WINTER WHEAT

1996 Missouri Crop Performance

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Special Report 497
Missouri Agricultural Experiment Station
College of Agriculture, Food and Natural Resources
University of Missouri-Columbia
July, 1996

Publication and mailing costs paid by the
Missouri Seed Improvement Association

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1996 MISSOURI WINTER WHEAT PERFORMANCE TESTS

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Introduction

Genetic improvement of wheat varieties has contributed about 40 to 50 percent of the total improvement in wheat yields attained over the past 50 years. Both public and private wheat breeding programs are constantly striving towards greater yield potential, improved grain quality and better host plant resistance to disease and insect pests in the new varieties released for commercial production. In fact, over 100 new soft red winter wheat varieties alone have been released to U.S. farmers in the last 10 years. This volume of new varieties creates uncertainty among farmers trying to select the best variety or varieties for their situation. Wheat growers are reluctant to adopt new varieties without adequate information concerning adaptation and performance. The objective of the Missouri Winter Wheat Performance Tests is to provide wheat growers in Missouri with a reliable, unbiased, up-to-date source of information that will permit valid comparisons among improved wheat varieties. This information should help Missouri wheat growers select varieties best suited to their particular area and growing conditions. This report summarizes winter wheat variety trials conducted throughout Missouri during the 1995-96 cropping season.

Variety Testing Procedures

Locations

The soft red winter wheats were planted at seven Missouri locations (Fig. 1); including Portageville and Charleston in the southeastern region, Mt. Vernon and Lamar in the southwestern region and Columbia, Novelty and Trenton in the northern region of the state. Separate studies comparing hard red winter wheat entries were planted at Columbia, Mt. Vernon and Trenton.

Entries and Seed Sources

Names of commercially available entries evaluated in 1996 and their seed sources are listed in Table 1. Sixty three soft red and 7 hard red winter wheats were tested. The soft red winter wheats were comprised of 10 public varieties, 5 public experimental entries and 48 proprietary varieties. The hard red winter wheats were comprised of 4 public and 3 proprietary varieties. Public varieties adapted to Missouri growing conditions or recommended by the state of origin were entered into the 1995-96 variety test under the sponsorship of the Missouri Seed Improvement Association. Numbered entries preceded by a state designation (e.g. MO12258, OH526) are experimental lines not yet available for commercial production and provided by the foundation seed organization or the wheat breeder of the originating state. Seed lots of named public varieties also were acquired from the foundation seed organization of the originating state or from the University of Missouri Foundation Seed Program. Proprietary entries are submitted for testing on a fee basis by their owners or sponsors. Condition of the seed lot (vigor, viability, seed treatment, etc.) used in these tests for each entry is the responsibility of the company or organization sponsoring that entry.

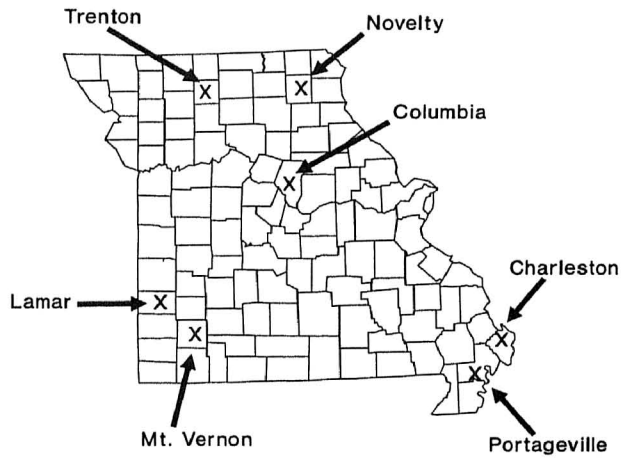

Fig. 1. Test locations for Missouri winter wheat performance tests conducted during 1995.

Experimental Design and Seeding Methods

Each soft red winter wheat experiment was planted using a 8x8 lattice design with four replications. Test plots consisted of a 15 foot, 6-row plot with 7-inch row spacing. All entries were seeded at approximately 1.5 million seeds per acre, roughly equivalent to seeding 1.5 to 2 bushels per acre. Actual seeding rates were calculated from the thousand kernel weights determined for each soft red winter wheat entry (Table 2) and varied from 94 to 169 pounds per acre. Seeding rates were not adjusted for germination. Except for the Trenton location, all entries were seeded 1.25 to 1.5 inches deep into conventional seedbeds using a plot drill equipped with conventional double-disk openers. At the Trenton site, all entries were no-till seeded directly into soybean stubble using a plot drill equipped with Acraplant™ no-till openers.

