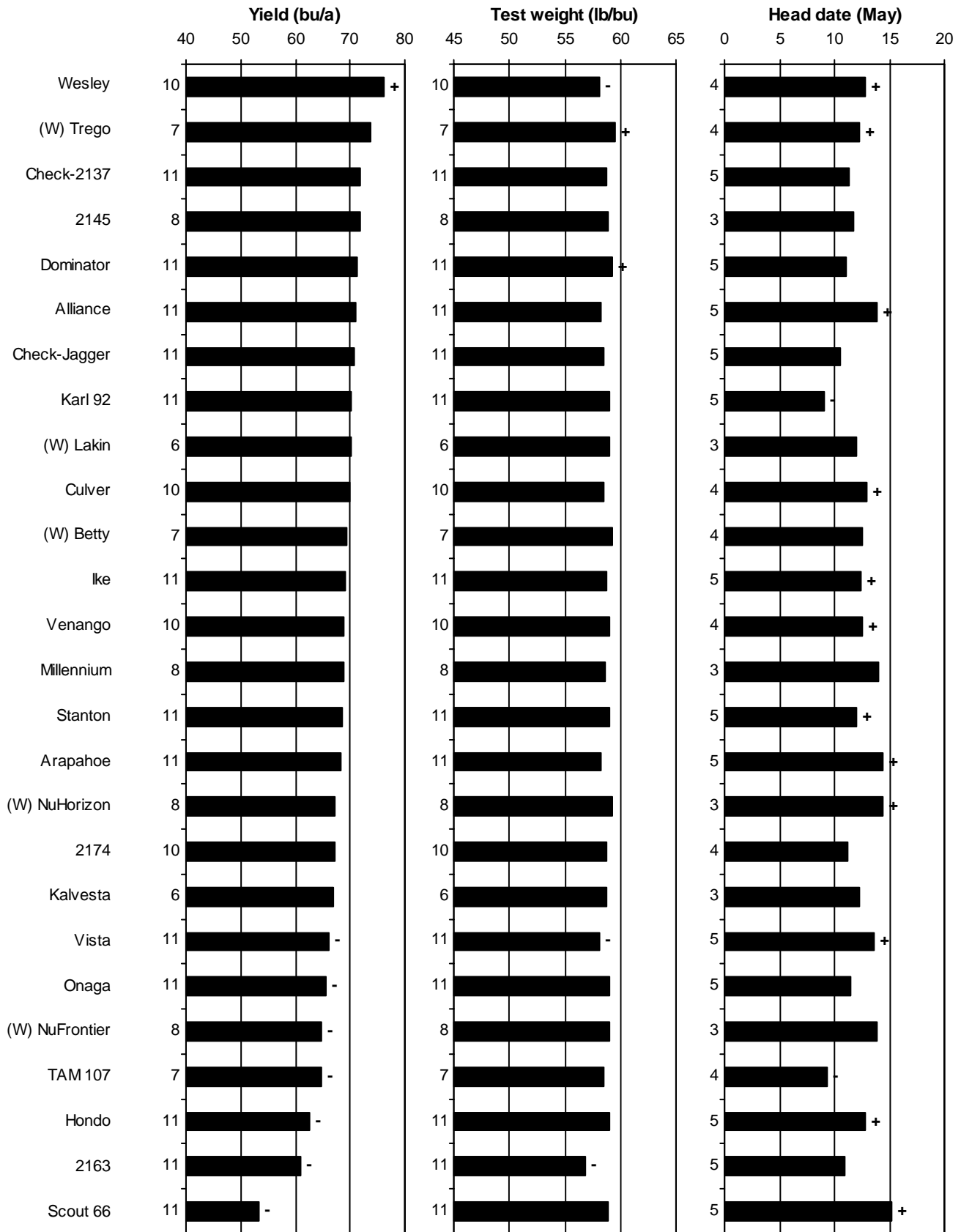
³ SM = Smith County test, Smith Center, KS - Hailed out.

² JW = Jewell County test near Mankato, KS.

⁴ PH = Phillips County test, Phillipsburg, KS.

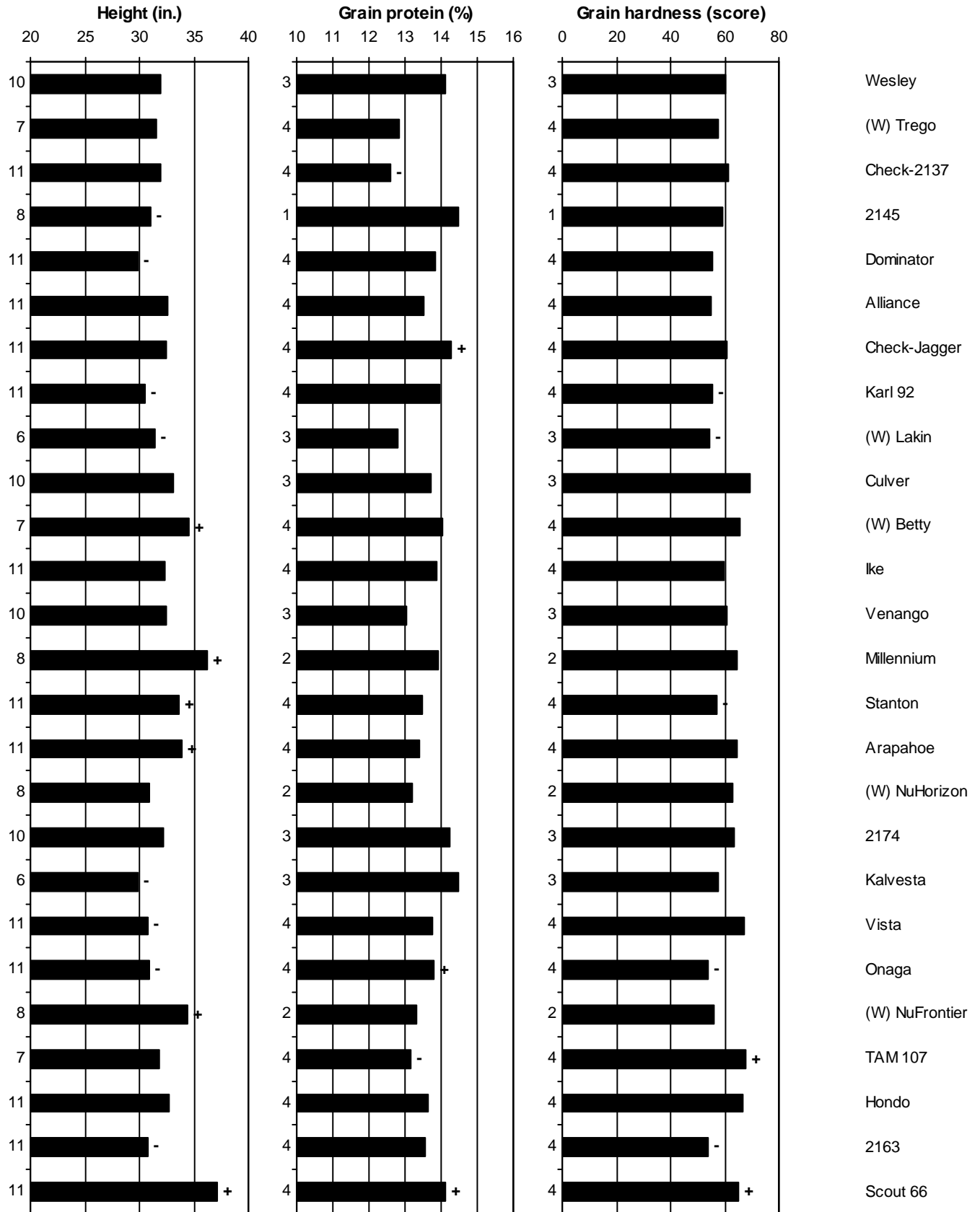
(W) = Hard white wheat. ** Least Significant Difference, similar to 'Margin of Error', indicates difference needed to overcome test error.

Figure 5. Wheat variety performance summary, NORTH CENTRAL region, 1998-2002



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

Figure 5. NORTH CENTRAL region - continued



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

Table 8. Yield, 2002 SOUTH CENTRAL Kansas Winter Wheat Performance Tests.

