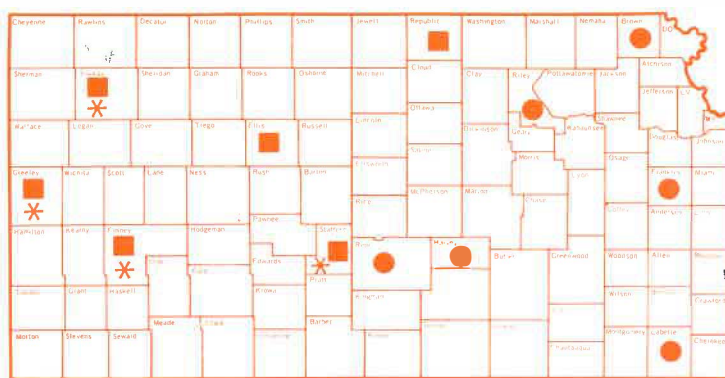




1984 Performance Tests with Winter Wheat Varieties



● continuously cropped land ■ summer fallow * irrigated

AGRICULTURAL EXPERIMENT STATION
 Kansas State University, Manhattan
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1984 KANSAS PERFORMANCE TESTS WITH
WINTER WHEAT VARIETIES

Compiled by Ted L. Walter, Research Agronomist

INTRODUCTION

Test Objectives

To help Kansas growers select wheat varieties best suited for their areas and conditions, the Kansas Agricultural Experiment Station annually compares both new and currently grown varieties in the state's major crop producing areas.

1984 Crop Conditions

The dry, hot summer and fall in 1983 caused delayed plantings or irregular emergence over much of the state, particularly in northwestern and west-central regions. Rains in October allowed much of the crop to emerge and develop a good root system before cold weather, but some fields had below average growth and were vulnerable to winter damage. Many of the poorer fields abandoned for grain production in the spring were enrolled in the government acreage reduction program.

For the third consecutive year, the spring season was unusually cool and wet, so leaf diseases such as tan spot and speckled leaf blotch were important yield-reducing factors on susceptible varieties over much of eastern Kansas. Soilborne mosaic caused severe damage to susceptible varieties, particularly in south-central Kansas. Mosaic symptoms were expressed in many areas, including some irrigated acreage in southwest Kansas. A disease called wheat spindle streak mosaic was identified in several Kansas counties. It bears watching because of an apparent undesirable interaction with wheat soilborne mosaic virus on soilborne-resistant varieties. Both leaf and stem rust appeared too late in the season to cause serious damage.

Other diseases noted, but not considered serious statewide, included take-all, various crown rots, powdery mildew, Cephalosporium stripe, bacterial leaf blight, scab, loose smut, wheat streak mosaic, stripe rust, and strawbreaker.

Widespread Hessian fly damage did not occur in 1984 because of lack of volunteer and the high frequency of drouth-delayed plantings, but many widely grown varieties are highly susceptible and vulnerable in years with abundant volunteer wheat and early plantings. Resistant varieties, e.g. Larned or Arkan, should be planted for early pasture. Other insects reported in local areas were greenbugs and army cutworms.

When the abundant spring rains ceased and the weather turned hot around mid-June, a considerable acreage ripened prematurely, because of hot winds, shallow root systems, and the presence of root rots. Individual dead plants could be seen in many fields and test weights were reduced across broad areas of the state.

According to the Kansas Crop and Livestock Reporting Service (August 10, 1984 estimates), about 429 million bushels were harvested. If realized, this would be 4 percent below 1983 and the fourth largest crop on record. The estimated acre yield of 39 bushels is only 2.5 bushels below the record set in 1983.

Wheat protein averaged 11.6 percent (August, 1984 estimate), somewhat below the 1973-82 average of 11.9 percent, but higher than the 11.3 percent recorded in 1983. Test weights averaged 60.2 pounds per bushel, lower than the 10-year average of 61.0 pounds, and below the 1983 average of 61.6 pounds.

WINTER WHEAT VARIETIES

Varieties Grown in Kansas

Varieties generally described as "semidwarfs" occupied over two-thirds of 1984 Kansas wheat acreage. These vary from the very short-statured Vona and Garst HR64 to "taller dwarf" types like Newton and Hawk. Heights shown in Table 10 illustrate the variation among current varieties and hybrids in a year favorable for plant growth.

The dominant semidwarfs were Newton (30.9% of 1984 average), TAM 105 (13.1%), Hawk (9.0%), Vona (5.7%), PL 145 (2.4%), and Wings (2.2%). Standard height varieties were led by Larned (10.2%), Eagle (5.4%), Scouts (4.2%), Sage (1.8%), Centurks (1.7%), Rocky (1.3%), and Triumphs (1.1%). Hybrids currently under test generally fall in the standard

height or "tall-dwarf" groups, but breeding programs are producing shorter hybrids, as well. Short height is desirable from the standpoint of improving standability (see lodging records for 1982-84 in Table 11).

Newton remained the most widely-grown variety in the eastern two-thirds of the state and in northwestern Kansas, while Larned occupied the most acreage in west-central and southwestern districts (Figure 1). Newton acreage declined from 1983 to 1984 in all districts except west-central and is expected to decline even further in 1985, following three years of wet weather disease damage and declining yields. Newton has badly needed soilborne mosaic resistance and still could perform well in drier seasons, but lacks resistance to tan spot, speckled leaf blotch, leaf rust, and Hessian fly. TAM 105, the second leading variety, now has significant acreage in all nine state districts, but it should not be grown on land known to be infested with soilborne mosaic. It generally has outyielded Newton in recent years, is more winter hardy, and has more protection against leaf diseases, but has lower test weight than Newton.

Hawk acreage increased significantly, while Vona acreage declined and is expected to decline even more as the result of considerable winter injury during the 1983-84 season. Larned, Eagle, and Scout acreage has remained stable over the past two seasons in the western third of the state.

Origin, Characterization, and Performance Measurements of Entries

Parentage and origin of public varieties in 1984 Kansas Agricultural Experiment Station tests are given in Table 1; comparative ratings for important agronomic traits, pest resistance, and bread-making quality are in Table 2. Recent data from Kansas experiment stations (Tables 5 through 12) give side-by-side repeated varietal comparisons at 16 test sites representing various wheat-producing areas of the state. Locations of branch experiment stations and experiment field test sites are shown on the map on the front cover. Two tests failed to give useful data in 1984; Powhattan was hailed and the Tribune fallow test did not have adequate fall moisture to establish uniform stands.

Privately developed varieties are entered into the Kansas Wheat Performance Test program by their originators or purchasers. Entry is voluntary. Entrants choose both the entries and test sites and pay the state a fee for each entry-location to help defray test expenses. The program is similar to those for corn, sorghum, soybeans, and alfalfa. The object is to provide Kansas growers with performance information on all varieties and hybrids likely to become available in the state.

The 1984 private entrants and entries are listed in Table 3. Eight entrants provided 16 varieties and 18 hybrids for testing at locations of their choice. Public and private entries were grown together at random in the same tests. Growers interested in more detailed descriptions of private entries should contact the entrants directly (see addresses in Table 3 or consult the Kansas Crop Improvement Certified Seed Directory).

Characteristics of specific 1984 entries can best be determined by examining Table 2 and data in Tables 5 through 12 for the relative performance of new varieties or hybrids of interest compared to those the farmer is currently growing. Yields are reported in Table 5 as bushels per acre (60 lbs. per bu.) adjusted to a moisture content of 12.5 percent where moistures were recorded at harvest. In Table 6 bushel yields are converted to yields as percentages of the test average to speed recognition of highest yielding entries (more than 100%, the test average). The outstanding state-wide 1984 performances of Bounty Hybrid 203 and TAM 107 are immediately visible in Table 6, as are the excellent yields of other entries at specific locations.

Growers should go on to Table 7 to check the performance of entries over several years at locations closest to their farms, since one-year results can be misleading because of unusual weather conditions.

Measurements of characteristics often contributing to yield performance are shown in Table 8 (test weights), Table 9 (maturity differences), Table 10 (heights), Table 11 (lodging), and Table 12 (disease ratings and winter survival readings).

At the bottom of each table is shown the L.S.D. (least significant difference) for each column of data. This is obtained from a statistical technique available for properly designed replicated and randomized tests. The use of L.S.D. is intended to reduce the chance of overemphasizing small differences in yield or other characteristics. 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.

Another statistical technique results in the coefficient of variation (C.V.) shown at the bottom of Table 5. This figure, if properly interpreted, can be used to estimate the degree of confidence one may have in the data presented. In this testing program, C.V.'s below 10% generally indicate reliable, uniform data, while C.V.'s from 11 to 15% usually indicate less desirable, but generally useful data for the rough performance comparisons desired from these tests. In 1984 tests, data from Hays and Tribune irrigated tests have less predictive value for 1985 performance than tests with lower C.V.'s.

New Variety Descriptions

Two public varieties, entered for the first time in 1984 as Texas Experimentals TXGH2875 and TX71A562-6-28, are scheduled for release this fall as TAM 107 and TAM 108, respectively. On the basis of 1984 tests and previous nursery tests in Kansas, TAM 107 appears promising for non-soilborne infected soils in the state. Closely related to TAM 105, TAM 107 often outyields TAM 105, is earlier and shorter, and has stem rust, powdery mildew and biotype C greenbug resistance not carried by TAM 105. TAM 107 has red chaff, looks much like TAM 105, and should have sufficient hardiness for all of Kansas.

TAM 108 yielded well at some Kansas locations in 1984, but was not as outstanding as in previous nursery trials. It is later maturing than TAM 107 (more like Newton) and may have ripened prematurely during the mid-June hot weather. Relatively low test weights for TAM 108 were noted in 1984 and in previous tests. TAM 108 has many desirable characteristics, including good resistance to soilborne mosaic, moderate resistance to powdery mildew, and resistance to a number of races of stem rust and leaf rust. It appeared to be about the same height as TAM 105, but tended to lodge more in several tests.

The Nebraska Agricultural Experiment Station released two new varieties, Centura and Colt, in 1983 and is releasing another variety named Siouxland in 1984. Centura appeared and performed much like Centurk 78, one of its parents, in 1984 Kansas tests and both reacted similarly to diseases present.

Colt is short like Vona, but is much more winter hardy than Vona. It is slightly later in maturity than Centurk 78, so may be considered too late by many Kansas growers. Colt did exhibit moderate resistance to soilborne mosaic at Powhattan and showed more tan spot tolerance than Vona, Newton, and TAM 105 at Manhattan. It yielded well, but was seldom outstanding in 1984 tests.

Siouxland, like Centura, is similar in appearance and maturity to Centurk 78. It was described in Nebraska as having resistance to mildew, leaf rust, and stem rust in the field, but was susceptible to soilborne mosaic, wheat streak mosaic, and Hessian fly.

Chisholm was released by the Oklahoma Agricultural Experiment Station in 1983. It is short, much like Vona and Colt, and is early maturing in the range of Triumph 64 and Arkan. It yielded well in 1984 tests and had excellent test weights. Chisholm is susceptible to soilborne mosaic and Hessian fly, but has field resistance to leaf rust.