Hard red winter wheat experiments were conducted in similar fashion except all hard red winter wheat entries were arranged in a randomized complete block design with four replications. Seeding rate of the hard red winter wheats varied from 85 to 115 pounds per acre (Table 2).

Agronomic Practices

Basic agronomic practices are given in Table 3 by location. Planting dates were based on Hessian fly-free dates recommended for each location. Nitrogen was applied in split fall/spring applications. Spring nitrogen applications were generally made at or shortly after initial

Table 1. Names and sources of commercial soft and hard red winter wheat cultivars tested in Missouri during 1995-96.

Brand	Variety Name(s)	Source/Contact
Soft Red Winter Wheats		
	Cardinal†, Ernie†, Freedom†, GA-Dozier†, Hazen†, Howell†, Jackson†, Jaypee†, Madison†, Patterson†, Wakefield†	Missouri Seed Improvement Association, 3211 Lemone Industrial Blvd., Columbia, MO 65201-8245, (314) 449-0586
AG	AG 410	Bio-Plant Research, Inc., P. O. Box 320, Camp Point, IL 62320, (217) 593-7707
AGRIPRO	AGRIPRO Clemens, AGRIPRO Elkhart, AGRIPRO Foster, AGRIPRO Hickory, AGRIPRO Mason,AGRIPRO Pontiac, AGRIPRO Shiloh	Agripro Seeds, Inc., East 8th Street, Box 411, Brookston, IN 47923, (317) 563-3111
Featherstone	Featherstone 520	Featherstone Farm Seed, Inc., 13941 Genito Rd., Amelia, VA 23002, (804) 561-3754
FFR	FFR 522W, FFR 525W, FFR 558W	FFR Cooperative, P. O. Box 322, Battle Ground, IN 47920, (317) 567-2115
HBR	HBR 3020, HBR 4010, HBR 4020	NeCo Seed Farms, Inc., P.O. Box 379, Garden City, MO 64747, (816) 862-8203
Heartland	Heartland E-23	Heartland Agriculture, L.L.C., 838 NE 1000 Road, Calhoun, MO 65323, (800) 748-7929
LG Seeds	LG Seeds JMS 104, LG Seeds JMS 105	LG Seeds, Inc., P. O. Box 950, Decatur, IL 62525 (217) 422-5621
Merschman	Merschman Barbie IV, Merschman Bintee VI Merschman Genie VI, Merschman Julie IV, Merschman Katie VIII, Merschman Millie II	Merschman Seeds, 103 Ave. D, West Point, IA 52656, (319) 837-6111
MFA	MFA Commander II, MFA Enterprise MFA Fury	MFA Incorporated, 615 Locust, Columbia, MO 65201, (314) 876-5285
NeCo	NeCo S88, NeCo S95, NeCo S98	NeCo Seed Farms, Inc., P.O. Box 379, Garden City, MO 64747, (816) 862-8203
Northrup King	Coker 9474, Coker 9543, Coker 9663 Coker 9803	Northrup King Co., 702 Magnolia, Mount Vernon, IL 62864, (618) 224-3454
Pioneer®	Pioneer variety 2540, Pioneer variety 2548, Pioneer variety 2552, Pioneer variety 2568, Pioneer variety 2571	Pioneer Hi-Bred International Inc., P.O. Box 1536, O'Fallon, IL 62269, (618) 624-8222
Stine	Stine 479, Stine 480, Stine 484, Stine 501	Stine Seed Company, P. O. Box 231, Sheridan, IA 46069, (317) 758-0800
Terra	Terra SR204, Terra SR205, Terra EXP 211	Terra International, Inc., P. O. Box 6000, Sioux City, IA 51102-6000, (712) 233-3609
Terral	Terral TV 8555, Terral TV 8825	Terral-Norris Seed Co., P. O. Box 826, Lake Providence, LA 71254 (800) 551-4852
Hard Red Winter Wheats		
	2137†, 2163†, Jagger†, Karl 92†	Missouri Seed Improvement Association, 3211 Lemone Industrial Blvd., Columbia, MO 65201-8245, (314) 449-0586
HBR	HBR 7010	NeCo Seed Farms, Inc., P.O. Box 379, Garden City, MO 64747, (816) 862-8203
Merschman	Merschman Meggie VI	Merschman Seeds, 103 Ave. D, West Point, IA 52656, (319) 837-6111
MFA	MFA EXP 1601	MFA Incorporated, 615 Locust, Columbia, MO 65201, (314) 876-5285

† Signifies public winter wheat cultivars.