Brand / Name	HV ¹	RN ²	SD ³	SU ⁴	Avg.	HV	RN	SD	SU	Avg.	Hesston-1		Hutch.-2		St.John-3		Caldwell-4	
	bushels/acre					% of test average					multi-year averages, bushels/acre							
	2YR	3YR	2YR	3YR	2YR	3YR	2YR	3YR	2YR	3YR	2YR	3YR	2YR	3YR	2YR	3YR	2YR	3YR
AgriPro																		
Cutter	54	--	69	33	52	122	--	101	98	107	51	--	--	--	--	--	--	--
Jagalene	60	--	80	42	61	136	--	116	125	126	--	--	--	--	--	--	--	--
AGSECO																		
7853	36	--	74	34	48	81	--	107	101	96	38	38	44	52	64	63	34	36
Exp 2047	40	--	69	34	48	91	--	100	101	97	--	--	--	--	--	--	--	--
Exp 2202	48	--	59	32	47	108	--	86	96	97	--	--	--	--	--	--	--	--
Onaga	34	--	53	26	38	76	--	77	79	77	33	36	48	55	50	--	37	41
General Mills																		
(SW) GM30001	32	--	--	33	--	71	--	--	99	--	--	--	--	--	--	--	--	--
(SW) GM30002	35	--	--	27	--	80	--	--	81	--	--	--	--	--	--	--	--	--
(W) NuFrontier	50	--	63	33	49	113	--	91	98	101	42	--	--	--	--	--	--	--
(W) NuHorizon	44	--	64	33	47	99	--	93	99	97	35	--	--	--	--	--	--	--
Goertzen																		
Venango	41	--	75	31	49	91	--	109	91	97	38	40	43	54	63	67	39	--
Polansky																		
Dominator	38	--	68	--	--	86	--	99	--	--	45	44	45	50	57	60	--	--
Public																		
2137	48	--	81	39	56	107	--	118	118	114	43	43	41	47	69	64	45	48
2145	38	--	64	29	44	86	--	94	85	88	34	37	51	--	56	--	41	--
2163	48	--	64	35	49	107	--	94	103	101	36	38	41	48	56	58	38	39
2174	44	--	65	34	47	99	--	94	100	98	42	41	49	52	56	57	37	40
Ike	--	--	80	--	--	--	--	116	--	--	--	--	--	--	65	61	--	--
Jag,2137	53	--	77	35	55	118	--	112	105	112	--	--	--	--	--	--	--	--
Jag,2137,K92	50	--	73	36	53	113	--	107	108	109	--	--	--	--	--	--	--	--
Jagger	56	--	68	34	53	125	--	100	100	108	51	49	47	55	58	62	40	44
Karl 92	43	--	68	39	50	96	--	99	115	103	47	45	51	54	55	53	38	38
Ok101	45	--	60	34	46	101	--	87	103	97	39	--	--	--	--	--	--	--
Scout 66	42	--	68	31	47	95	--	99	94	96	38	36	30	34	51	50	28	28
Average	44	--	69	33	49	44	--	69	33	49	41	41	42	49	58	58	37	38
CV (%)	5	--	8	9	--	5	--	8	9	--	--	--	--	--	--	--	--	--
LSD (0.05)**	3	--	8	4	--	6	--	11	13	--	--	--	--	--	--	--	--	--

¹ HV = Harvey County test at Harvey County Experiment Field near Hesston, KS.

² RN = Reno County test at South Central Experiment Field near Hutchinson, KS - Hailed out.

³ SD = Stafford County Dryland test at Sandyland Experiment Field near St. John, KS.

⁴ SU = Sumner County Dryland test at Max Kolarik farm near Caldwell, KS.

(W) = Hard white wheat.

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

Table 9. TW, Heading, Height, 2002 SOUTH CENTRAL Kansas Winter Wheat Performance Tests.

Brand / Name	HV ¹	RN ²	SD ³	SU ⁴	Avg.	HV	RN	SD	SU	Avg.	HV	RN	SD	SU	Avg.
	test weight (lb/bu)					heading (days +/- Scout)					plant height (in)				
AgriPro															
Cutter	59	--	59	56	58	-1.3	--	-1.3	--	-1.3	31	--	29	--	30
Jagalene	61	--	60	58	60	-2.3	--	-0.3	--	-1.3	32	--	29	--	30
AGSECO															
7853	58	--	60	56	58	-1.3	--	-1.5	--	-1.4	31	--	28	--	30
Exp 2047	55	--	56	56	56	0.0	--	1.0	--	0.5	30	--	29	--	29
Exp 2202	58	--	57	55	57	-1.8	--	-1.8	--	-1.8	30	--	28	--	29
Onaga	57	--	58	55	57	-1.0	--	-0.8	--	-0.9	29	--	24	--	26
General Mills															
(SW) GM30001	53	--	--	52	--	9.3	--	7.0	--	8.1	32	--	28	--	30
(SW) GM30002	54	--	--	52	--	6.8	--	4.3	--	5.5	31	--	29	--	30
(W) NuFrontier	59	--	58	56	58	2.0	--	3.0	--	2.5	31	--	30	--	30
(W) NuHorizon	58	--	59	58	58	1.8	--	0.3	--	1.0	30	--	27	--	28
Goertzen															
Venango	57	--	59	56	57	0.3	--	1.5	--	0.9	31	--	30	--	30
Polansky															
Dominator	58	--	60	--	--	-1.8	--	-1.3	--	-1.5	28	--	24	--	26
Public															
2137	58	--	59	55	58	-1.3	--	-1.3	--	-1.3	31	--	30	--	31
2145	59	--	60	58	59	-2.0	--	-2.0	--	-2.0	30	--	28	--	29
2163	58	--	56	54	56	-1.5	--	-1.0	--	-1.3	29	--	27	--	28
2174	59	--	59	57	58	-1.0	--	1.8	--	0.4	31	--	25	--	28
Ike	--	--	59	--	--	--	--	-1.3	--	--	--	--	28	--	--
Jag,2137	59	--	59	56	58	-4.5	--	-4.5	--	-4.5	31	--	29	--	30
Jag,2137,K92	59	--	59	57	58	-5.0	--	-5.8	--	-5.4	30	--	29	--	30
Jagger	60	--	58	56	58	-5.8	--	-6.0	--	-5.9	30	--	27	--	29
Karl 92	57	--	59	56	57	-4.3	--	-5.3	--	-4.8	30	--	27	--	28
Ok101	59	--	58	55	57	-3.0	--	-3.0	--	-3.0	31	--	27	--	29
Scout 66	59	--	60	56	58	0.0	--	0.0	--	0.0	35	--	37	--	36
Average	58	--	59	56	57	-0.8	--	-0.8	--	-0.8	31	--	28	--	29
CV (%)	1	--	2	--	--	6.7	--	4.5	--	--	2	--	6	--	--
LSD (0.05)**	1	--	2	--	--	0.6	--	2.2	--	--	1	--	2	--	--

¹ HV = Harvey County test at Harvey County Experiment Field near Hesston, KS.

² RN = Reno County test at South Central Experiment Field near Hutchinson, KS - Hailed out.

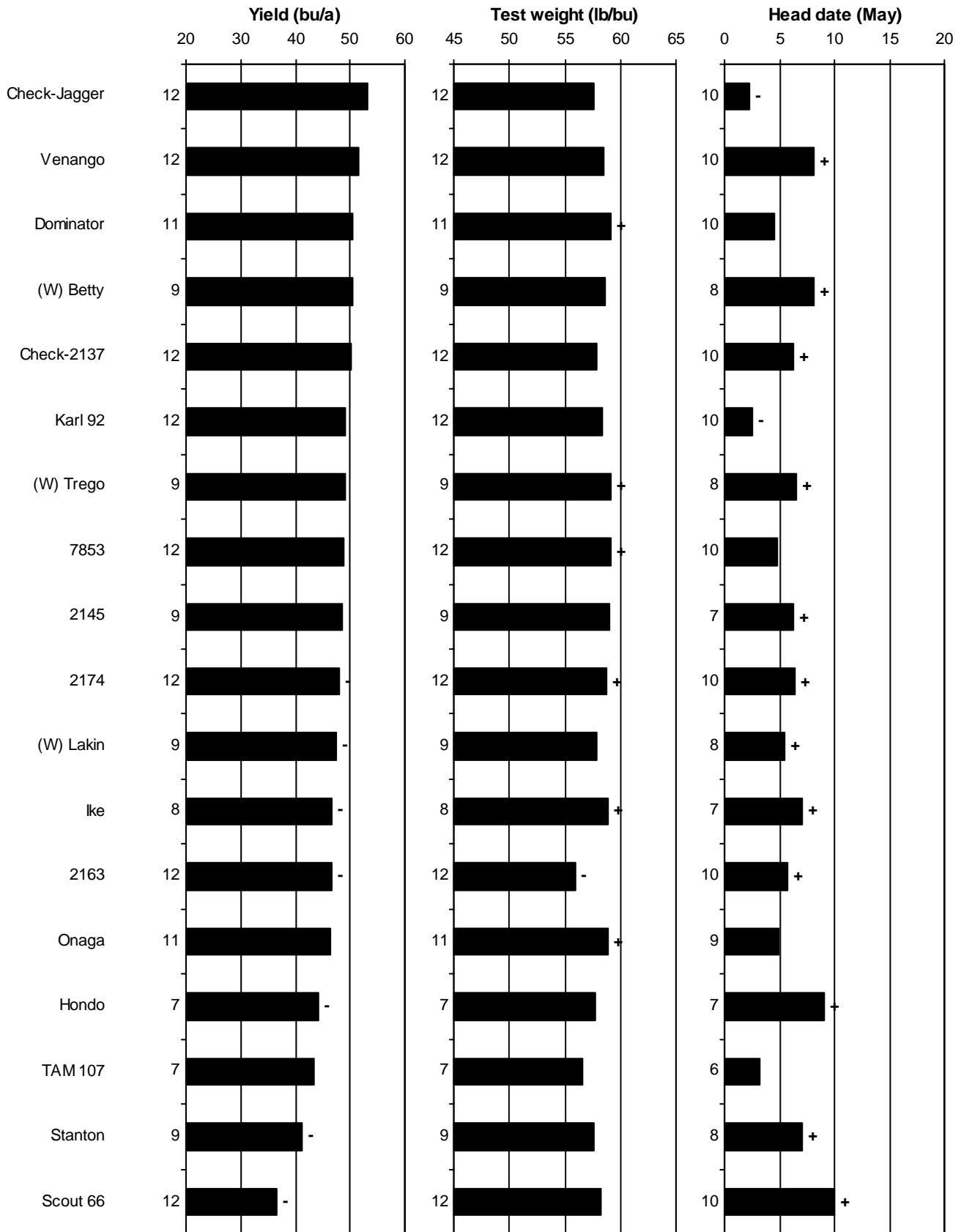
³ SD = Stafford County Dryland test at Sandyland Experiment Field near St. John, KS.