Variety Plot Test Conditions

Test site descriptions, fertilizers applied, and other management items are in Table 4. Tests failed at Powhattan (Northeast) and Tribune fallow (West-central) because of severe hail June 28 and poor fall stand establishment, respectively. Average yields on the other 14 tests ranged from 42 to 91 bushels per acre; half of the tests had higher average yields than in 1983. A new Kansas performance test plot record of 106 bushels per acre was set at the Sandyland Experiment Field, St. John, under irrigation.

An early fall drouth delayed planting and emergence at many locations. Mid-October rains allowed emergence before growth was stopped by cold weather, but fall plant development was below average except at Belleville, St. John, and the irrigated sites. The dryland trials at Colby and Garden City received light irrigations in October to ensure fall emergence and some winter cover on the land. Both tests survived and provided good data, while the Tribune dryland test could not be irrigated up and failed completely.

Severe cold temperatures caused some winterkill or crown damage at Hays, Belleville, Hesston, and Garden City fallow (see Table 12 for relative winter survival notes from Belleville and Hesston). Vona appeared damaged at Hays and stands were thinned at Garden City.

Much like the last two seasons, the early spring was unusually cool and moist, resulting in slow growth and delayed heading. Rains in May and June slowed or stopped at

Parsons, Hays, Hesston, St. John, Tribune, and Garden City and heat stress in June shortened the filling period and reduced yields and test weights at those and other locations. Harvest was only slightly later than usual, and was accomplished without problems, despite a few rain delays.

Severe soilborne mosaic virus infections damaged susceptible varieties at Powhattan and Hesston. Some powdery mildew was observed at St. John early in the season, but did not develop into a serious problem. Tan spot and Septoria (speckled leaf blotch) caused considerable leaf loss in the tests and no doubt contributed to test weight reductions. Leaf rust was noted at quite a few locations, but appeared too late in June to affect yields. Another leaf disease, tentatively identified as a Helminthosporium species, did considerable damage to leaves in both Colby tests. Field ratings of susceptibility to several of the above diseases are given in Table 12.

Insect damage to tests was light. A fall infestation of brown wheat mites damaged small areas of the Garden City fallow test. A few greenbugs were observed at Parsons, Manhattan, and Hutchinson, while armyworms and wheat stem maggots were noted at Parsons and Manhattan, respectively.

Four of the tests received spring irrigations. A total of 3.75 inches of water was applied to the St. John irrigated test between heading and harvest. The Colby irrigated test received 2 to 3 inches of water at the late boot stage. That irrigation, plus subsequent rains, resulted in considerable lodging. The irrigated test at Tribune was watered September 15 and May 24. Since June was very dry at that location, a later watering might have improved yields and reduced variability, but lodging was feared.

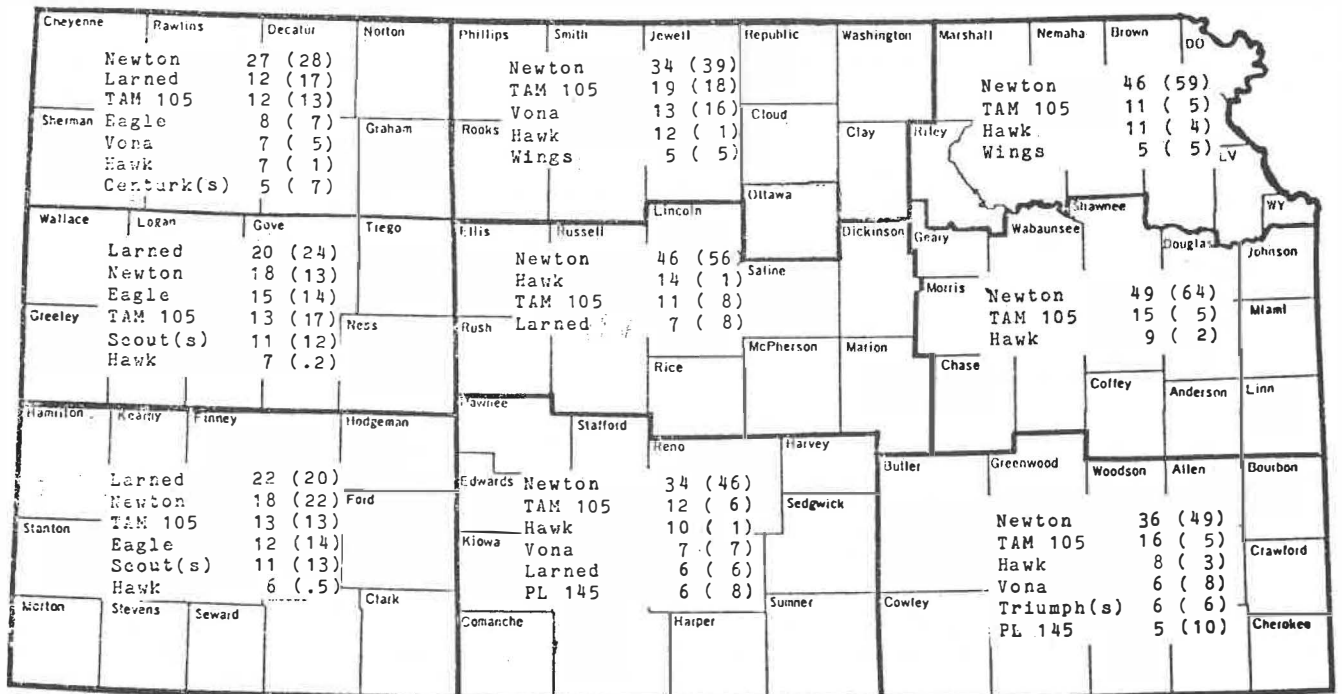


Figure 1. Wheat varieties occupying 5% or more of the 1984 Kansas wheat acreage in the 9 crop-reporting districts, and percentages of wheat acres occupied by those varieties in 1984 (1983 in parentheses).

Table 1.--Parentage and origin of public hard and soft red winter wheat varieties grown in 1984 Kansas tests.

Type and Variety	Parentage	Where and when released
<u>HARD RED WINTER</u>		
Arkan	Sage/Arthur	Kansas, 1982
Brule	NE68723/NE68719//Gage	Nebraska, 1981
Centura	Warrior*5/Agent//NE68457/3/Centurk 78	Nebraska, 1983
Centurk 78	Selection from Centurk	Nebraska, 1978
Chisholm	Early Sturdy/Nicoma	Oklahoma, 1983
Colt	Agate Sib(NE69441)/391-56-D8/Kaw(Tx65A1503-1)	Nebraska, 1983
Eagle	Selection from Scout	Kansas, 1970
Larned	Scout*5/Ottawa	Kansas, 1976
Newton	Pitic 62/Chris sib//2*Sonora 64/3/Klein Rendidor/4/Scout	Kansas, 1977
Parker 76	Parker*5/Agent	Kansas, 1976
Payne	Triumph 64/Teewon sib//Sturdy	Oklahoma, 1977
Sandy	Sonora 64A/Tezanos Pintos Precoz/Yaqui 54// (Frontanaz Kenya 58-Newthatch) x Norin ID-Brevor-Gabo 55B/Trapper//Centurk	Colorado, 1980
Siouxland	(Warrior*5/Agent)*2//Kavkaz	Nebraska, 1984
Scout 66	A composite of 85 selections from Scout	Nebraska, 1967
TAM 105	Short wheat/Scout	Texas, 1979
TAM 107	TAM 105*4/Amigo	Texas, 1984
TAM 108	Sturdy Sib/Triumph(Tx62A4615-7)//Centurk	Texas, 1984
Triumph 64	Purification of Danne's "Rust Resistant" Triumph	Oklahoma, 1967
Vona	II21183/C0652643//Lancer/KS62136	Colorado, 1976
<u>SOFT RED WINTER</u>		
Hart	Etoile de Choisy/2/Tn/Ckn/5/Pn/4/Tb/W38/Fz/Hrn	Missouri, 1976
Pike	Wash. 4303/Stoddard//Sava/Stoddard	Missouri, 1980

Table 2.--Comparisons of some hard red winter wheat varieties grown in Kansas and neighboring states for relative acreage, important agronomic traits, disease and insect resistance, and quality characteristics.^{1/}

Variety	Percent of Kansas seeded acreage 1984 ^{2/}	Relative				Resistance or tolerance to							Relative quality in terms of		
		Matur-ity	Test weight	Straw strength	Winter hardi-ness	Bunt	Loose smut	Leaf rust	Stem rust	Hes-sian fly	Wheat-streak mosaic	Soil-borne mosaic	Mill-ing	Mix-ing	Loaf volume
Arkan	0.9	2	4	3	3	6	-	1	2	1	8	1	2	3	2
Brule	0.3	5	4	4	2	-	-	4	4	2	5	6	2	2	2
Buckskin	0.5	5	5	6	3	4	5	7	6	5	8	3	2	0 ^{3/}	2
Centurk 78	1.7	5	5	6	2	6	-	4	2	7	7	5	2	1	3
Eagle	5.4	4	4	6	3	5	3	7	6	7	6	9	2	1	1
Hawk	9.0	3	4	4	5	-	-	8	3	8	6	1	2	1	3
Larned	10.2	4	4	5	3	5	-	7	3	1	6	8	2	3	2
Newton	30.9	3	4	4	6	5	-	8	4	8	6	1	2	2	1
PL 145	2.4	3	4	3	6	-	-	6	3	8	-	1	2	2	1
ProBrand 830	0.7	5	4	4	-	-	-	-	-	8	-	5	-	-	-
Rocky	1.3	5	5	6	2	-	-	4	2	8	7	1	2	0 ^{3/}	3
Sandy	0.5	6	3	6	2	-	-	-	-	8	-	-	2	0 ^{3/}	4
Sage	1.8	4	4	5	3	5	3	2	3	8	6	9	2	3	3
Scout(s)	4.2	4	4	6	3	5	3	6	5	7	6	9	2	3	3
TAM W-101	1.3	3	4	2	6	1	5	5	7	7	7	7	2	3	2
TAM 105	13.1	3	5	3	3	5	-	5	9	8	6	6	2	2	1
Trison	0.3	1	3	6	6	1	2	8	9	8	5	6	2	4	3
Triumph 64	1.1	1	3	7	6	8	2	8	8	8	5	6	1	5	4
Turkey	---	8	6	9	1	7	8	8	8	9	7	7	2	3	2
Vona	5.7	2	5	3	6	4	-	5	3	5	8	9	2	2	2
Wings	2.2	3	4	3	6	-	-	4	3	5	6	9	2	2	1

^{1/} Rated on a scale of 0 to 9; except for maturity (where 0 is earliest and 9 latest), 0 is best and 9 poorest. Zero means excellent or exceptional; 1 to 3, good or resistant; 4 to 6, average or moderately resistant; and 7 to 9, poor or susceptible. Ratings given are current averages for the state as a whole. They are subject to modification when applied to individual locations and may be modified by future research data. A dash indicates insufficient evidence for classification. Varieties are included that occupied at least 1/2 of 1% of the Kansas acreage this year, are recently released public varieties, or are varieties used as standards for comparison.