Table 2. Seed size of entries, adjusted seeding rates, and seed treatments of seed lots used for establishing soft and hard red winter wheats tested in the Missouri performance trials in the fall of 1995. Use of seed treatment tradenames does not imply endorsement or recommended use of such seed treatments by the Missouri Agricultural Experiment Station or University Extension.

Variety	1,000 Kernel Weight	Seeds per Pound	Adjusted Seeding Rate 1/	Seed Treatment(s)
	- g -	- no/lb -	- lb/acre -	
Soft Red Winter Wheats				
AG 410	36.4	12,473	120	Vitavax 200
AGRIPRO Clemens	32.4	14,012	107	Vitavax 200+Reldan 4E
AGRIPRO Elkhart	37.3	12,172	123	Vitavax 200+Reldan 4E
AGRIPRO Foster	28.6	15,874	94	Unknown
AGRIPRO Hickory	33.8	13,432	112	Vitavax 200+Reldan 4E
AGRIPRO Mason (91D-2308)	38.6	11,762	128	Vitavax 200+Reldan 4E
AGRIPRO Pontiac	29.9	15,184	99	Vitavax 200+Reldan 4E
AGRIPRO Shiloh	34.3	13,236	113	Vitavax 200+Reldan 4E
Cardinal	32.1	14,143	106	RTU-Vitavax-Thiram+Reldan 4E
Coker 9474	37.0	12,270	122	Vitavax 200
Coker 9543	30.7	14,788	101	Vitavax 200
Coker 9663 (L900819)	37.4	12,139	124	Vitavax 200
Coker 9803	36.6	12,404	121	Vitavax 200
Ernie	42.0	10,810	139	RTU-Vitavax-Thiram+Reldan 4E
Featherstone 520	36.4	12,473	120	Unknown
FFR 522W	36.6	12,404	121	Vitavax 200
FFR 525W	41.4	10,966	137	RTU-Vitavax-Thiram+Reldan 4E
FFR 558W	39.2	11,582	130	RTU-Vitavax-Thiram+Reldan 4E
GA-Dozier	34.5	13,159	114	Unknown
Hazen	31.7	14,322	105	Unknown
HBR 3020 (NeCo EX-3020)	32.7	13,884	108	Untreated
HBR 4010 (MPG EX782)	34.7	13,084	115	Untreated
HBR 4020 (NeCo EX-4020)	32.8	13,841	108	Unknown
Heartland E-23	29.1	15,601	96	Unknown
Howell	36.7	12,371	121	RTU-Vitavax-Thiram+Reldan 4E
Jackson	39.5	11,494	131	RTU-Vitavax-Thiram+Reldan 4E
Jaypee (AR26158-4)	30.9	14,693	102	Unknown
LG Seeds JMS 104	32.8	13,841	108	Unknown
LG Seeds JMS 105	32.5	13,969	107	Unknown
Madison	43.5	10,437	144	RTU-Vitavax-Thiram+Reldan 4E
Merschman Barbie IV	32.0	14,188	106	Vitavax 200
Merschman Bintee VI	33.6	13,512	111	Vitavax 200
Merschman Genie VI	35.5	12,789	117	Vitavax 200
Merschman Julie IV	32.9	13,799	109	Vitavax 200
Merschman Katie VIII	33.6	13,512	111	Vitavax 200
Merschman Millie II	38.0	11,947	126	Vitavax 200
MFA Commander II	36.2	12,541	120	Vitavax 200+Reldan 4E
MFA Enterprise	29.8	15,235	98	Vitavax 200+Reldan 4E
MFA Fury (EXP 1540)	33.4	13,593	110	Vitavax 200
MO12258	34.4	13,198	114	RTU-Vitavax-Thiram+Reldan 4E
MO92-599	46.3	9,806	153	RTU-Vitavax-Thiram+Reldan 4E
MO94-082	28.9	15,709	95	Untreated
NeCo S88	32.1	14,143	106	Untreated
NeCo S95	34.8	13,046	115	Untreated
NeCo S98 (MPG EX042)	35.5	12,789	117	Unknown
OH526	36.6	12,404	121	Unknown
Patterson	30.9	14,693	102	RTU-Vitavax-Thiram+Reldan 4E
Pioneer variety 2540	39.3	11,552	130	Vitavax 34+Thiram 42S+Reldan 4E
Pioneer variety 2548	31.1	14,598	103	Vitavax 34+Thiram 42S+Reldan 4E
Pioneer variety 2552	43.7	10,389	144	Vitavax 34+Thiram 42S+Reldan 4E
Pioneer variety 2568	38.0	11,947	126	Vitavax 34+Thiram 42S+Reldan 4E
Pioneer variety 2571	35.1	12,934	116	Vitavax 34+Thiram 42S+Reldan 4E
Stine 479	36.1	12,576	119	Vitavax 200+Reldan 4E
Stine 480	33.7	13,472	111	Vitavax 200+Reldan 4E
Stine 484	36.2	12,541	120	Vitavax 200+Reldan 4E
Stine 501	32.9	13,799	109	Vitavax 200+Reldan 4E
Terra Exp 211	28.6	15,874	94	Unknown
Terra SR204	32.7	13,884	108	Unknown
Terra SR205	38.6	11,762	128	Unknown
Terral TV 8555	37.4	12,139	124	Unknown
Terral TV 8825	30.5	14,885	101	Unknown
VA93-52-60	37.0	12,270	122	Untreated
Wakefield	51.3	8,850	169	RTU-Vitavax-Thiram+Reldan 4E
Hard Red Winter Wheats				
2137 (KS92P0263-137)	34.9	13,009	115	RTU-Vitavax-Thiram+Reldan 4E
2163	26.8	16,940	89	Untreated
HBR 7010	32.4	14,012	107	Unknown
Jagger	25.7	17,665	85	RTU-Vitavax-Thiram+Reldan 4E
Karl 92	29.5	15,390	97	RTU-Vitavax-Thiram+Reldan 4E
Merschman Meggie VI	32.6	13,926	108	Vitavax 200
MFA EXP 1601	31.2	14,551	103	Vitavax 200+Reldan 4E