⁴ SU = Sumner County Dryland test at Max Kolarik farm near Caldwell, KS.

(W) = Hard white wheat.

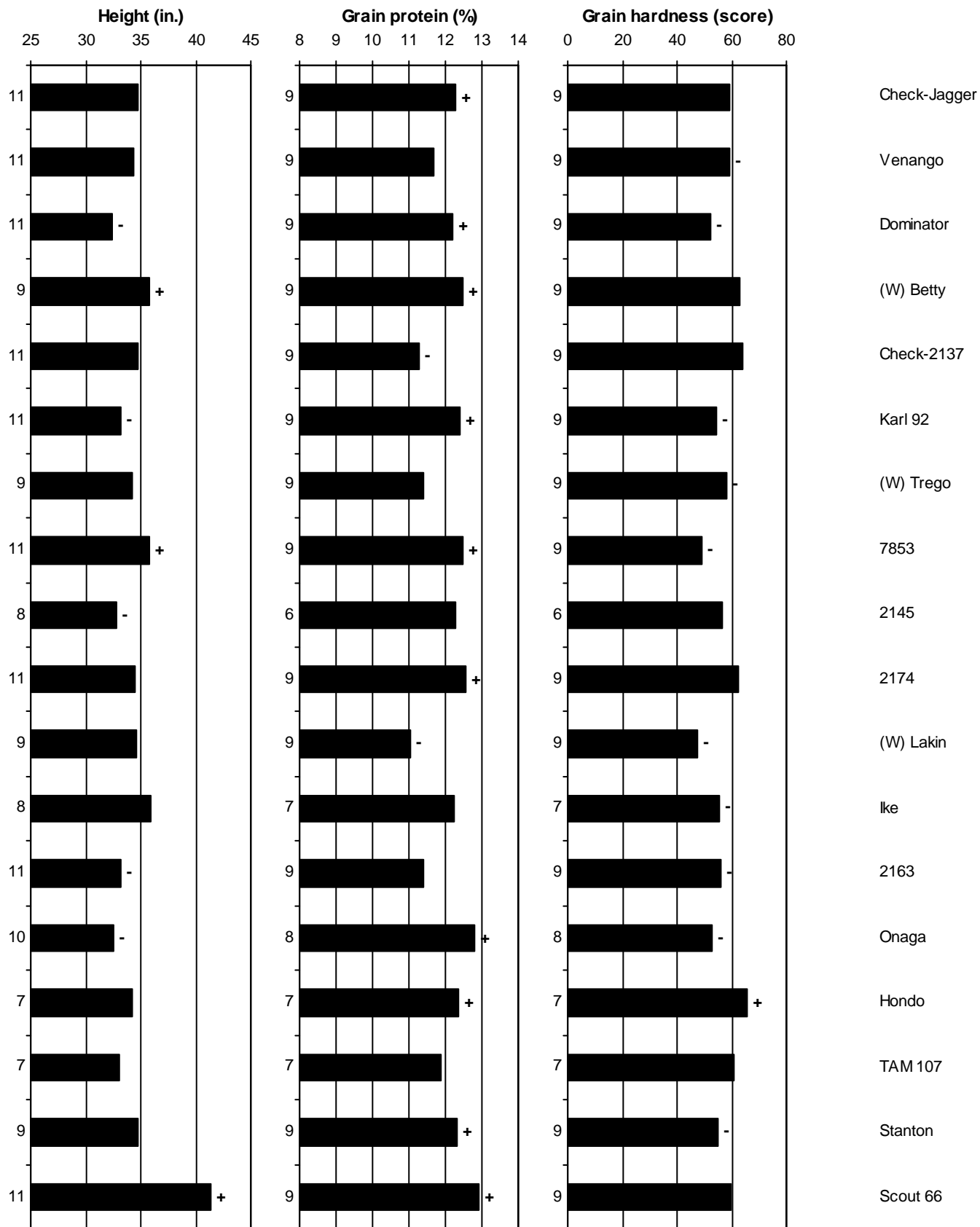
** Least Significant Difference, similar to 'Margin of Error', indicates difference needed to overcome test error.

Figure 6. Wheat variety performance summary, SOUTH CENTRAL region, 1999-2002



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

Figure 6. SOUTH CENTRAL region - continued



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

Table 10. Yield, 2002 WESTERN Kansas Winter Wheat Performance Tests.

Brand / Name	¹ EL ² TD ³ GD ⁴ FD Avg.					%					Hays-1		Colby-2		Tribune-3		Garden C.-4		
	EL	TD	GD	FD	Avg.	EL	TD	GD	FD	Avg.	2YR	3YR	2YR	3YR	2YR	3YR	2YR	3YR	
	bushels/acre					% of test average					multi-year averages, bushels/acre								
AgriPro																			
AP502CL	45	39	27	28	35	108	103	127	120	115	--	--	--	--	--	--	--	--	--
AP98-363W	48	44	17	28	34	114	116	81	121	108	--	--	--	--	--	--	--	--	--
Cutter	44	37	22	25	32	106	99	104	107	104	--	--	--	--	--	--	--	--	--
Dumas	41	35	19	21	29	99	92	90	90	93	--	--	--	--	--	--	--	--	--
Jagalene	50	44	25	30	37	118	117	119	130	121	--	--	--	--	--	--	--	--	--
Thunderbolt	46	40	30	26	36	110	106	144	114	118	55	63	59	54	38	52	30	32	
AGSECO																			
Exp 2047	39	37	24	23	31	92	98	116	100	102	--	--	--	--	--	--	--	--	--
Exp 2139	38	36	--	--	--	92	96	--	--	--	--	--	--	--	--	--	--	--	--
Exp 2202	--	--	--	23	--	--	--	--	101	--	--	--	--	--	--	--	--	--	--
TAM 110	44	41	27	28	35	106	108	129	121	116	58	66	57	54	39	53	27	30	
DSS																			
T81	--	--	27	27	--	--	--	129	118	--	--	--	--	--	43	58	30	33	
General Mills																			
(SW) GM30001	26	27	5	12	17	62	72	24	50	52	--	--	--	--	--	--	--	--	--
(SW) GM30002	32	34	14	15	24	76	89	67	67	75	--	--	--	--	--	--	--	--	--
(W) NuFrontier	39	38	11	25	28	94	99	51	108	88	50	--	57	51	31	--	28	29	
(W) NuHorizon	39	36	25	22	31	93	95	119	96	101	53	--	52	48	35	--	26	29	
Goertzen																			
G970019	--	--	19	25	--	--	--	88	107	--	--	--	--	--	--	--	--	--	--
G970209W	--	--	12	16	--	--	--	58	67	--	--	--	--	--	--	--	--	--	--
G970246	--	--	23	25	--	--	--	111	107	--	--	--	--	--	--	--	--	--	--
G970343	--	--	13	23	--	--	--	61	99	--	--	--	--	--	--	--	--	--	--
G970380A	--	--	13	17	--	--	--	63	72	--	--	--	--	--	--	--	--	--	--
G970447	--	--	15	22	--	--	--	72	96	--	--	--	--	--	--	--	--	--	--
G970454	--	--	19	18	--	--	--	88	77	--	--	--	--	--	--	--	--	--	--
G970466	--	--	11	21	--	--	--	54	90	--	--	--	--	--	--	--	--	--	--
Kalvesta	--	--	23	22	--	--	--	111	97	--	--	--	--	36	52	23	27		
Venango	40	37	28	23	32	97	98	133	100	107	53	62	55	52	37	52	28	31	
Polansky																			
Dominator	40	--	--	--	--	96	--	--	--	--	52	61	--	--	--	--	--	--	--

(continued)

¹ EL = Ellis County test at KSU Ag. Research Center, Hays, KS. ³ GD = Greeley County test at KSU SW Res.-Ext. Center, Tribune, KS
² TD = Thomas County test at KSU NW Res.-Ext. Center, Colby, KS. ⁴ FD = Finney Co. test at KSU SW Res.-Ext. Center, Garden City, KS.
(W) = Hard white wheat. ** Least Significant Difference, similar to 'Margin of Error', indicates difference needed to overcome test error.