^{2/} Includes most varieties grown on at least 0.3% of 1984 acreage, based on Kansas Crop and Livestock Reporting Service survey results released 2/16/84.

^{3/} A zero rating means exceptionally long mixing time. Varieties with a zero rating are particularly good for blending with mellow or weak wheats. Used alone, varieties like Buckskin, Rocky, Centurk 78, and Eagle may have mixing and other physical dough properties that are too strong for satisfactory machinability in pan bread production. Mixing time will vary with the environmental condition under which the varieties are grown.

Table 3.--Private entrants and their entries in 1984 wheat performance tests.

Entrant	Brand	Variety or Hybrid
North American Plant Breeders P.O. Box 30 Berthoud, Colorado 80513	Agripro	Mustang
	Agripro	Hawk
	Agripro	Rocky
	Agripro	Wings
	Agripro	Archer
	Agripro	Wrangler
	Agripro	Ram
Cargill, Inc. 2540 East Drake Rd. Ft. Collins, Colorado 80525	Bounty Hybrid	100
	Bounty Hybrid	201
	Bounty Hybrid	202
	Bounty Hybrid	203
	Bounty Hybrid	301
	Bounty Hybrid	310
Garst Seed Co. Eminence Rte. Garden City, Kansas 67846	Garst	HR53
	Garst	HR64
	Garst	428402 Exp
	Garst	3580 Exp
Rohm and Haas Co. 6025 W. 300 S Lafayette, Indiana 47905	Hybrex Hybrid	HW 1010
	Hybrex Hybrid	HW 1019
	Hybrex Hybrid	HW 1030
	Hybrix Hybrid	HW 1035
Northrup, King Company P.O. Box 370 Richardson, Texas 75080	PRO Brand	830
HybriTech Seed Intl., Inc. 1831 Woodrow Wichita, Kansas 67203	Quantum Hybrid	555
	Quantum Hybrid	568
	Quantum Hybrid	XH150A
	Quantum Hybrid	XH165
	Quantum Hybrid	XH195
	Quantum Hybrid	XH196
	Quantum Hybrid	XH218
Quantum Hybrid	XNH1248	
Seed Research, Inc. RFD 2, Box 48 Scott City, Kansas 67871	SR	5221
John W. Polansky R.R. 2 Belleville, Kansas 66935	Super	T
	Super	B Exp
	Super	X Exp

Table 4.--Test site description and management in 1984.

Location and Cooperators	Date planted	Date harvested	Soil type	Previous harvested crop	Fertilizers applied, lbs/acre*			Seeding rate (lbs or seeds/a)
					N	P ₂ O ₅	K ₂ O	
Manhattan Rollin Sears	10-1	7-5	Silt loam	Oats, 1983	F 90 S 0	35 0	0 0	70 lbs/a
Ottawa Keith Janssen	10-10	7-3	Woodson silt loam	Soybeans, 1983	F 6 S 60	26 0	13 0	1,000,000 seeds/a
Parsons Kenneth Kelley George Granade	11-2	6-28	Parsons silt loam	-----	F 75 S 0	65 0	65 0	1,080,000 seeds/a
Ft. Hays T. Joe Martin	10-11	7-3	Harney silt loam	Wheat, 1982	F 30 S 0	0 0	0 0	45 lbs/a
Belleville Robert Raney	10-3	7-5	Crete silt loam	Sorghum, 1982	F 70 S 0	46 0	0 0	80 lbs/a
Hesston Mark Claassen	10-17	6-27	Ladysmith silty clay loam	Soybeans, 1982	F 18 S 50	46 0	0 0	990,000 seeds/a
∞ Hutchinson George Mueller-Warrant	10-18	7-3	Clark-Ost silt loam	Oats, 1983	F 75 S 25	37 0	0 0	784,080 seeds/a
St. John (fallow) James Long George TenEyck	9-22	6-27	Pratt loamy find sand	Sorghum, 1982	F 46 S 40	20 0	6 0	850,000 seeds/a
St. John (irrig) James Long George TenEyck	9-23	6-28	Pratt loamy fine sand	Oats, 1983	F 46 S 80(split)	20 0	6 0	1,000,000 seeds/a
Colby (fallow) John Lawless	10-10	7-11	Keith silt loam	Wheat, 1982	F 45 S 0	0 0	0 0	650,000 seeds/a
Colby (irrig) John Lawless	9-21	7-10	Keith silt loam	Wheat, 1983	F 100 S 0	45 0	0 0	1,200,000 seeds/a
Tribune (irrig) Mike Bourne Roy Gwin	9-23	7-6	Ulysses silt loam	-----	F 18 S 80	46 0	0 0	85 lbs/a
Garden City (fallow) Merle Witt	9-21	7-2	Keith silt loam	Wheat, 1982	F 80 S 0	0 0	0 0	600,000 seeds/a
Garden City (irrig) Merle Witt	9-22	7-9	Keith silt loam	Wheat, 1983	F 60 S 60	0 0	0 0	1,120,000 seeds/a

*F = fall application; S = spring.

Table 5.--Yields (bushels per acre) from 1984 Kansas wheat variety tests.

Brand	Variety or Hybrid	NE	EC	SE	NC		South Central			NW	NC	Southwest		14-Sta. avg.		
		Man-hat-tan	Ott-awa	Par-sons	Ft. Hays	Belle-ville	Hes-ston	Hutch-son	Dry-land	Irri-gated	Colby	Tri-bune Irr.	Dry-land		Irri-gated	
AGRIPRO	MUSTANG	74	49	57	50*	48	47	47	65	82	53	66	54	59	84*	59.6
AGRIPRO	HAWK	65	48	54	41	44	48*	47	64	89	47	59	51	59	77	56.6
AGRIPRO	ROCKY	---	---	---	---	62*	---	---	---	---	50	---	---	60	---	---
AGRIPRO	WINGS	72	52	60	---	---	---	---	---	---	---	---	---	---	---	---
AGRIPRO	ARCHER	62	---	---	---	48	---	---	---	---	61	---	---	---	---	---
AGRIPRO	WRANGLER	---	49	64	48*	---	---	41	57	81	---	66	---	79	---	---
AGRIPRO	RAM	---	---	---	44*	---	---	---	58	---	51	60	62	58	69	---
---	ARKAN	72	48	67*	45*	67*	47	48	52	92	49	61	59	66*	76	60.6
BOUNTY	100	75	53	68*	46*	43	34	51	74*	99	49	79*	63	60	88*	63.0
BOUNTY	201	85	57*	66*	48*	70*	52*	53	81*	99	51	74	68	65	81*	67.9
BOUNTY	202	73	59*	67*	38	53	48*	54	84*	101*	57*	75*	68	61	81*	65.6
BOUNTY	203	96*	54	71*	51*	72*	51*	60*	79*	106*	58*	77*	64	69*	90*	71.3
BOUNTY	301	74	58*	64	45*	59	44	54	74*	94	61*	70	66	62	82*	64.4
BOUNTY	310	85	54	64	49*	63*	46	54	77*	104*	48	82*	56	64	73	65.6
---	BRULE	---	---	---	---	71*	---	---	59	91	49	---	---	60	---	---
---	CENTURA	67	50	58	38	56	39	47	72	---	49	---	---	64	---	---
---	CENTURK 78	70	39	49	---	54	37	47	63	---	48	---	---	64	---	---
---	CHISHOLM	---	---	61	---	---	37	44	67	94	---	---	---	67*	85*	---
---	COLT	70	---	---	44*	54	---	---	60	82	50	67	66	---	---	---
---	EAGLE	---	---	---	39	53	33	43	60	---	47	---	---	62	---	---
GARST	HR53	64	48	54	41	50	49*	45	64	86	44	63	68	57	68	57.2
GARST	HR64	59	54	56	44	51	48*	46	68	85	45	67	70	61	79	59.5
GARST	428402 EXP	63	49	63	39	57	47	44	69	88	48	58	64	58	80	59.1
GARST	3580 EXP	---	---	---	---	---	---	---	---	89	---	61	63	---	72	---
HYBEX	HW 1010	71	48	60	44*	49	43	47	74*	92	53	67	65	63	78	61.0
HYBEX	HW 1019	71	44	51	38	59	46	47	65	88	54	66	65	59	72	58.9
HYBEX	HW 1030	70	52	54	41	54	40	48	64	89	51	63	64	66*	81*	59.8
HYBEX	HW 1035	---	---	---	47*	---	---	---	---	---	55	63	59	64	78	---
---	LARNED	64	40	47	37	58	33	46	60	---	49	---	---	63	---	---
---	NEWTON	54	41	56	41	48	44	47	61	86	49	68	68	64	78	57.5
---	SIouxLAND	---	---	---	42	64*	---	---	---	---	48	61	68	---	---	---
---	PARKER 76	69	47	57	---	---	---	---	---	---	---	---	---	---	---	---
---	PAYNE	---	---	62	---	---	---	---	---	---	---	---	---	---	---	---
PRO BRAND	830	74	51	57	36	---	37	51	59	---	49	69	---	60	---	---
QUANTUM	555	---	---	---	42	---	---	---	---	---	45	65	---	---	---	---
QUANTUM	568	---	---	---	41	---	---	---	---	---	54	---	---	63	---	---
QUANTUM	XH150A	69	53	65	---	---	43	54	---	---	---	---	---	---	---	---
QUANTUM	XH165	---	---	---	---	---	---	---	---	---	---	67	63	64	70	---
QUANTUM	XH195	---	---	---	---	---	---	---	66	---	---	---	---	---	---	---
QUANTUM	XH196	---	---	---	---	---	---	---	---	89	---	---	---	---	---	---
QUANTUM	XH218	---	---	---	---	62*	---	---	---	---	---	---	---	---	---	---
QUANTUM	XNH1248	74	---	---	---	---	---	---	---	---	---	---	---	---	---	---
---	SANDY	---	---	---	---	---	---	---	63	---	50	---	---	---	---	---
---	SCOUT 66	54	33	49	37	53	29	48	60	---	54	---	---	59	---	---
SR	5221	---	44	---	35	47	28	41	66	81	41	61	---	59	63	---
SUPER	T	---	---	---	---	54	---	---	---	---	---	---	---	---	---	---
SUPER	B EXP	---	---	---	---	55	---	---	---	---	---	---	---	---	---	---
SUPER	X EXP	---	---	---	---	60	---	---	---	---	---	---	---	---	---	---
---	TAM 105	71	57*	63	52*	57	40	44	66	93	55	63	63	58	83*	61.8
---	TRIUMPH 64	---	39	45	---	---	---	42	---	---	---	---	---	---	---	---
---	TAM 107	83	61*	70*	48*	62*	43	48	75*	102*	49	72	72	70*	84*	67.1
---	TAM 108	71	52	54	48*	52	49*	56	69	90	52	64	62	73*	76	62.0
---	VONA	64	49	51	38	44	33	43	69	94	45	63	61	62	78	56.7
---	HART (soft)	73	52	67*	---	---	---	---	---	---	---	---	---	---	---	---
---	PIKE (soft)	74	59*	67*	---	---	---	---	---	---	---	---	---	---	---	---
---	CENTURK 78 HP ^{2/}	67	40	52	---	54	39	47	61	---	48	---	---	64	---	---
---	NEWTON HP ^{2/}	66	43	58	40	50	42	46	54	84	47	66	---	56	77	---
TEST AVERAGES, bu.		70	49	59	43	56	42	48	66	91	50	66	64	62	78	61.8
L.S.D. (.05), bu. ^{1/}		9.5	5.6	6.0	8.5	10.0	4.7	4.0	9.6	6.1	4.9	8.1	NS	7.3	9.8	---
C.V. %		9.6	8.1	7.2	14.1	11.1	7.9	6.0	10.4	4.8	7.1	8.6	13.7	7.3	9.0	---
Date planted		10-1	10-10	11-2	10-11	10-3	10-17	10-18	9-22	9-23	10-10	9-21	9-23	9-21	9-22	---
Date harvested		7-5	7-3	6-28	7-3	7-5	6-27	7-3	6-27	6-28	7-11	7-10	7-6	7-2	7-9	---

*Upper LSD group. Differences among those values marked with an asterisk at any one location are not statistically significant.