1/ Adjusted to plant 1.5 million seeds per acre according to the number of seeds per pound for each entry.

Table 3. Summary of agronomic practices used on wheat performance trials in Missouri during 1996. Fall nitrogen (N), phosphorus (P_2O_5) and potassium (K_2O) were preplant applied and incorporated.

Location	Predominant Soil Type(s)	Previous Crop	1995 Planting Date	Fertility Management					1996 Harvest Date
				N					
				Fall	Spring	Total	P_2O_5	K_2O	
				pounds per acre					
Northern									
Columbia	Putnam/Mexico silt loams	soybeans	Oct 11	47	80	127	47	47	Jul 3
Novelty	Putnam silt loam	soybeans	Oct 9	40	80	120	60	40	Jul 9
Trenton 1/	Grundy silt loam	soybeans	Oct 12	36	80	116	-	-	Jul 10
Southwest									
Lamar	Parsons silt loam	soybeans	Oct 17	23	70	93	59	75	Jun 29
Mt. Vernon	Gerald silt loam	soybeans	Oct 17	40	80	120	40	40	Jul 2
Southeast									
Charleston 1/	Sharkey silty clay loam	soybeans	Oct 18	18	96	114	46	60	Jun 24
Portageville	Tiptonville silt loam	soybeans	Oct 19	40	80	120	80	80	Jun 25

1/ Treated with Tilt® fungicide at Feeke's GS 8, the flag leaf growth stage of development.

green up (Feeke's GS 6). Preplant phosphorous and potassium applications were based on soil test recommendations provided by the University of Missouri Soil Testing Laboratory located at Columbia. At Charleston and Trenton, all wheats were treated with 4 oz. of Tilt fungicide (*a.i.* propiconazole) per acre during the flag leaf growth stage of development (Feeke's GS 8) to control foliar diseases.

Description of Data Collected

Yield

All rows of each test plot were trimmed 30 inches and harvested using an experimental-plot combine. Recorded grain yields were adjusted to 13% grain moisture content, and are reported in bushels per acre based on a 60 pound per bushel test weight. In addition to yields obtained in 1996, two (1995-96) and three (1994-96) year averages are provided for soft red wheat entries tested during previous cropping seasons. Yield results from each location and the state-wide averages are summarized in Tables 14 and 19 for soft red winter wheats and hard red winter wheats, respectively.