Table 10 - continued

Brand / Name	¹ EL ² TD ³ GD ⁴ FD Avg.					EL TD GD FD Avg.					Hays-1		Colby-2		Tribune-3		Garden C.-4			
	bushels/acre					% of test average					2YR 3YR		2YR 3YR		2YR 3YR		2YR 3YR			
Public																				
(W) Avalanche	46	40	28	24	34	111	105	132	104	113	--	--	--	--	--	--	--	--	--	--
(W) Betty	42	34	15	16	27	100	91	72	71	83	52	57	52	49	32	44	18	24		
(W) Intrada	37	35	13	19	26	88	94	61	82	81	51	--	54	49	29	--	25	29		
(W) Lakin	47	38	17	26	32	112	101	81	111	101	55	63	54	51	34	53	26	29		
(W) Nuplains	39	38	32	26	34	94	102	150	113	115	53	--	53	49	41	--	24	--		
(W) Trego	47	43	25	26	35	112	113	120	111	114	61	68	59	56	37	55	30	31		
2137	43	40	24	29	34	103	106	114	124	112	51	58	55	51	36	50	27	31		
2145	41	36	16	23	29	98	95	76	101	92	55	--	53	49	31	--	25	28		
2174	42	35	14	23	28	100	93	67	98	90	51	57	52	46	31	45	26	29		
Above	47	39	28	23	34	112	104	132	101	112	--	--	--	--	--	--	--	--		
Akron	41	39	25	27	33	98	103	121	118	110	51	60	56	51	39	55	28	28		
Alliance	43	41	26	27	34	103	109	122	118	113	54	62	55	50	37	55	24	28		
Arapahoe	39	36	17	23	29	93	96	83	100	93	50	57	55	48	36	51	27	28		
Ike	45	39	22	27	33	108	104	106	116	108	56	63	55	52	36	50	25	29		
Jag,2137	42	36	23	23	31	99	96	111	99	101	--	--	--	--	--	--	--	--		
Jag,2137,Stan	42	39	24	25	33	101	104	113	110	107	--	--	--	--	--	--	--	--		
Jagger	44	37	13	22	29	104	98	60	93	89	52	62	60	53	30	47	27	28		
Karl 92	39	28	17	18	25	93	74	80	78	81	50	58	52	47	32	48	28	30		
Millennium	41	40	31	25	34	97	105	147	106	114	51	--	58	53	--	--	--	--		
Ok101	42	35	17	19	28	101	93	80	84	89	--	--	--	--	--	--	--	--		
Prairie Red	43	41	23	22	32	102	108	111	96	104	57	--	56	54	38	--	24	28		
Scout 66	42	39	32	25	35	101	104	153	108	116	47	51	53	49	41	47	29	28		
Stanton	43	40	20	23	31	102	105	96	101	101	55	61	57	52	37	51	28	30		
TAM 107	43	36	19	23	30	104	96	89	99	97	56	63	52	51	35	50	23	27		
Vista	40	37	21	23	30	96	98	101	101	99	50	59	55	54	32	51	25	29		
Wahoo	44	43	26	--	--	106	113	124	--	--	--	--	--	--	--	--	--	--		
Wesley	41	40	33	--	--	98	105	158	--	--	51	58	56	51	42	55	--	--		
Average	42	38	21	23	31	42	38	21	23	31	52	60	55	50	35	51	25	28		
CV (%)	5	5	26	8	--	5	5	26	8	--	--	--	--	--	--	--	--	--		
LSD (0.05)**	3	2	8	3	--	8	6	37	11	--	--	--	--	--	--	--	--	--		

¹ EL = Ellis County test at KSU Ag. Research Center, Hays, KS. ³ GD = Greeley County test at KSU SW Res.-Ext. Center, Tribune, KS
² TD = Thomas County test at KSU NW Res.-Ext. Center, Colby, KS. ⁴ FD = Finney Co. test at KSU SW Res.-Ext. Center, Garden City, KS.
(W) = Hard white wheat. ** Least Significant Difference, similar to 'Margin of Error', indicates difference needed to overcome test error.

Table 11. TW, Heading, Height, 2002 WESTERN Kansas Winter Wheat Performance Tests.

Brand / Name	EL ¹	TD ²	GD ³	FD ⁴	Avg.	EL	TD	GD	FD	Avg.	EL	TD	GD	FD	Avg.
	test weight (lb/bu)					heading (days +/- Scout)					plant height (in)				
AgriPro															
AP502CL	57	57	58	58	58	-5.3	-3.8	-2.0	-3.8	-3.7	27	25	19	23	24
AP98-363W	61	60	59	61	60	-2.8	-1.5	-1.0	-0.5	-1.4	28	25	20	24	24
Cutter	59	59	59	60	59	-3.0	-2.0	-0.5	-1.5	-1.8	31	27	19	25	26
Dumas	59	59	59	60	59	-2.0	-0.8	0.5	-0.3	-0.6	28	26	21	22	24
Jagalene	60	60	59	61	60	-2.3	-0.5	0.8	-0.8	-0.7	28	28	20	23	25
Thunderbolt	59	61	59	61	60	0.0	0.3	0.3	1.3	0.4	29	28	22	23	25
AGSECO															
Exp 2047	55	56	56	58	56	0.0	0.3	2.3	0.5	0.8	28	25	19	22	23
Exp 2139	56	58	--	--	--	-0.3	-1.0	--	--	--	26	25	--	--	--
Exp 2202	--	--	--	58	--	--	--	--	-0.3	--	--	--	--	23	--
TAM 110	58	59	59	59	58	-4.8	-4.3	-1.5	-4.8	-3.8	28	26	20	23	24
DSS															
T81	--	--	57	60	--	--	--	0.0	-2.8	--	--	--	19	23	--
General Mills															
(SW) GM30001	47	53	48	56	51	4.5	8.3	13.0	10.0	8.9	26	25	20	23	23
(SW) GM30002	49	56	52	56	53	4.3	4.3	6.0	8.8	5.8	28	27	19	22	24
(W) NuFrontier	56	57	57	59	57	2.3	0.8	2.5	1.3	1.7	28	26	20	23	24
(W) NuHorizon	58	60	57	60	59	2.8	1.0	3.3	1.5	2.1	26	24	18	22	22
Goertzen															
G970019	--	--	55	59	--	--	--	1.8	2.0	--	--	--	19	23	--
G970209W	--	--	59	60	--	--	--	0.3	0.3	--	--	--	17	21	--
G970246	--	--	59	60	--	--	--	-1.3	-1.5	--	--	--	21	23	--
G970343	--	--	57	60	--	--	--	3.8	1.5	--	--	--	18	22	--
G970380A	--	--	57	60	--	--	--	-0.8	-3.5	--	--	--	18	21	--
G970447	--	--	58	58	--	--	--	0.3	-1.0	--	--	--	22	22	--
G970454	--	--	58	59	--	--	--	1.3	0.5	--	--	--	18	21	--
G970466	--	--	58	59	--	--	--	0.8	-1.5	--	--	--	18	21	--
Kalvesta	--	--	58	59	--	--	--	-0.8	-2.8	--	--	--	18	22	--
Venango	58	59	59	60	59	1.5	1.5	1.3	2.5	1.7	27	27	18	23	24
Polansky															
Dominator	58	--	--	--	--	-1.8	--	--	--	--	25	--	--	--	--

(continued)

¹ EL = Ellis County test at KSU Ag. Research Center, Hays, KS. ³ GD = Greeley County test at KSU SW Res.-Ext. Center, Tribune, KS
² TD = Thomas County test at KSU NW Res.-Ext. Center, Colby, KS. ⁴ FD = Finney Co. test at KSU SW Res.-Ext. Center, Garden City, KS.
(W) = Hard white wheat. ** Least Significant Difference, similar to 'Margin of Error', indicates difference needed to overcome test error.