^{1/} Unless two varieties differ in yield by more than the L.S.D. (least significant difference), little confidence can be placed in one being superior to the other.

^{2/} Seed lots with relatively high protein content (HP) were used for these plantings.

Table 6.--Yields (as percent of test average) from 1984 Kansas wheat variety tests.

Brand	Variety or Hybrid	NE	EC	SE	NC		South Central			NW	WC	Southwest		14-Station avg.		
		Man-hatan	Ottawa	Parsons	Ft. Hays	Belle ville	Hutchinson	Dryland	John Irri-gated	Colby	Tri-bune Irr.	Dryland	Irri-gated			
AGRI PRO	MUSTANG	106	99	96	117*	86	112	98	98	90	106	100	84	95	108*	99.6
AGRI PRO	HAWK	92	98	92	96	80	113*	98	98	98	94	90	80	95	99	94.5
AGRI PRO	ROCKY	---	---	---	---	111*	---	---	---	---	100	---	---	96	---	---
AGRI PRO	WINGS	102	106	101	---	---	---	---	---	---	---	---	---	---	---	---
AGRI PRO	ARCHER	87	---	---	---	86	---	---	---	---	91	---	---	---	---	---
AGRI PRO	WRANGLER	---	99	108	111*	---	120*	86	86	89	---	---	104	---	101	---
AGRI PRO	RAM	---	---	---	103*	---	---	---	89	---	102	90	97	93	88	---
---	ARKAN	102	97	113*	106*	121*	112	100	78	101	97	92	93	106*	97	101.1
BOUNTY	100	107	108	115*	107*	77	82	107	111*	108	98	119*	98	97	114*	103.4
BOUNTY	201	120	116*	111*	112*	125*	124*	111	123*	109	101	111	107	105	104*	112.8
BOUNTY	202	104	119*	113*	88	96	115*	114	127*	111*	114*	113*	108	98	104*	108.9
BOUNTY	203	137*	110	121*	120*	129*	120*	125*	119*	116*	116*	116*	100	111*	116*	118.3
BOUNTY	301	105	117*	108	104*	106	104	113	112*	103	121*	106	104	100	105*	107.1
BOUNTY	310	121	110	108	114*	114*	109	113	116*	114*	97	124*	89	103	93	108.9
---	ERULE	---	---	---	---	127*	---	---	89	100	97	---	---	97	---	---
---	CENTURA	95	101	98	90	100	92	98	108	---	98	---	---	103	---	---
---	CENTURK 78	99	79	84	---	97	89	98	96	---	95	---	---	103	---	---
---	CHISHOLM	---	---	103	---	---	88	92	101	103	---	---	---	107*	110*	---
---	COLT	100	---	---	104*	98	---	---	90	90	101	101	104	---	---	---
---	EAGLE	---	---	---	90	95	78	90	91	---	94	---	---	100	---	---
GARST	HR53	91	97	91	95	90	116*	94	97	95	88	94	107	92	87	95.3
GARST	HR64	83	110	94	102	92	114*	97	102	93	90	102	110	98	101	99.1
GARST	428402 EXP	90	100	106	92	102	111	91	105	97	95	88	101	93	103	98.1
GARST	3580 EXP	---	---	---	---	---	---	---	---	98	---	92	99	---	92	---
HYBEX	HW 1010	100	98	102	104*	88	102	97	112*	101	107	101	102	101	101	101.1
HYBEX	HW 1019	101	88	87	88	107	110	97	99	97	107	99	103	95	93	97.9
HYBEX	HW 1030	100	106	91	95	97	95	100	97	98	101	94	101	106*	104*	98.9
HYBEX	HW 1035	---	---	---	110*	---	---	---	---	---	110	95	93	103	100	---
---	LARNED	91	81	80	86	105	78	96	91	---	98	---	---	102	---	---
---	NEWTON	77	83	95	95	86	105	99	93	94	98	102	107	103	100	95.5
---	SIouxLAND	---	---	---	98	114*	---	---	---	---	96	93	106	---	---	---
---	PARKER 76	98	95	97	---	---	---	---	---	---	---	---	---	---	---	---
---	PAYNE	---	---	104	---	---	---	---	---	---	---	---	---	---	---	---
PRO BRAND	830	105	104	96	83	---	87	106	89	---	97	104	---	96	---	---
QUANTUM	555	---	---	---	98	---	---	---	---	---	89	98	---	---	---	---
QUANTUM	568	---	---	---	96	---	---	---	---	---	109	---	---	102	---	---
QUANTUM	XH150A	98	108	110	---	---	102	112	---	---	---	---	---	---	---	---
QUANTUM	XH165	---	---	---	---	---	---	---	---	---	---	100	98	103	90	---
QUANTUM	XH195	---	---	---	---	---	---	---	99	---	---	---	---	---	---	---
QUANTUM	XH196	---	---	---	---	---	---	---	---	98	---	---	---	---	---	---
QUANTUM	XH218	---	---	---	---	112*	---	---	---	---	---	---	---	---	---	---
QUANTUM	XNH1248	105	---	---	---	---	---	---	---	---	---	---	---	---	---	---
---	SANDY	---	---	---	---	---	---	---	96	---	100	---	---	---	---	---
---	SCOUT 66	77	67	83	87	96	69	101	90	---	107	---	---	95	---	---
SR	5221	---	89	---	81	84	68	85	100	88	83	92	---	95	81	---
SUPER	T	---	---	---	---	98	---	---	---	---	---	---	---	---	---	---
SUPER	B EXP	---	---	---	---	100	---	---	---	---	---	---	---	---	---	---
SUPER	X EXP	---	---	---	---	107	---	---	---	---	---	---	---	---	---	---
---	TAM 105	101	115*	106	122*	102	95	93	100	102	109	95	99	94	107*	102.9
---	TRIUMPH 64	---	79	77	---	---	---	87	---	---	---	---	---	---	---	---
---	TAM 107	117	123*	118*	111*	112*	101	101	114*	112*	99	108	114	112*	108*	110.7
---	TAM 108	100	105	92	112*	94	117*	116	105	99	105	96	97	117*	98	103.8
---	VONA	91	99	87	90	79	78	91	104	103	91	95	95	100	100	93.1
---	HART (soft)	104	105	113*	---	---	---	---	---	---	---	---	---	---	---	---
---	PIKE (soft)	104	120*	114*	---	---	---	---	---	---	---	---	---	---	---	---
---	CENTURK 78 HP	96	81	88	---	97	93	97	93	---	97	---	---	103	---	---
---	NEWTON HP	93	86	98	94	90	100	97	82	92	94	100	---	91	99	---
TEST AVERAGES, %		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100.0
L.S.D. (.05), % 1/		13.4	11.3	10.1	19.8	18.1	11.1	8.4	14.5	6.7	9.9	12.2	NS	11.8	12.6	

*Upper LSD group. Differences among those values marked with an asterisk at any one location are not statistically significant.
 1/ Unless two varieties differ in yield by more than the L.S.D. (least significant difference), little confidence can be placed in one being superior to the other.

Table 7. Period-of-years yield averages (bushels per acre) from Kansas wheat variety tests.

Brand	Variety or Hybrid	Northeast						East-Central			Southeast			North-Central		
		Powhattan 1/			Manhattan 2/			Ottawa 2/			Parsons			Ft. Hays		
		2-yrs 82-83	3-yrs 81-83	4-yrs 80-83	2-yrs 83-84	3-yrs 82-84	4-yrs 80-84	2-yrs 83-84	3-yrs 82-84	4-yrs 80-84	2-yrs 83-84	3-yrs 82-84	4-yrs 81-84	2-yrs 83-84	3-yrs 82-84	4-yrs 81-84
AGRIPRO	MUSTANG	--	--	--	60	--	--	53	--	--	39	--	--	57*	--	--
AGRIPRO	HAWK	40	45	--	67	69*	--	54	41	--	36	38	42	51	54	52
AGRIPRO	ROCKY	48	51	56	--	--	--	--	--	--	--	--	--	--	--	--
AGRIPRO	WINGS	58*	60*	62*	73	67*	--	55	49	--	45	46	48	--	--	--
AGRIPRO	ARCHER (Migro)	41	46	--	59	58	--	--	--	--	--	--	--	--	--	--
AGRIPRO	WRANGLER	--	--	--	--	--	--	51	--	--	54	--	--	--	--	--
---	ARKAN	56*	52	--	69	66*	--	56	48	--	59*	54	53	54	59*	53
BOUNTY	100	--	--	--	71	--	--	62*	--	--	53	--	--	58*	61*	--
BOUNTY	203	--	--	--	--	--	--	--	--	--	--	--	--	61*	--	--
BOUNTY	310	--	--	--	82*	--	--	60*	--	--	65*	--	--	58*	--	--
---	CENTURK 78	44	50	55	67	65*	62*	46	38	45	40	43	46	--	--	--
---	EAGLE	--	--	--	--	--	--	--	--	--	--	--	--	48	50	49
GARST	HR53	--	--	--	58	--	--	50	--	--	41	--	--	49	--	--
GARST	HR64	--	--	--	58	--	--	56	--	--	45	--	--	53	--	--
HYBEX	HW 1010	--	--	--	69	--	--	51	--	--	46	--	--	56	58*	--
---	LARNED	49	52	55	64	59	57*	45	39	45	37	40	44	47	50	49
---	NEWTON	43	47	53	58	61*	60*	45	40	50	43	41	45	50	53	53
---	PARKER 76	45	50	53	67	61*	59*	49	42	49	42	43	44	--	--	--
---	PAYNE	--	--	--	--	--	--	--	--	--	63*	57*	52	--	--	--
PRO BRAND	830	--	--	--	71	68*	--	--	--	--	58	55	--	49	54	--
QUANTUM	568	--	--	--	--	--	--	--	--	--	--	--	--	52	--	--
---	SCOUT 66	42	47	51	54	50	49	41	33	38	39	41	44	46	48	47
---	TAM 105	51	55	59	72	64*	59*	61*	55*	60*	47	49	50	59*	59*	58*
---	TRIUMPH 64	47	48	50	--	--	--	43	36	45	36	38	40	--	--	--
---	VONA	52	49	53	65	58	59*	54	46	57	41	40	43	52	55	53
---	HART (soft)	53	49	53	64	66*	64*	54	51	59*	60*	55	55	--	--	--
---	PIKE (soft)	57*	53	--	72	64*	--	59*	51	--	65*	60*	59*	--	--	--
TEST AVERAGES, bu.		48	49	53	68	63	61	53	44	51	50	48	49	52	55	52
L.S.D. (.05), bu.		2.6	2.8	2.6	8.7	8.1	7.6	3.6	3.5	2.9	6.4	4.6	3.6	5.0	3.8	3.2

*Highest yield group. Differences in yield between lowest- and highest-yielding varieties (among those marked with an asterisk at any one location) are not statistically significant.

1/ 1984 Powhattan test destroyed by hail June 28.

2/ No 1981 date at Manhattan or Ottawa because of severe early spring drouth and extended wet weather, respectively.

Table 7. Period-of-years yield averages (bushels per acre) from Kansas wheat variety tests (continued).

Brand	Variety or Hybrid	North-Central			South-Central						St. John			Northwest			
		Belleville			Hesston			Hutchinson			Irrigated	St. John Dryland			Colby Dryland		
		2-yrs 83-84	3-yrs 82-84	4-yrs 81-84	2-yrs 83-84	3-yrs 82-84	4-yrs 81-84	2-yrs 83-84	3-yrs 82-84	4-yrs 81-84	2-yrs 83-84	2-yrs 83-84	3-yrs 82-84	4-yrs 81-84	2-yrs 83-84	3-yrs 82-84	4-yrs 80-84 ^{3/}
AGRIPRO	MUSTANG	60	--	--	51	--	--	57	--	--	83	69	--	--	57*	--	---
AGRIPRO	HAWK	55	52	53	48	39	40	53	57	57*	91	73	71*	67*	56	55*	---
AGRIPRO	ROCKY	56	50	51	--	--	--	--	--	--	--	--	--	--	56	54*	57*
AGRIPRO	ARCHER (Migro)	54	55	55	--	--	--	--	--	--	--	--	--	--	--	--	---
AGRIPRO	WRANGLER	--	--	--	--	--	--	52	--	--	--	--	--	--	--	--	---
AGRIPRO	RAM	--	--	--	--	--	--	--	--	--	--	--	--	--	59*	--	---
---	ARKAN	71*	67*	62*	55*	46*	45*	53	56	56*	88	62	54	52	56	53*	---
BOUNTY	100	56	60	--	48	39	--	62*	58	--	100*	76	--	--	57*	--	---
BOUNTY	201	--	--	--	--	--	--	61	--	--	--	--	--	--	--	--	---
BOUNTY	202	--	--	--	56*	--	--	64*	--	--	101*	--	--	--	--	--	---
BOUNTY	310	66*	--	--	54*	--	--	64*	--	--	104*	83*	--	--	52	--	---
---	BRULE	--	--	--	--	--	--	--	--	--	94	66	64	--	58*	55*	---
---	CENTURK 78	53	48	50	45	40	40	49	54	55	--	69	68*	64*	54	52	56*
---	EAGLE	52	49	49	40	34	34	46	49	49	--	64	57	52	52	51	53
GARST	HR53	54	--	--	50	--	--	54	--	--	88	69	--	--	52	--	---
GARST	HR64	60	--	--	50	--	--	55	--	--	88	69	--	--	53	--	---
HYBEX	HW 1010	61	62*	--	52	43	--	57	59	--	94	76	64	--	56	53*	---
---	LARNED	56	51	52	42	37	37	51	53	53	--	68	62	56	55	53*	56*
---	NEWTON	58	57	59*	47	39	39	52	54	54	86	67	54	52	55	52	57*
PRO BRAND	830	--	--	--	--	--	--	63*	63*	--	--	--	--	--	57*	54*	---
QUANTUM	568	--	--	--	--	--	--	--	--	--	--	--	--	--	56	--	---
---	SANDY	--	--	--	--	--	--	--	--	--	--	71	68*	--	55	55*	---
---	SCOUT 66	51	46	47	36	33	33	47	52	51	--	62	57	53	56	53*	55*
---	TAM 105	63	62*	59*	50	43	43*	57	60	59*	93	74	63	58	51	53*	57*
---	TRIUMPH 64	--	--	--	--	--	--	47	49	49	--	--	--	--	--	--	---
---	VONA	55	59	59*	45	37	38	57	60	59*	93	75	68*	62	54	52	57*
TEST AVERAGES, bu.		59	57	55	48	41	40	56	56	55	89	70	62	57	55	53	56
L.S.D. (.05), bu.		6.9	5.1	4.3	3.5	3.0	2.6	2.8	2.8	3.0	4.6	6.2	5.9	4.9	2.9	2.3	2.1

*Highest yield group. Differences in yield between lowest- and highest-yielding varieties (among those marked with an asterisk at any one location) are not statistically significant.

^{3/} 1981 Colby dryland data not used in averages because of irregular frost damage to heads.

Table 7. Period-of-years yield averages (bushels per acre) from Kansas wheat variety tests (continued).

Brand	Variety or Hybrid	Northwest			West-Central						Southwest						
		Colby			Tribune						Garden City						
		Irrigated			Dryland ^{4/}			Irrigated			Dryland ^{5/}			Irrigated			
		2-yrs 83-84	3-yrs 82-84	4-yrs 81-84	2-yrs 82-83	3-yrs 81-83	4-yrs 79-83	2-yrs 83-84	3-yrs 82-84	4-yrs 81-84	2-yrs 83-84	3-yrs 82-84	4-yrs 80-84	2-yrs 83-84	3-yrs 82-84	4-yrs 81-84	
AGRI PRO	MUSTANG	66	--	--	--	--	--	58*	--	--	--	--	--	--	63	--	--
AGRI PRO	HAWK	60	54	51	56*	47*	--	57	59	59*	50	42*	--	65	67	64	
AGRI PRO	ROCKY	--	--	--	--	--	--	--	--	--	47	--	--	--	--	--	
AGRI PRO	ARCHER (Migro)	61	56	53*	--	--	--	--	--	--	--	--	--	--	--	--	
AGRI PRO	RAM	--	--	--	--	--	--	--	--	--	44	--	--	--	--	--	
---	ARKAN	65	63	--	46	--	--	55	58	--	53*	39	--	62	63	--	
BOUNTY	100	74*	71*	--	--	--	--	64*	65*	--	57*	--	--	72*	75*	--	
BOUNTY	201	74*	--	--	--	--	--	--	--	--	--	--	--	64	--	--	
BOUNTY	203	--	--	--	--	--	--	61*	--	--	--	--	--	68*	--	--	
BOUNTY	310	66	--	--	--	--	--	61*	--	--	57*	--	--	70*	--	--	
---	ERULE	--	--	--	48	--	--	--	--	--	47	--	--	--	--	--	
---	CENTURK 78	--	--	--	52	46	45*	--	--	--	48	39	40*	--	--	--	
---	EAGLE	--	--	--	48	38	38	--	--	--	48	40*	40*	--	--	--	
GARST	HR53	63	--	--	--	--	--	61*	--	--	50	--	--	64	--	--	
GARST	HR64	67	--	--	--	--	--	64*	--	--	54*	--	--	75*	--	--	
HYBREX	HW 1010	63	61	--	55*	--	--	64*	67*	--	55*	44*	--	64	68	--	
---	LARNED	--	--	--	48	41	39	--	--	--	50	40*	41*	--	--	--	
---	NEWTON	63	59	53*	51	40	40	60*	63*	61*	54*	42*	41*	62	68	65*	
PRO BRAND	830	69*	67*	--	--	--	--	--	--	--	48	39	--	--	--	--	
QUANTUM	555	54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
QUANTUM	568	--	--	--	--	--	--	--	--	--	49	--	--	--	--	--	
QUANTUM	XH165	60	--	--	--	--	--	61*	--	--	--	--	--	59	--	--	
---	SANDY	--	--	--	54*	49*	--	--	--	--	--	--	--	--	--	--	
---	SCOUT 66	--	--	--	47	39	38	--	--	--	46	38	38	--	--	--	
SR	5221	56	--	--	--	--	--	--	--	--	--	--	--	49	--	--	
---	TAM 105	56	57	55*	51	43	--	65*	68*	64*	53*	46*	44*	60	66	68*	
---	VONA	63	61	54*	55*	47*	44*	61*	63*	63*	50	41*	42*	61	65	62	
TEST AVERAGES, bu.		61	58	53	51	42	41	60	62	59	50	41	41	62	66	62	
L.S.D. (.05), bu. ^{6/}		5.2	4.3	3.6	3.2	2.6	2.6	7.6	6.3	5.4	6.8	6.2	5.7	7.8	5.0	3.8	

*Highest yield group. Differences in yield between lowest- and highest-yielding varieties (among those marked with an asterisk at any one location) are not statistically significant.

^{4/} 1984 and 1980 Tribune, dryland, tests abandoned because of poor spring stands and hail, respectively.

^{5/} 1981 Garden City dryland data not used in averages because of irregular frost damage to heads.

^{6/} Unless two varieties at the same location differ in yield by more than the L.S.D. (least significant difference), little confidence can be placed in one being superior to the other.

Table 8.--Test weight (pounds per bushel) from 1984 Kansas wheat variety tests.