Table 11 - continued

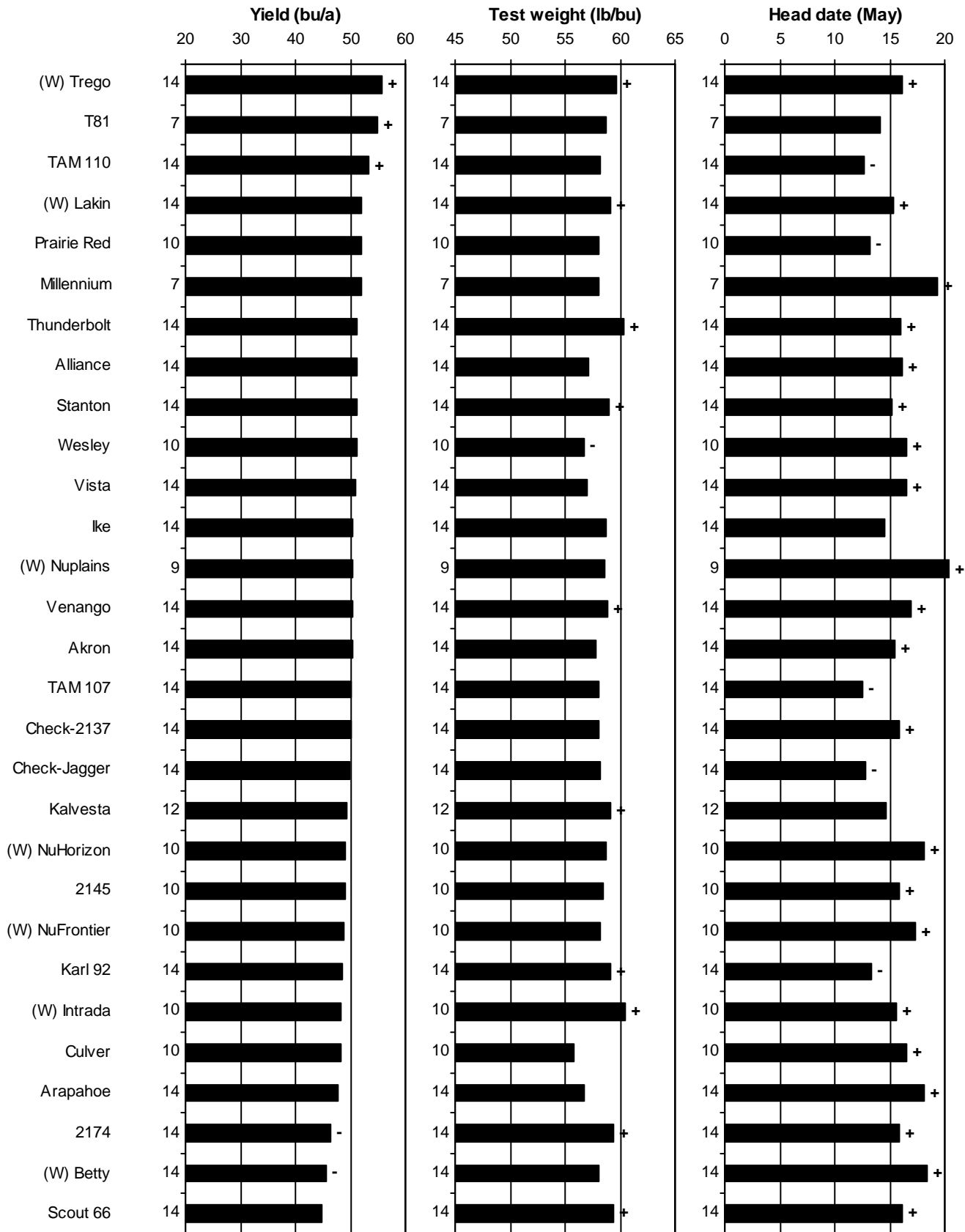
Brand / Name	EL ¹	TD ²	GD ³	FD ⁴	Avg.	EL	TD	GD	FD	Avg.	EL	TD	GD	FD	Avg.	
	test weight (lb/bu)					heading (days +/- Scout)					plant height (in)					
Public																
(W) Avalanche	60	61	60	61	60	-0.5	-0.8	0.5	0.3	-0.1	29	26	19	24	24	
(W) Betty	57	59	56	59	58	1.8	3.0	4.0	2.8	2.9	30	27	19	24	25	
(W) Intrada	60	60	59	61	60	-1.0	-1.5	1.8	-0.8	-0.4	27	24	18	22	23	
(W) Lakin	58	60	58	60	59	-2.0	-0.8	-0.8	-2.3	-1.4	28	25	21	22	24	
(W) Nuplains	56	61	59	61	59	4.0	3.5	5.0	5.5	4.5	26	25	20	22	23	
(W) Trego	60	58	59	61	60	-0.8	0.3	0.3	-0.5	-0.2	26	23	21	22	23	
2137	56	58	58	59	58	-1.0	-1.0	0.5	-1.0	-0.6	28	26	18	23	24	
2145	58	60	59	59	59	-1.5	-0.5	0.5	-1.3	-0.7	26	24	19	23	23	
2174	58	59	58	61	59	-1.8	-0.5	1.3	-1.8	-0.7	27	26	18	23	23	
Above	58	58	59	59	59	-4.0	-3.5	-1.3	-2.8	-2.9	27	25	19	23	24	
Akron	57	58	58	59	58	-2.8	-0.8	-0.8	-2.5	-1.7	29	25	21	24	25	
Alliance	57	59	57	59	58	0.0	-0.5	1.5	0.0	0.3	27	26	19	24	24	
Arapahoe	56	58	58	59	58	2.3	1.8	2.5	3.5	2.5	30	26	20	25	25	
Ike	59	59	58	59	59	-2.3	-2.8	-1.3	-1.8	-2.0	29	26	17	23	24	
Jag,2137	57	58	58	59	58	-3.5	-2.8	-1.0	-1.3	-2.1	29	26	20	23	24	
Jag,2137,Stan	57	59	59	59	59	-3.8	-2.5	-0.5	-1.3	-2.0	28	26	21	24	24	
Jagger	58	58	58	58	58	-5.3	-3.8	-1.8	-2.0	-3.2	29	26	20	23	24	
Karl 92	60	55	58	60	58	-5.0	-3.8	-1.0	-3.3	-3.3	27	24	18	20	22	
Millennium	56	59	55	60	58	2.5	3.0	4.3	3.3	3.3	29	29	22	25	26	
Ok101	59	59	58	60	59	-4.0	-4.0	-1.0	-2.3	-2.8	28	25	19	22	23	
Prairie Red	57	58	58	59	58	-5.0	-4.0	-1.3	-2.8	-3.3	27	25	19	22	23	
Scout 66	59	59	59	60	59	0.0	0.0	0.0	0.0	0.0	34	28	25	26	28	
Stanton	58	60	59	60	59	-1.8	-1.8	-1.0	-0.8	-1.3	28	26	20	23	24	
TAM 107	58	58	58	59	58	-5.8	-4.0	-1.8	-4.0	-3.9	27	25	21	22	24	
Vista	56	58	58	58	57	0.8	0.0	2.0	1.8	1.1	26	24	17	22	22	
Wahoo	56	58	56	--	--	-0.5	1.5	1.8	--	--	28	28	21	--	--	
Wesley	56	58	58	--	--	0.8	-0.3	0.3	--	--	27	26	19	--	--	
Average	57	59	58	59	58	-1.1	-0.6	0.9	-0.2	-0.3	28	26	19	23	24	
CV (%)	2	2	2	1	--	0.6	3.0	5.8	7.7	--	4	4	12	3	--	
LSD (0.05)**	1	2	2	1	--	1.0	0.9	1.3	1.2	--	2	1	3	1	--	

¹ EL = Ellis County test at KSU Ag. Research Center, Hays, KS.³ GD = Greeley County test at KSU SW Res.-Ext. Center, Tribune, KS² TD = Thomas County test at KSU NW Res.-Ext. Center, Colby, KS.⁴ FD = Finney Co. test at KSU SW Res.-Ext. Center, Garden City, KS.

(W) = Hard white wheat.

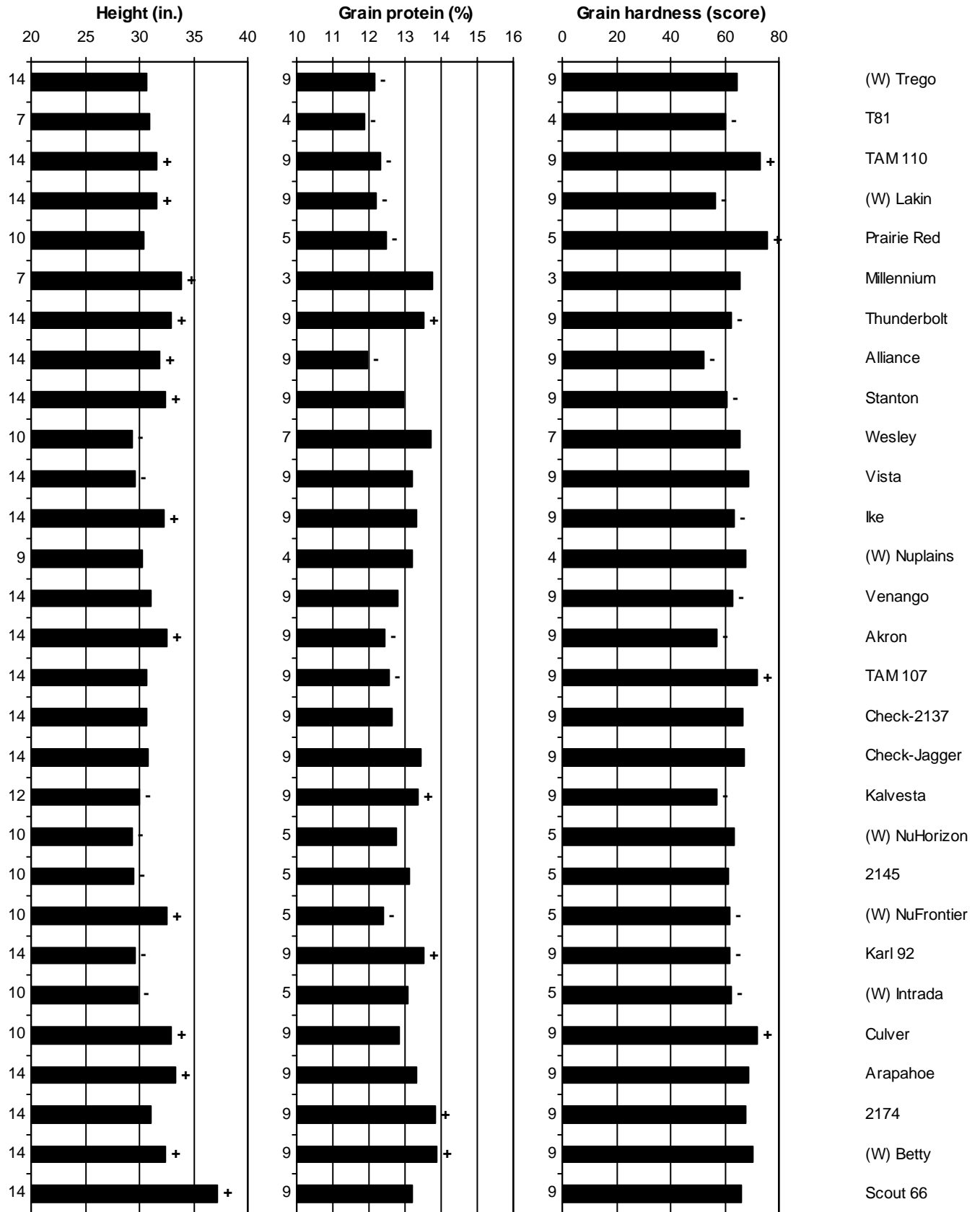
** Least Significant Difference, similar to 'Margin of Error', indicates difference needed to overcome test error.