Brand	Variety or Hybrid	NE	EC	SE	NC		South Central			NW	WC	Southwest		14-Station avg.		
		Man-hattan	Ottawa	Parsons	Ft. Hays	Belle-ville	Heston	Hutch-son	St. John	Irrigated	Dry-land	Irrigated	Tri-bune Irr.		Garden City	Dry-land
AGRIPRO	MUSTANG	58.9	55.0	60.7	59.4	57.6	59.3	60.3	62.8	62.0	58.0	55.5	55.3	58.4	56.3	58.5
AGRIPRO	HAWK	55.3	51.3	56.8	59.8	55.3	58.2	59.6	63.8	62.3	57.1	54.9	56.3	57.6	56.1	57.5
AGRIPRO	ROCKY	---	---	---	---	57.8	---	---	---	---	58.0	---	---	59.3	---	
AGRIPRO	WINGS	59.7	55.5	60.7	---	---	---	---	---	---	---	---	---	---	---	
AGRIPRO	ARCHER	53.6	---	---	---	54.0	---	---	---	---	---	54.5	---	---	---	
AGRIPRO	WRANGLER	---	54.8	61.3	59.6	---	58.8	61.8	61.8	62.3	---	---	56.5	---	56.1	
AGRIPRO	RAM	---	---	---	57.5	---	---	---	60.3	---	55.4	51.9	57.3	56.9	53.0	
---	ARKAN	59.0	54.5	59.5	59.9	58.0	57.5	60.5	61.8	61.0	58.8	55.1	56.8	60.1	57.5	
BOUNTY	100	59.3	54.8	58.5	58.9	54.1	56.3	60.1	61.8	62.0	57.2	56.8	59.0	58.1	56.1	
BOUNTY	201	58.4	50.8	58.2	59.1	55.5	58.5	60.8	63.0	61.8	57.1	55.6	58.5	58.4	57.4	
BOUNTY	202	56.5	48.8	58.0	59.1	55.0	58.2	60.7	62.0	61.5	57.5	57.5	59.8	59.7	55.9	
BOUNTY	203	59.1	53.0	59.0	60.0	54.7	59.5	62.4	61.5	62.3	58.8	57.1	58.5	59.2	54.7	
BOUNTY	301	56.8	54.8	57.8	59.1	54.4	57.3	60.7	60.5	60.0	57.4	56.7	56.0	55.8	56.6	
BOUNTY	310	58.8	51.5	56.8	59.2	55.7	58.8	61.3	61.5	62.5	57.1	57.4	57.3	58.6	55.2	
---	BRULE	---	---	---	---	56.1	---	---	61.5	60.5	55.7	---	---	57.3	---	
---	CENTURA	57.8	54.3	59.0	59.7	58.5	58.8	61.4	62.0	---	57.1	---	---	59.8	---	
---	CENTURK 78	58.0	54.0	58.8	---	57.6	58.8	61.3	63.0	---	57.1	---	---	60.0	---	
---	CHISHOLM	---	---	60.7	---	---	59.0	62.1	63.0	63.0	---	---	---	60.3	57.6	
---	COLT	56.9	---	---	59.8	53.6	---	---	62.5	60.7	58.3	56.6	56.3	---	---	
---	EAGLE	---	---	---	60.5	57.6	58.8	61.5	63.0	---	59.0	---	---	60.0	---	
GARST	HR53	55.4	52.8	56.3	58.2	55.7	58.5	59.6	61.5	61.0	56.4	55.5	58.5	57.3	53.5	
GARST	HR64	53.7	52.8	56.3	59.1	55.6	57.8	59.0	62.0	60.5	56.0	54.8	58.5	59.1	53.8	
GARST	428402 EXP	55.3	52.8	58.0	57.9	55.5	57.3	58.5	61.8	60.0	56.3	54.4	59.0	58.3	54.8	
GARST	3580 EXP	---	---	---	---	---	---	---	---	59.5	---	54.5	58.5	---	52.4	
HYBREX	HW 1010	58.5	54.3	58.8	60.4	56.2	58.5	60.9	62.5	62.0	59.5	57.7	58.0	59.1	56.8	
HYBREX	HW 1019	60.0	54.8	58.2	59.7	58.6	58.8	60.9	63.8	62.8	59.1	57.9	58.8	58.0	57.1	
HYBREX	HW 1030	56.8	54.3	57.8	60.1	56.6	57.5	60.5	62.8	60.7	58.1	55.7	57.8	59.0	56.4	
HYBREX	HW 1035	---	---	---	58.6	---	---	---	---	---	57.8	55.6	56.3	59.0	55.3	
---	LARNED	58.0	53.0	56.8	60.1	57.5	58.5	61.7	63.0	---	59.0	---	---	60.5	---	
---	NEWTON	55.1	53.0	57.8	57.4	56.9	58.8	60.5	63.3	62.5	59.3	58.5	59.5	60.0	56.2	
---	SIOUXLAND	---	---	---	59.1	55.9	---	---	---	---	57.1	55.7	58.8	---	---	
---	PARKER 76	62.1	57.5	62.0	---	---	---	---	---	---	---	---	---	---	---	
---	PAYNE	---	---	58.2	---	---	---	---	---	---	---	---	---	---	---	
PRO BRAND	830	60.7	56.0	58.8	61.0	---	58.2	62.0	62.8	---	59.9	59.4	---	59.5	---	
QUANTUM	555	---	---	---	59.5	---	---	---	---	---	56.3	56.7	---	---	---	
QUANTUM	568	---	---	---	59.5	---	---	---	---	---	57.7	---	---	59.1	---	
QUANTUM	XH150A	58.1	54.3	59.3	---	---	58.0	60.4	---	---	---	---	---	---	---	
QUANTUM	XH165	---	---	---	---	---	---	---	---	---	---	55.5	57.5	59.0	52.6	
QUANTUM	XH195	---	---	---	---	---	---	---	61.8	---	---	---	---	---	---	
QUANTUM	XH196	---	---	---	---	---	---	---	---	61.0	---	---	---	---	---	
QUANTUM	XH218	---	---	---	---	57.2	---	---	---	---	---	---	---	---	---	
QUANTUM	XNH1248	58.0	---	---	---	---	---	---	---	---	---	---	---	---	---	
---	SANDY	---	---	---	---	---	---	---	62.5	---	57.5	---	---	---	---	
---	SCOUT 66	56.8	53.2	57.0	60.9	57.8	57.5	61.5	63.5	---	59.5	---	---	60.4	---	
SR	5221	---	52.0	---	60.2	56.4	57.3	61.0	62.3	61.0	58.4	55.6	---	59.8	54.7	
SUPER	T	---	---	---	---	56.9	---	---	---	---	---	---	---	---	---	
SUPER	B EXP	---	---	---	---	56.6	---	---	---	---	---	---	---	---	---	
SUPER	X EXP	---	---	---	---	54.5	---	---	---	---	---	---	---	---	---	
---	TAM 105	56.1	54.0	58.0	59.1	56.0	57.0	59.5	62.0	61.5	57.7	54.6	57.5	58.0	54.6	
---	TRIUMPH 64	---	56.5	61.8	---	---	---	---	63.4	---	---	---	---	---	---	
---	TAM 107	57.8	54.5	59.0	59.2	56.6	57.0	59.2	63.0	61.5	57.3	56.1	57.0	58.3	56.0	
---	TAM 108	52.7	49.0	54.8	58.6	55.4	57.0	57.7	60.3	59.0	55.7	54.0	58.2	57.9	53.2	
---	VONA	55.1	53.0	57.8	61.0	55.8	57.5	60.4	62.8	61.8	58.1	55.0	58.2	59.4	55.5	
---	HART (soft)	57.3	53.2	58.5	---	---	---	---	---	---	---	---	---	---	---	
---	PIKE (soft)	57.2	52.5	59.3	---	---	---	---	---	---	---	---	---	---	---	
---	* CENTURK 78 HP	58.1	53.2	57.8	---	56.8	57.8	61.5	62.8	---	57.6	---	---	59.4	---	
---	NEWTON HP	56.7	52.5	57.8	57.8	57.0	59.0	61.0	62.5	61.3	58.7	57.3	---	58.6	56.7	
TEST AVERAGES, lbs.		57.4	53.5	58.5	59.4	56.2	58.1	60.7	62.3	61.4	57.7	55.9	57.8	58.9	55.4	
L.S.D. (.05), lbs. 1/		1.7	1.5	1.2	1.6	2.2	1.4	.9	.9	.8	1.1	2.1	2.8	1.9	1.7	

1/ Unless two varieties differ in test weight by more than the L.S.D. (least significant difference), little confidence can be placed in one being superior to the other.

Table 9.--Maturity notes (days earlier or later in heading than a standard variety) from 1984 Kansas wheat variety test.

Brand	Variety or Hybrid	Non-irrigated 1/										Irrigated 2/					
		NE Man-hat-tan	EC Ott-awa	SE Par-sons	NC Ft. Belle-ville		South Central Hes-ston Hutch-in-son St. John Dry.			NW Colby Dry-land	SW Garden Dry.	10-Sta. avg.	SC St. John Irr.	NW Colby Irri-gated	WC Tri-bune Irr.	SW Garden City Irr.	4-Sta. avg.
AGRIPRO	MUSTANG	-1.5	-3.7	-5.0	.0	.3	-10.5	-1.2	.8	-1.7	-.3	-2.3	.3	1.0	.0	1.5	+0.7
AGRIPRO	HAWK	1.2	-.8	-1.5	4.3	1.3	-8.0	.5	1.0	.3	1.3	0.0	1.0	2.2	3.5	3.5	+2.6
AGRIPRO	ROCKY	---	---	---	---	.7	---	---	---	3.5	2.0	---	---	---	---	---	---
AGRIPRO	WINGS	-1.0	-1.7	-3.2	---	---	---	---	---	---	---	---	---	---	---	---	---
AGRIPRO	ARCHER	1.5	---	---	---	1.0	---	---	---	---	---	---	---	2.2	---	---	---
AGRIPRO	WRANGLER	---	-4.3	-6.5	-1.5	---	-12.7	-3.5	.3	---	---	---	.0	---	.5	1.5	---
AGRIPRO	RAM	---	---	---	5.5	---	---	---	3.0	2.2	2.3	---	---	4.3	6.0	5.2	---
---	ARKAN	-1.5	-2.7	-3.2	-.3	1.3	-9.5	-1.0	.3	-1.0	-.7	-1.8	-1.0	1.0	.0	.8	+0.2
BOUNTY	100	-1.5	-2.5	-1.5	2.0	-.3	-4.3	-.3	.8	-1.0	1.0	-0.8	-1.0	.8	-2.5	2.2	-0.1
BOUNTY	201	.8	-1.0	-1.2	3.5	1.0	-7.3	2.0	1.0	1.2	1.3	+0.1	1.2	3.0	.0	3.5	+1.9
BOUNTY	202	.5	-2.5	-1.7	5.0	1.0	-6.5	.0	1.0	.5	1.7	-0.1	.5	2.5	.5	3.5	+1.8
BOUNTY	203	1.2	.5	.5	3.5	1.0	-5.5	.3	.8	1.5	.3	+0.4	.3	2.0	.0	3.0	+1.3
BOUNTY	301	3.2	2.2	2.0	4.0	2.3	-3.2	3.7	2.2	2.7	2.0	+2.1	1.0	4.7	6.0	4.7	+4.1
BOUNTY	310	2.0	.8	1.2	3.7	1.7	-5.0	1.5	1.0	1.2	2.0	+1.0	.5	2.0	-.5	3.2	+1.3
---	BRULE	---	---	---	---	1.7	---	---	2.7	4.0	2.0	---	2.0	---	---	---	---
---	CENTURK	2.0	-.3	-.3	4.5	1.3	-3.0	1.2	1.5	3.5	1.7	+1.2	---	---	---	---	---
---	CENTURK 78	1.2	-.3	.8	---	1.7	-4.7	2.0	2.0	4.0	2.0	---	---	---	---	---	---
---	CHISHOLM	---	---	-5.5	---	---	-5.7	-2.2	.5	---	-1.0	---	-.8	---	---	1.5	---
---	COLT	3.0	---	---	6.3	2.0	---	---	2.2	.8	---	---	.8	2.7	3.5	---	---
---	EAGLE	---	---	---	3.0	.3	-2.2	1.0	.5	1.0	-.3	---	---	---	---	---	---
CARST	HR53	1.7	1.0	.5	4.7	1.7	-6.0	2.2	1.5	.5	1.7	+1.0	2.0	2.2	3.0	4.3	+2.9
CARST	HR64	3.2	1.7	1.2	5.2	2.0	-6.0	2.5	2.0	2.2	1.3	+1.5	2.0	3.5	4.5	4.0	+3.5
CARST	428402 EXP	.5	-1.2	-2.2	3.5	1.7	-8.0	.8	2.5	1.2	1.0	0.0	1.7	2.0	4.0	3.2	+2.7
CARST	3580 EXP	---	---	---	---	---	---	---	---	---	---	---	1.2	2.7	5.5	2.5	+3.0
HYBEX	HW 1010	-2.0	-3.7	-2.2	-.3	-1.3	-9.8	-1.7	.5	-2.2	.3	-2.2	-1.0	-.5	-1.0	1.2	-0.3
HYBEX	HW 1019	.5	.0	.3	2.0	1.3	-7.0	-.3	.3	.3	.3	-0.2	.0	1.5	-1.0	2.5	+0.8
HYBEX	HW 1030	-.3	-1.5	-.5	.8	-1.3	-5.5	-1.0	.8	-2.2	-1.0	-1.2	-.5	.0	-.5	.5	-0.1
HYBEX	HW 1035	---	---	---	1.2	---	---	---	---	-.5	.0	---	---	1.5	-1.5	2.5	---
---	LARNED	.0	-.3	.5	1.7	.3	-3.0	.8	.8	.5	-1.7	0.0	---	---	---	---	---
---	NEWTON	.0	-.8	-.3	1.7	.0	-7.5	-.3	.3	-1.2	.0	-0.8	.0	-.5	-1.0	2.0	+0.1
---	SIOUXLAND	---	---	---	3.7	2.0	---	---	---	1.5	---	---	---	5.5	5.0	---	---
---	PARKER 76	-1.0	-1.2	-1.0	---	---	---	---	---	---	---	---	---	---	---	---	---
---	PAYNE	---	---	.8	---	---	---	---	---	---	---	---	---	---	---	---	---
PRO BRAND	830	1.5	1.2	.8	4.3	---	-3.5	2.5	1.7	1.2	1.0	---	---	2.2	---	---	---
QUANTUM	555	---	---	---	5.5	---	---	---	---	3.7	---	---	---	3.5	---	---	---
QUANTUM	568	---	---	---	5.5	---	---	---	---	1.0	1.0	---	---	---	---	---	---
QUANTUM	XH150A	-1.0	-3.2	-3.2	---	---	-7.7	-1.5	---	---	---	---	---	---	---	---	---
QUANTUM	XH165	---	---	---	---	---	---	---	---	---	-.3	---	---	.5	-1.0	2.5	---
QUANTUM	XH195	---	---	---	---	---	---	---	1.5	---	---	---	---	---	---	---	---
QUANTUM	XH196	---	---	---	---	---	---	---	---	---	---	---	.8	---	---	---	---
QUANTUM	XH218	---	---	---	---	-1.0	---	---	---	---	---	---	---	---	---	---	---
QUANTUM	XNH1248	3.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
---	SANDY	---	---	---	---	---	---	---	3.2	4.7	---	---	---	---	---	---	---
---	SCOUT 66	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.0	---	---	---	---	---
SR	5221	---	-1.0	---	1.5	-1.7	-3.5	-1.0	.5	-.3	-.3	---	-.3	1.5	---	2.5	---
SUPER	T	---	---	---	---	-1.0	---	---	---	---	---	---	---	---	---	---	---
SUPER	B EXP	---	---	---	---	.7	---	---	---	---	---	---	---	---	---	---	---
SUPER	X EXP	---	---	---	---	1.3	---	---	---	---	---	---	---	---	---	---	---
---	TAM 105	-.8	-1.5	-.5	-.8	-2.3	-6.0	.0	.8	-2.2	-1.0	-1.4	.0	.0	.0	.0	0.0
---	TRIUMPH 64	---	-4.5	-6.3	---	---	---	-3.0	---	---	---	---	---	---	---	---	---
---	TAM 107	-2.7	-4.5	-4.7	-2.2	-3.0	-7.7	-3.2	.0	-3.2	-2.0	-3.3	-1.0	-1.0	.0	-.8	-0.7
---	TAM 108	2.2	1.2	.3	3.2	1.3	-6.3	1.5	3.0	2.0	.7	+0.9	2.2	4.5	5.5	4.7	+4.2
---	VONA	-1.7	-2.2	-2.0	2.7	-.3	-4.3	-.5	1.0	-1.0	.7	-0.8	.3	2.5	.0	2.5	+1.3
---	HART	-.3	-.5	-1.0	---	---	---	---	---	---	---	---	---	---	---	---	---
---	PIKE	-.3	-1.2	-.3	---	---	---	---	---	---	---	---	---	---	---	---	---
---	CENTURK 78 HP	1.5	.5	.0	---	.7	-4.3	.8	1.5	4.3	2.0	---	---	---	---	---	---
---	NEWTON HP	.3	-.8	.0	1.5	.7	-7.5	.0	.3	-1.2	1.7	-0.5	-.3	.8	---	1.5	---
TEST AVERAGES, days		.5	-1.1	-1.3	2.6	.5	-6.0	.1	1.2	.8	.6	-0.2	.4	2.0	1.4	2.5	+1.5
L.S.D. (.05), days 3/		.9	.8	.8	1.5	1.4	1.8	.9	1.0	1.3	1.8	---	.8	.9	2.0	1.3	---

1/ Days earlier (-) or later in heading than Scout 66.

2/ Days earlier (-) or later in heading than TAM 105.

3/ Unless two varieties differ in maturity by more than the L.S.D. (least significant difference), little confidence can be placed in one being superior to the other.

Table 10.--Heights (inches) from 1984 Kansas wheat variety tests.

Brand	Variety or Hybrid	NE	EC	SE	NC		South Central			NW		Southwest		13-Station avg.	
		Manhattan	Ottawa	Parsons	Ft. Hays	Belle-ville	Hesston	Hutchinson	Dry-land	Irrigated	Dry-land	Irrigated	Dry-land		Irrigated
AGRIPRO	MUSTANG	41	38	36	33	35	35	31	35	39	33	37	35	41	36.1
AGRIPRO	HAWK	43	40	39	34	37	36	32	35	42	33	41	36	43	37.8
AGRIPRO	ROCKY	--	--	--	--	44	--	--	--	--	37	--	41	--	--
AGRIPRO	WINGS	42	39	37	--	--	--	--	--	--	--	--	--	--	--
AGRIPRO	ARCHER	39	--	--	--	36	--	--	--	--	--	39	--	--	--
AGRIPRO	WRANGLER	--	38	36	33	--	35	31	35	39	--	--	--	40	--
AGRIPRO	RAM	--	--	--	36	--	--	--	38	--	34	42	37	45	--
--	ARKAN	43	40	38	35	39	40	33	32	42	32	39	37	41	37.8
BOUNTY	100	44	40	39	36	37	35	34	39	43	33	40	38	44	38.6
BOUNTY	201	44	42	40	38	40	40	35	41	43	35	42	40	45	40.4
BOUNTY	202	44	42	40	34	38	37	34	40	44	36	41	37	43	39.2
BOUNTY	203	45	43	41	38	41	39	35	42	46	34	41	40	44	40.7
BOUNTY	301	45	43	42	37	40	39	35	41	45	35	41	39	44	40.5
BOUNTY	310	43	40	39	35	39	39	33	39	44	34	39	38	42	38.8
--	BRULE	--	--	--	--	42	--	--	36	43	35	--	40	--	--
--	CENTURA	47	46	42	38	43	39	37	43	--	35	--	42	--	--
--	CENTURK 78	47	45	41	--	43	41	38	43	--	36	--	41	--	--
--	CHISHOLM	--	--	34	--	--	32	28	36	40	--	--	37	41	--
--	COLT	36	--	--	31	35	--	--	32	36	35	38	--	--	--
--	EAGLE	--	--	--	37	43	38	36	41	--	35	--	40	--	--
GARST	HR53	41	37	36	34	37	36	30	36	40	31	38	35	42	36.4
GARST	HR64	38	37	33	31	35	34	30	34	37	30	38	36	41	34.9
GARST	428402 EXP	40	38	36	33	36	35	30	37	40	30	40	35	43	36.4
GARST	3580 EXP	--	--	--	--	--	--	--	--	39	--	38	--	42	--
HYBEX	HW 1010	42	40	37	33	36	36	32	38	42	33	40	37	41	37.5
HYBEX	HW 1019	47	46	44	39	43	43	37	37	46	36	43	40	44	41.9
HYBEX	HW 1030	45	44	42	34	39	35	34	36	45	33	42	39	43	39.3
HYBEX	HW 1035	--	--	--	38	--	--	--	--	--	34	42	37	46	--
--	LARNED	48	48	43	40	44	41	38	42	--	37	--	41	--	--
--	NEWTON	43	39	39	38	37	38	33	36	42	34	39	36	42	38.2
--	SIouxLAND	--	--	--	40	44	--	--	--	--	35	43	--	--	--
--	PARKER 76	46	46	42	--	--	--	--	--	--	--	--	--	--	--
--	PAYNE	--	--	37	--	--	--	--	--	--	--	--	--	--	--
PRO BRAND	830	42	40	39	35	--	38	33	36	--	34	42	38	--	--
QUANTUM	555	--	--	--	33	--	--	--	--	--	31	39	--	--	--
QUANTUM	568	--	--	--	36	--	--	--	--	--	34	--	38	--	--
QUANTUM	XH150A	42	40	37	--	--	35	32	--	--	--	--	--	--	--
QUANTUM	XH165	--	--	--	--	--	--	--	--	--	--	38	34	40	--
QUANTUM	XH195	--	--	--	--	--	--	--	44	--	--	--	--	--	--
QUANTUM	XH196	--	--	--	--	--	--	--	--	40	--	--	--	--	--
QUANTUM	XH218	--	--	--	--	45	--	--	--	--	--	--	--	--	--
QUANTUM	XNH1248	49	--	--	--	--	--	--	--	--	--	--	--	--	--
--	SANDY	--	--	--	--	--	--	--	42	--	37	--	--	--	--
--	SCOUT 66	49	49	45	41	44	39	41	43	--	38	--	43	--	--
SR	5221	--	36	--	32	35	31	29	36	38	31	40	36	40	--
SUPER	T	--	--	--	--	37	--	--	--	--	--	--	--	--	--
SUPER	B EXP	--	--	--	--	38	--	--	--	--	--	--	--	--	--
SUPER	X EXP	--	--	--	--	41	--	--	--	--	--	--	--	--	--
--	TAM 105	42	39	37	35	37	34	30	37	41	32	40	35	43	37.1
--	TRIUMPH 64	--	48	42	--	--	--	38	--	--	--	--	--	--	--
--	TAM 107	40	38	35	32	36	32	30	36	40	30	40	37	41	35.9
--	TAM 108	42	38	36	35	35	36	31	35	41	31	39	37	41	36.7
--	VONA	41	38	35	31	35	32	29	36	42	31	38	35	42	35.8
--	HART (soft)	43	41	41	--	--	--	--	--	--	--	--	--	--	--
--	PIKE (soft)	44	39	40	--	--	--	--	--	--	--	--	--	--	--
--	CENTURK 78 HP	47	45	41	--	43	41	37	40	--	36	--	43	--	--
--	NEWTON HP	42	39	38	36	37	37	32	32	42	34	41	37	42	37.6
TEST AVERAGES, inches		43	41	39	35	39	37	33	38	41	34	40	38	42	38.0
L.S.D. (.05), in. 1/		1.7	1.9	1.5	2.7	1.9	2.2	1.3	3.4	1.5	1.8	1.9	3.0	2.4	--

1/ Unless two varieties at the same location differ in height by more than the L.S.D. (least significant difference), little confidence can be placed in one being superior to the other.