Figure 7. Wheat variety performance summary, WESTERN region, 1999-2002



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

Figure 7. WESTERN region - continued



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

Table 12. Yield, 2002 IRRIGATED Kansas Winter Wheat Performance Tests.

Brand / Name	SI ¹ TI ² FI ³ SV ⁴				Avg.	SI TI FI SV Avg.				St.John-1		Colby-2		Garden C.-3		Hugoton-4		
	bushels/acre					% of test average				multi-year averages, bushels/acre								
AgriPro																		
Cutter	73	52	56	--	60	116	97	91	--	102	--	--	--	--	--	--	--	
Dumas	--	54	58	--	--	--	102	95	--	--	--	--	--	--	--	--	--	
Jagalene	81	60	68	--	69	129	112	111	--	118	--	--	--	--	--	--	--	
AGSECO																		
Exp 2047	61	51	62	--	58	97	95	101	--	98	--	--	--	--	--	--	--	
Exp 2139	--	51	--	--	--	--	95	--	--	--	--	--	--	--	--	--	--	
Exp 2202	--	--	52	--	--	--	--	86	--	--	--	--	--	--	--	--	--	
TAM 110	78	53	70	--	67	125	100	115	--	113	--	--	--	--	--	--	--	
DSS																		
T81	--	--	67	--	--	--	--	110	--	--	--	--	--	--	55	55	--	--
General Mills																		
(SW) GM30001	40	44	52	--	45	65	83	85	--	77	--	--	--	--	--	--	--	
(SW) GM30002	44	45	55	--	48	71	85	91	--	82	--	--	--	--	--	--	--	
(W) NuFrontier	52	58	69	--	60	84	108	113	--	102	52	--	65	64	57	56	--	--
(W) NuHorizon	55	51	59	--	55	88	96	97	--	94	46	--	59	60	53	52	--	--
Goertzen																		
G970019	--	--	64	--	--	--	--	105	--	--	--	--	--	--	--	--	--	
G970209W	--	--	53	--	--	--	--	87	--	--	--	--	--	--	--	--	--	
G970246	--	--	66	--	--	--	--	108	--	--	--	--	--	--	--	--	--	
G970343	--	--	67	--	--	--	--	110	--	--	--	--	--	--	--	--	--	
G970380A	--	--	59	--	--	--	--	96	--	--	--	--	--	--	--	--	--	
G970447	--	--	66	--	--	--	--	108	--	--	--	--	--	--	--	--	--	
G970454	--	--	57	--	--	--	--	94	--	--	--	--	--	--	--	--	--	
G970466	--	--	66	--	--	--	--	109	--	--	--	--	--	--	--	--	--	
Kalvesta	54	56	61	--	57	86	105	100	--	97	55	65	57	57	51	54	50	--
Venango	56	53	58	--	56	89	100	96	--	95	50	63	61	62	50	52	60	--
Polansky																		
Dominator	53	--	--	--	--	85	--	--	--	--	--	--	--	--	--	--	--	
Public																		
(W) Betty	66	49	56	--	57	105	93	92	--	97	64	67	57	56	45	47	68	72
(W) Intrada	--	--	56	--	--	--	--	92	--	--	--	--	--	--	49	--	--	--
(W) Lakin	63	56	70	--	63	101	105	116	--	107	53	63	57	59	56	56	59	--
(W) Trego	67	60	70	--	65	107	112	115	--	111	55	63	65	67	59	57	51	63
2137	70	55	63	--	63	112	104	104	--	106	62	70	58	60	51	55	61	66
2145	60	53	58	--	57	95	99	95	--	96	58	--	57	58	48	51	--	--
2174	58	53	60	--	57	92	100	98	--	97	53	61	59	59	51	55	67	--
Jag,2137	73	53	58	--	61	117	99	95	--	103	--	--	--	--	--	--	--	--
Jag,2137,K92	67	55	59	--	60	107	102	97	--	102	--	--	--	--	--	--	--	--
Jagger	74	51	52	--	59	118	95	85	--	99	67	78	58	59	45	48	75	79
Karl 92	61	54	53	--	56	98	101	87	--	95	61	70	61	61	46	51	74	82
Stanton	--	61	68	--	--	--	114	111	--	--	--	--	67	67	56	56	59	68
TAM 107	71	52	65	--	63	113	98	106	--	106	58	62	56	60	52	52	51	63
Average	62	53	61	--	59	62	53	61	--	59	57	65	59	60	51	52	64	71
CV (%)	7	4	5	--	--	7	4	5	--	--	--	--	--	--	--	--	--	--
LSD (0.05)**	6	3	4	--	--	10	5	6	--	--	--	--	--	--	--	--	--	--

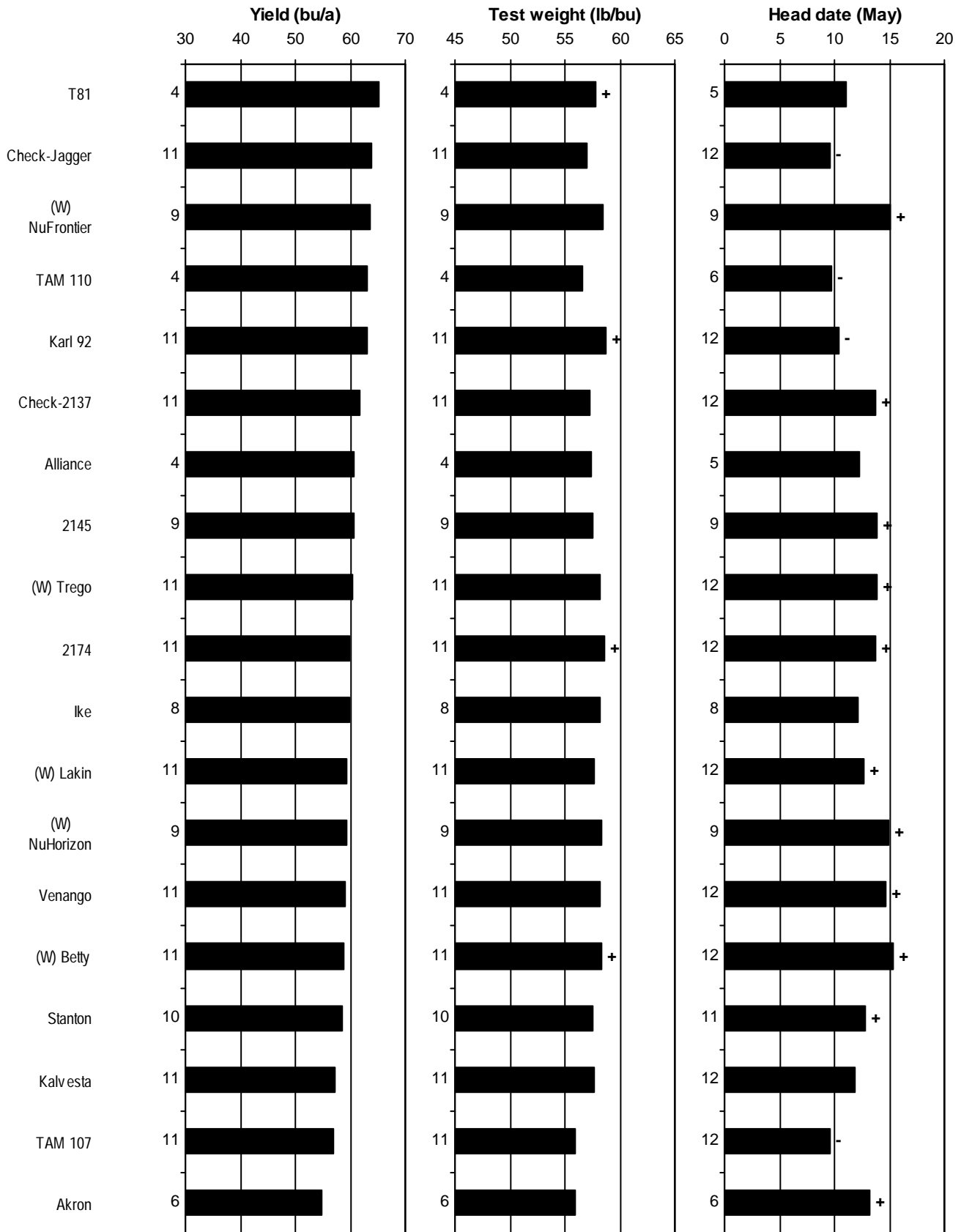
¹ SI = Stafford County test at Sandyland Exp. Field, St. John, KS. ³ FI = Finney County test at KSU SW Res.-Ext. Center, Garden City, KS.
² TI = Thomas County test at KSU NW Res.-Ext. Center, Colby, KS. ⁴ SV = Stevens Co. test, Kramer Seed Farms, Hugoton - Too variable.
(W) = Hard white wheat. ** Least Significant Difference, similar to 'Margin of Error', indicates difference needed to overcome test error.

Table 13. TW, Heading, Height, 2002 IRRIGATED Kansas Winter Wheat Performance Tests.