Table 11.--Lodging percentages from recent Kansas wheat variety tests.

Brand	Variety or Hybrid	Lodging percentages recorded at harvest						1983 6-Sta. avg.	1983 11-Sta. avg.	1982 8-Sta. avg.
		Man-hat-tan	Ott-awa	Par-sons	Belle-ville	Colby Irr.	Garden City Irr.			
AGRIPRO	MUSTANG	0	0	3	0	46	30	13.2	--	--
AGRIPRO	HAWK	8	1	10	5	31	31	14.3	29	30
AGRIPRO	ROCKY	--	--	--	23	--	--	--	--	--
AGRIPRO	WINGS	13	4	13	--	--	--	--	--	33
AGRIPRO	ARCHER	3	--	--	7	40	--	--	--	--
AGRIPRO	WRANGLER	--	0	4	--	--	49	--	--	--
AGRIPRO	RAH	--	--	--	--	39	56	--	--	--
---	ARKAN	5	6	16	3	68	44	24.0	24	26
BOUNTY	100	20	3	0	0	9	6	6.3	21	--
BOUNTY	201	13	0	1	2	41	25	13.7	--	--
BOUNTY	202	28	0	1	3	14	26	12.0	--	--
BOUNTY	203	25	0	3	0	26	49	17.2	--	--
BOUNTY	301	28	0	4	2	35	41	18.3	--	--
BOUNTY	310	5	0	0	0	10	29	7.3	13	--
---	BRULE	--	--	--	0	--	--	--	--	--
---	CENTURA	60	9	81	27	--	--	--	--	--
---	CENTURK 72	70	9	68	10	--	--	--	--	49
---	CHISHOLM	--	--	0	--	--	33	--	--	--
---	COLT	0	--	--	0	19	--	--	--	--
---	EAGLE	--	--	--	27	--	--	--	--	--
GARST	HR53	3	0	0	5	21	15	7.3	18	--
GARST	HR64	0	0	0	0	3	3	1.0	10	--
GARST	428402 EXP	0	0	0	0	26	31	9.5	--	--
GARST	3580 EXP	--	--	--	--	21	39	--	--	--
HYBEX	HW 1010	5	5	0	3	25	30	11.3	26	--
HYBEX	HW 1019	30	1	55	13	86	70	42.5	--	--
HYBEX	HW 1030	38	0	9	3	79	26	25.8	--	--
HYBEX	HW 1035	--	--	--	--	74	30	--	--	--
---	LARNED	80	23	77	20	--	--	--	53	59
---	NEWTON	5	0	4	7	45	38	16.5	32	33
---	SIOUXLAND	--	--	--	8	21	--	--	--	--
---	PARKER 76	33	10	34	--	--	--	--	--	--
---	PAYNE	--	--	10	--	--	--	--	--	--
PRO BRAND	830	8	0	3	--	30	--	--	--	--
QUANTUM	555	--	--	--	--	4	--	--	--	--
QUANTUM	568	--	--	--	--	--	--	--	--	--
QUANTUM	XH150A	0	0	0	--	--	--	--	--	--
QUANTUM	XH165	--	--	--	--	63	30	--	--	--
QUANTUM	XH195	--	--	--	--	--	--	--	--	--
QUANTUM	XH196	--	--	--	--	--	--	--	--	--
QUANTUM	XH218	--	--	--	2	--	--	--	--	--
QUANTUM	XNH1248	30	--	--	--	--	--	--	--	--
---	SANDY	--	--	--	--	--	--	--	--	--
---	SCOUT 66	83	43	95	60	--	--	--	63	72
SR	5221	--	0	--	0	28	36	--	--	--
SUPER	T	--	--	--	0	--	--	--	--	--
SUPER	B EXP	--	--	--	0	--	--	--	--	--
SUPER	X EXP	--	--	--	0	--	--	--	--	--
---	TAM 105	3	0	19	3	39	21	14.2	22	29
---	TRIUMPH 64	--	28	93	--	--	--	--	--	--
---	TAM 107	0	0	3	0	34	34	11.8	--	--
---	TAM 108	8	1	15	13	43	68	24.7	--	--
---	VONA	10	1	8	0	75	21	19.2	32	26
---	HART (soft)	3	0	1	--	--	--	--	--	--
---	PIKE (soft)	3	0	3	--	--	--	--	--	--
---	CENTURK 78 HP	65	10	81	17	--	--	--	--	--
---	NEWTON HP	0	0	0	3	38	48	14.8	--	--
TEST AVERAGES, %		19	4	20	7	36	34	15.5	--	--
L.S.D. (.05), % 1/		25.5	7.9	18.7	13.3	24.5	25.8	--	--	--

1/ Unless two varieties at the same location differ by more than the L.S.D. (least significant difference), little confidence can be placed in one being superior to the other.

Table 12.--Disease and winter survival readings on 1984 Kansas wheat variety test entries.

Brand	Variety or Hybrid	Tan	Speckled		Soilborne		Leaf	Leaf	Winter survival	
		spot 1/ Man- hat- tan	leaf blotch 1/ Parsons Hutch- 5/25 inson	mosaic 1/ Hesston Apr. 13	Pow- hattan	disease rating 2/ Colby dryland	rust 3/ Hutch- inson	Belle- ville	Hess- ton	
AGRI PRO	MUSTANG	7	3.8	7	1.00	1.19	4	35	98	99
AGRI PRO	HAWK	5	3.5	7	1.25	1.00	5	14	96	100
AGRI PRO	ROCKY	-	---	-	---	1.00	4	---	100	---
AGRI PRO	WINGS	6	4.0	-	---	4.44	-	---	---	---
AGRI PRO	ARCHER	8	---	-	---	1.00	-	---	93	---
AGRI PRO	WRANGLER	-	4.8	8	1.25	---	-	35	---	100
AGRI PRO	RAM	-	---	-	---	---	4	---	---	---
---	ARKAN	5	2.3	8	1.00	1.25	3	0	100	100
BOUNTY	100	4	3.8	6	4.75	4.75	4	45	78	97
BOUNTY	201	3	2.0	6	2.25	1.31	2	55	94	100
BOUNTY	202	3	2.5	7	3.00	1.38	2	41	92	99
BOUNTY	203	2	1.3	6	2.25	1.50	2	19	90	100
BOUNTY	301	5	1.3	7	4.75	2.44	1	0	90	100
BOUNTY	310	4	2.0	5	2.50	1.88	1	35	96	99
---	BRULE	-	---	-	---	---	3	---	100	---
---	CENTURA	5	2.3	8	5.75	3.69	4	1	100	98
---	CENTURK 78	6	2.8	8	4.00	4.06	5	3	99	98
---	CHISHOLM	-	3.3	8	5.50	---	-	10	---	90
---	COLT	4	---	-	---	1.88	4	---	100	---
---	EAGLE	-	---	7	6.75	---	9	20	100	99
GARST	HR53	8	3.5	6	1.25	1.00	4	38	100	99
GARST	HR64	6	3.8	6	1.75	1.00	3	36	99	100
GARST	428402 EXP	7	3.8	6	1.50	1.25	4	45	93	100
GARST	3580 EXP	-	---	-	---	---	-	---	---	---
HYBEX	HW 1010	8	4.0	8	4.50	2.56	5	4	86	97
HYBEX	HW 1019	5	3.0	7	1.50	1.00	6	3	99	100
HYBEX	HW 1030	5	3.3	8	5.75	1.31	5	9	98	98
HYBEX	HW 1035	-	---	-	---	---	4	---	---	---
---	LARNED	6	3.0	8	5.25	3.56	5	23	97	99
---	NEWTON	6	3.3	8	1.25	1.25	7	31	97	100
---	SIOUXLAND	-	---	-	---	---	3	---	100	---
---	PARKER 76	5	2.8	-	---	3.75	-	---	---	---
---	PAYNE	-	2.5	-	---	---	-	---	---	---
PRO BRAND	830	2	1.8	6	4.50	1.75	2	6	---	94
QUANTUM	555	-	---	-	---	---	6	---	---	---
QUANTUM	568	-	---	-	---	---	5	---	---	---
QUANTUM	XH150A	3	3.3	7	3.00	1.13	-	16	---	99
QUANTUM	XH165	-	---	-	---	---	-	---	---	---
QUANTUM	XH195	-	---	-	---	---	-	---	---	---
QUANTUM	XH196	-	---	-	---	---	-	---	---	---
QUANTUM	XH218	-	---	-	---	---	-	---	100	---
QUANTUM	XNH1248	3	---	-	---	3.56	-	---	---	---
---	SANDY	-	---	-	---	---	3	---	---	---
---	SCOUT 66	-	3.0	8	6.75	5.81	10	18	100	100
SR	5221	-	---	6	5.50	4.00	4	6	99	81
SUPER	T	-	---	-	---	---	-	---	98	---
SUPER	B EXP	-	---	-	---	---	-	---	100	---
SUPER	X EXP	-	---	-	---	---	-	---	98	---
---	TAM 105	7	2.8	7	5.00	1.81	5	13	99	99
---	TRIUMPH 64	-	4.8	8	---	---	-	24	---	---
---	TAM 107	6	3.3	8	5.50	3.38	4	4	99	100
---	TAM 108	5	3.5	7	1.50	1.44	4	5	98	100
---	VONA	7	3.8	7	6.00	5.69	4	14	83	93
---	HART (soft)	5	3.3	-	---	1.00	-	---	---	---
---	PIKE (soft)	5	2.0	-	---	1.25	-	---	---	---
---	CENTURK 78 HP	5	3.3	8	4.25	1.94	4	4	100	100
---	NEWTON HP	7	3.5	9	1.50	1.00	7	29	90	99
TEST AVERAGES		5	3.1	7	3.50	2.25	4	19	96	98
L.S.D. (.05) ^{4/}		-	---	.9	---	1.71	.9	13.5	10.4	3.8

1/ Rated from 0-9, where 9 = most susceptible.

2/ Leaf disease (probably a Helminthosporium sp.) rating from 1-10, where 10 = most susceptible.

3/ Leaf rust reading based on proportion of leaves covered by rust pustules.

4/ Unless two varieties at the same location differ by more than the L.S.D. (least significant difference), little confidence can be placed in one being superior to the other.



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