Brand / Name	SI ¹	TI ²	FI ³	SV ⁴	Avg.	SI	TI	FI	SV	Avg.	SI	TI	FI	SV	Avg.
	test weight (lb/bu)					heading (days +/- Jagger)					plant height (in)				
AgriPro															
Cutter	57	60	61	--	60	6.0	3.0	1.0	--	3.3	29	29	37	--	32
Dumas	--	61	62	--	--	--	3.8	3.0	--	--	--	29	33	--	--
Jagalene	60	62	62	--	61	5.8	3.3	4.3	--	4.4	30	28	35	--	31
AGSECO															
Exp 2047	56	59	60	--	58	6.8	4.5	4.5	--	5.3	26	27	33	--	29
Exp 2139	--	59	--	--	--	--	2.8	--	--	--	--	27	--	--	--
Exp 2202	--	--	60	--	--	--	--	2.5	--	--	--	--	33	--	--
TAM 110	58	59	61	--	59	3.3	0.5	-0.3	--	1.2	29	26	33	--	29
DSS															
T81	--	--	61	--	--	--	--	0.8	--	--	--	--	34	--	--
General Mills															
(SW) GM30001	52	53	56	--	54	14.5	10.0	10.5	--	11.7	29	28	32	--	29
(SW) GM30002	52	55	58	--	55	11.5	7.3	9.5	--	9.4	30	28	32	--	30
(W) NuFrontier	55	60	62	--	59	10.3	4.3	5.0	--	6.5	28	30	35	--	31
(W) NuHorizon	57	62	62	--	60	8.5	4.5	5.3	--	6.1	25	27	32	--	28
Goertzen															
G970019	--	--	60	--	--	--	--	3.5	--	--	--	--	33	--	--
G970209W	--	--	61	--	--	--	--	1.5	--	--	--	--	33	--	--
G970246	--	--	60	--	--	--	--	2.8	--	--	--	--	35	--	--
G970343	--	--	62	--	--	--	--	4.3	--	--	--	--	33	--	--
G970380A	--	--	61	--	--	--	--	0.0	--	--	--	--	32	--	--
G970447	--	--	60	--	--	--	--	2.0	--	--	--	--	32	--	--
G970454	--	--	60	--	--	--	--	3.3	--	--	--	--	32	--	--
G970466	--	--	61	--	--	--	--	3.3	--	--	--	--	32	--	--
Kalvesta	57	61	61	--	60	5.8	1.8	1.8	--	3.1	28	27	33	--	29
Venango	56	61	62	--	60	10.0	5.3	4.8	--	6.7	29	30	35	--	31
Polansky															
Dominator	58	--	--	--	--	5.5	--	--	--	--	24	--	--	--	--
Public															
(W) Betty	58	60	61	--	60	10.0	5.8	5.5	--	7.1	30	31	36	--	32
(W) Intrada	--	--	63	--	--	--	--	2.0	--	--	--	--	33	--	--
(W) Lakin	57	61	62	--	60	6.3	3.5	2.5	--	4.1	27	27	34	--	29
(W) Trego	59	58	63	--	60	6.8	4.8	3.0	--	4.8	26	27	33	--	29
2137	57	60	61	--	59	7.5	4.5	4.0	--	5.3	29	28	35	--	30
2145	56	60	61	--	59	6.0	4.5	3.5	--	4.7	26	27	34	--	29
2174	58	60	61	--	60	7.5	4.5	2.5	--	4.8	26	30	34	--	30
Jag,2137	57	60	61	--	59	1.5	0.8	0.5	--	0.9	28	26	34	--	29
Jag,2137,K92	58	60	60	--	59	1.0	1.3	1.3	--	1.2	27	28	34	--	30
Jagger	58	60	61	--	60	0.0	0.0	0.0	--	0.0	28	28	34	--	30
Karl 92	57	61	60	--	60	3.5	1.5	0.3	--	1.8	28	25	33	--	28
Stanton	--	60	61	--	--	--	3.8	2.3	--	--	--	29	35	--	--
TAM 107	58	58	60	--	59	2.0	0.0	-1.0	--	0.3	28	26	34	--	29
Average	57	60	61	--	59	6.4	3.6	2.9	--	4.3	28	28	34	--	30
CV (%)	2	2	1	--	--	3.1	2.7	7.7	--	--	6	5	2	--	--
LSD (0.05)**	2	2	1	--	--	1.5	0.8	1.2	--	--	2	2	1	--	--

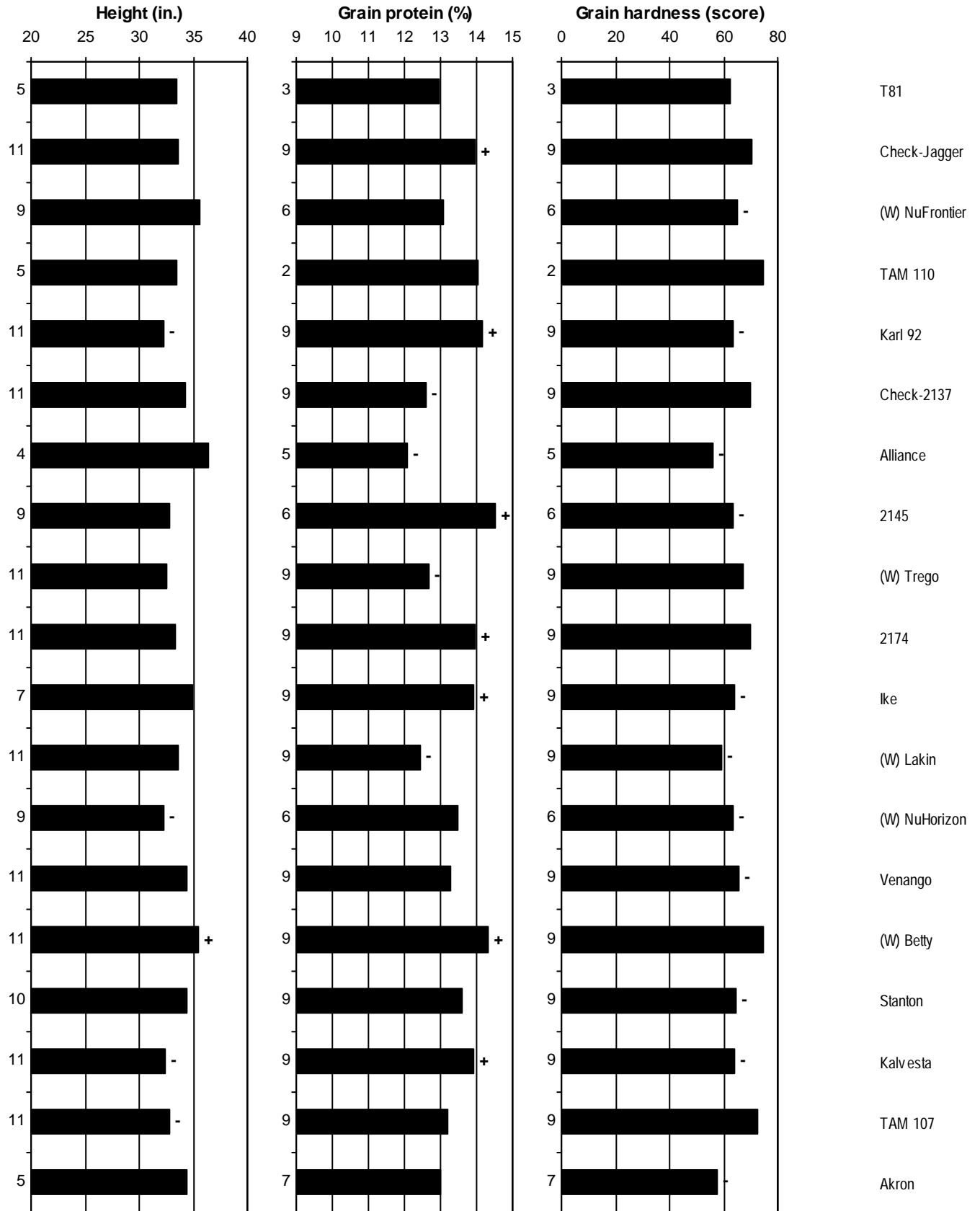
¹ SI = Stafford County test at Sandyland Exp. Field, St. John, KS. ³ FI = Finney County test at KSU SW Res.-Ext. Center, Garden City, KS.
² TI = Thomas County test at KSU NW Res.-Ext. Center, Colby, KS. ⁴ SV = Stevens Co. test at Kramer Seed Farms, Hugoton - Too variable.
(W) = Hard white wheat. ** Least Significant Difference, similar to 'Margin of Error', indicates difference needed to overcome test error.

Figure 8. Wheat variety performance summary, IRRIGATED region, 1999-2002



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

Figure 8. IRRIGATED region - continued



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

Table 14. Vigor, shattering, and lodging notes from 2002 Kansas Wheat Performance Tests.

Brand / Name	Spring Vigor ¹		Shattering (%) ²			Lodg (%) ³		Brand / Name	Spring Vigor ¹		Shattering (%) ²			Lodg (%) ³	
	CS	HV	ED	TD	TI	HV	TI		CS	HV	ED	TD	TI	HV	TI
AgriPro								Pioneer							
AP502CL	--	--	2	0	--	--	--	(S) 25R49	2	--	--	--	--	--	--
AP98-363W	--	--	3	0	--	--	--	(S) 25R78	2	--	--	--	--	--	--
Cutter	--	1	4	0	0	4	0	Polansky							
Dumas	--	--	3	0	0	--	0	Dominator	--	2	3	--	--	0	--
Hondo	--	--	--	--	--	--	--	WPB							
Jagalene	--	1	5	0	0	0	0	(S) Y98-912	2	--	--	--	--	--	--
Thunderbolt	--	--	4	8	--	--	--	(S) Z98*912	3	--	--	--	--	--	--
AGS								Public							
(S) 2000	4	--	--	--	--	--	--	(S) Caldwell	2	--	--	--	--	--	--
AGSECO								(S) Kaskaskia	2	--	--	--	--	--	--
7853	--	2	--	--	--	0	--	(S) Roane	2	--	--	--	--	--	--
Exp 2047	--	2	2	0	0	0	0	(W) Avalanche	--	--	2	0	--	--	--
Exp 2139	--	--	3	0	0	--	0	(W) Betty	--	--	3	0	0	--	0
Exp 2202	--	2	--	--	--	0	--	(W) Intrada	--	--	3	0	--	--	--
Onaga	--	2	--	--	--	0	--	(W) Lakin	--	--	2	0	0	--	0
TAM 110	--	--	2	0	0	--	10	(W) Nuplains	--	--	3	0	--	--	--
DSS								(W) Trego	--	--	2	0	0	--	0
T81	--	--	--	--	--	--	--	2137	1	1	3	0	0	0	0
General Mills								2145	--	1	5	0	0	1	0
(SW) GM30001	--	4	1	0	0	0	1	2163	--	2	--	--	--	0	--
(SW) GM30002	--	5	1	0	0	0	0	2174	--	1	2	0	0	0	0
(W) NuFrontier	--	2	2	0	0	0	0	Above	--	--	2	0	--	--	--
(W) NuHorizon	--	1	2	0	0	0	0	Akron	--	--	2	0	--	--	--
Goertzen								Alliance	--	--	2	0	--	--	--
G970019	--	--	--	--	--	--	--	Arapahoe	--	--	3	0	--	--	--
G970209W	--	--	--	--	--	--	--	Culver	--	--	--	--	--	--	--
G970246	--	--	--	--	--	--	--	Ike	--	--	2	0	--	--	--
G970343	--	--	--	--	--	--	--	Jag,2137	--	1	4	0	0	0	0
G970380A	--	--	--	--	--	--	--	Jag,2137,Dom	--	--	--	--	--	--	--
G970447	--	--	--	--	--	--	--	Jag,2137,K92	--	1	--	--	0	0	0
G970454	--	--	--	--	--	--	--	Jag,2137,Stan	--	--	3	0	--	--	--
G970466	--	--	--	--	--	--	--	Jagger	3	2	5	0	0	0	6
Kalvesta	--	--	--	--	0	--	0	Karl 92	--	1	2	0	0	0	0
Venango	--	2	5	1	3	0	0	Millennium	--	--	2	0	--	--	--
MFA								Ok101	--	3	2	0	--	0	--
(S) 1828	2	--	--	--	--	--	--	Prairie Red	--	--	2	0	--	--	--
(S) 766	2	--	--	--	--	--	--	Scout 66	--	1	2	0	--	2	--
M-Pride								Stanton	--	--	2	0	0	--	0
(S)MPV7921SR	2	--	--	--	--	--	--	TAM 107	--	--	2	0	0	--	5
NK								Vista	--	--	2	0	--	--	--
(S) BL940812	3	--	--	--	--	--	--	Wahoo	--	--	2	0	--	--	--
(S) Coker 9025	1	--	--	--	--	--	--	Wesley	--	--	2	0	--	--	--
(S) Coker 9474	2	--	--	--	--	--	--	Average							
(S) Coker 9663	3	--	--	--	--	--	--	2	2	3	0	0	0	0	1
								CV (%)							
								17	15	17	277	980	169	173	
								LSD (0.05)**							
								1	0	1	1	1	1	2	

¹ Rated 1-5; 1 = best, 5 = worst; CS = Soft wheat test, Pittsburg, HV = Hesston.

³ HV = Hesston

² ED = Hays, TD = Colby Dryland, TI = Colby Irrigated.

Table 15. Planted seed characteristics, coleoptile lengths, and Hessian fly ratings.

Brand / Name	1000					Brand / Name	1000				
	Seed weight (grams)	Test weight (lb/bu)	Seeds per lb. (1000)	Col. length (1-9) ¹	Hess. fly ²		Seed weight (grams)	Test weight (lb/bu)	Seeds per lb. (1000)	Col. length (1-9) ¹	Hess. fly ²
AgriPro						Pioneer					
AP502CL	36.8	--	12.4	5	S	(S) 25R49	42.8	57.5	10.6	8	S
AP98-363W	27.3	56.7	16.7	7	S	(S) 25R78	41.0	64.6	11.1	7	H
Cutter	35.5	63.2	12.8	5	S	Polansky					
Dumas	27.8	64.0	16.4	--	S	Dominator	27.3	63.3	16.7	8	H+
Hondo	29.0	60.9	15.7	6	R-	WPB					
Jagalene	40.0	64.4	11.4	6	S	(S) Y98-912	31.0	61.6	14.7	--	S
Thunderbolt	24.8	60.1	18.3	6	S	(S) Z98*912	35.8	61.6	12.7	--	H
AGS						Public					
(S) 2000	43.5	62.5	10.4	--	S	(S) Caldwell	29.8	56.5	15.3	8	H
AGSECO						(S) Kaskaskia	33.3	59.1	13.7	6	S
7853	33.0	62.1	13.8	7	S	(S) Roane	30.8	63.7	14.8	7	R-
Exp 2047	30.0	58.2	15.1	5	S	(W) Avalanche	40.8	58.7	11.1	7	S
Exp 2139	29.3	56.9	15.5	6	S	(W) Betty	29.3	56.1	15.5	7	S
Exp 2202	33.5	57.9	13.6	6	S	(W) Intrada	28.0	64.6	16.2	6	S
Onaga	30.5	64.6	14.9	6	H	(W) Lakin	26.8	57.7	17.0	7	S
TAM 110	38.8	64.6	11.7	5	S	(W) Nuplains	26.3	63.1	17.3	7	S
DSS						(W) Trego	31.5	62.5	14.4	6	H
T81	36.3	64.0	12.5	7	S	2137	26.5	59.8	17.1	7	H
General Mills						2145	32.3	58.0	14.1	6	H
(W) NuFrontier	34.8	64.7	13.1	5	H-	2163	29.8	56.9	15.3	7	R
(W) NuHorizon	39.3	65.0	11.6	5	S	2174	31.8	59.7	14.3	5	H-
(SW) GM30001	43.5	59.5	10.4	5	S	Above	38.0	--	12.0	5	S
(SW) GM30002	36.8	--	12.4	5	S	Akron	41.3	59.3	11.0	6	H-
Goertzen						Alliance	34.0	61.8	13.4	8	H
G970019	37.8	61.2	12.0	7	S	Arapahoe	32.3	58.3	14.1	7	R-
G970209W	39.0	61.3	11.6	6	S	Culver	34.3	59.9	13.3	6	H
G970246	34.5	59.5	13.2	6	H+	Ike	33.5	61.5	13.6	7	R-
G970343	35.5	62.9	12.8	5	S	Jagger	32.5	60.6	14.0	6	S
G970380A	34.0	61.7	13.4	7	S	Karl 92	35.5	58.8	12.8	7	S
G970447	29.5	59.8	15.4	6	S	Millennium	37.3	64.0	12.2	7	R-
G970454	32.8	60.6	13.9	6	S	Ok101	35.3	62.6	12.9	8	S
G970466	28.0	62.6	16.2	7	S	Prairie Red	43.5	60.3	10.4	5	S
Kalvesta	28.5	61.5	15.9	7	S	Scout 66	29.3	61.2	15.5	3	S
Venango	30.5	62.1	14.9	7	H	Stanton	34.0	56.0	13.4	6	H
MFA						TAM 107	33.3	57.8	13.7	5	S
(S) 1828	32.0	61.1	14.2	8	R-	Vista	36.5	61.6	12.4	8	R
(S) 766	34.5	63.1	13.2	8	S	Wahoo	34.0	61.5	13.4	6	R
M-Pride						Wesley	37.3	59.3	12.2	7	S
(S)MPV7921SRW	35.8	58.6	12.7	7	S	Jag,2137	39.8	61.8	11.4	--	--
NK						Jag,2137,Dom	34.3	62.4	13.3	--	--
(S) BL940812	37.3	62.3	12.2	--	H	Jag,2137,K92	38.3	60.7	11.9	--	--
(S) Coker 9025	36.0	59.1	12.6	5	S	Jag,2137,Stan	37.5	59.3	12.1	--	--
(S) Coker 9474	31.0	61.2	14.7	4	H+	Maximum	43.5	65.0	18.3	8	
(S) Coker 9663	33.5	60.2	13.6	3	H-	Minimum	24.8	56.0	10.4	3	
						Average	33.9	60.9	13.6	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 2. Ratings provided by T. Joe Martin, Kansas State University Agricultural Research Center - Hays.

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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Kansas State University Agricultural Experiment Station and Cooperative Extension Service, Manhattan 66506

SRP 896

July 2002

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