Test Weight and Grain Moisture Content

Test weight (pounds per bushel) and percent grain moisture content were obtained for each plot using a Dickey-john GAC II grain analyzer.

Plant Height

Plant height was measured in inches from the soil surface to the top of the head, excluding the awns if present. Reported values have been rounded to the nearest inch.

Lodging

Lodging severity was rated at all test locations in 1996. Plots were rated on a severity scale of 0 to 9 where 0 = no lodging and 9 = plants completely flat.

Winter Survival

Percent winter survival was estimated for each plot after initial spring green-up at locations where significant winter injury occurred. Reported values have been rounded to the nearest percent. In 1996, substantial differences in winter survival among varieties were noted at all locations.

Heading Date

Heading was noted at Columbia, Mount Vernon and Portageville when 50% of the heads in a plot had extended above the flag leaf collar. Heading dates were recorded in Julian days (number of days from January 1) for statistical purposes. Corresponding calendar dates also are presented.

Disease Ratings

Field disease notes for scab (*Fusarium spp.*) and septoria leaf blotch (*Septoria tritici* syn. *Mycosphaerella graminicola*) were taken at locations where the incidence was severe enough to discern variety differences and symptoms were not obscured by other diseases. Scab ratings were taken at the Lamar (Table 11) and Mount Vernon sites (Table 12). Scab scores of 0 to 9 were used to estimate zero to complete infection by *Fusarium spp.*, respectively, where incidence is an estimate of the number of heads infected in approximately 10 percent increments and severity estimates the number of diseased spikelets within infected heads also in approximately 10 percent increments. The incidence of septoria leaf blotch was

evaluated at the Columbia location (Table 6) by estimating the percent of total foliage infected during the milk stage (Feeke's GS 11.1) of kernel development.

Statistical Analyses and Interpretation

Data collected on all traits measured from the soft red winter wheats during 1996 are presented in Tables 5 through 14. Tables 15 through 19 cover data summarized for the hard red winter wheat entries. The data collected at each soft red winter wheat test location were analyzed as a four-replication, lattice design. Hard red winter wheat locations were analyzed as four replication randomized complete block designs. If an observation was missing in one replication, the average of those observations in the remaining replications was used to approximate the missing observation. Fisher's protected least significant difference at the 0.05 probability level [LSD (p=0.05)] and coefficients of variation (CV%) were calculated from analyses of variance by each location and across all locations. The LSD is used to compare the performance of two specific varieties at a time. If the mean of a variety exceeds that of another variety by more than the LSD, then the difference observed will be a true difference in 19 out of 20 instances under conditions similar to those of the test.

Variety selection should be based on yield stability in a production environment over years and locations. Selection also should consider other characteristics such as test weight, plant height, heading date and disease resistance. Where these additional characteristics were not measured in a particular production environment, they can be evaluated from locations in which they were rated. Where a variety has been in the test for two or three years, combined analyses of the yield data over years are presented. Tables 14 and 19 rank the soft red and hard red winter wheats, respectively, according to their state-wide average. Overall rank can be very misleading. Differences in yield between any two varieties are considered significant or real only if that difference exceeds the LSD value given at the bottom of each column. Growers should be careful to make pair-wise comparisons of results from both the appropriate location or locations and the state-wide averages before selecting one wheat variety over another for production in Missouri.

1996 Test Conditions

Dry conditions at planting combined with winter freezing and heaving injury were the major constraints to wheat production at most test locations in Missouri during 1996. All locations were planted in a timely fashion, but germination was delayed and wheat stands were slow to establish due to drought conditions that existed in Missouri during the fall of 1995. Fall plant growth and tillering were less than normally observed, particularly at the northern and southwestern test sites. Temperatures remained moderate during the late fall months, permitting some wheat growth almost to January 1 as far north as Trenton and Novelty. Beginning in mid January, severe winterkill and heaving resulted from repeated cycles of below zero temperatures followed by brief periods of above freezing weather. Substantial stand losses occurred. Winter survival averaged 39 percent across all locations, with the three northern sites (Columbia, Novelty and Trenton) suffering the greatest winter injury, thinnest stands, and competition from annual weeds that persisted until these sites were harvested. An extended period of cold temperatures in March and early April delayed jointing and heading by as much as three weeks. Average to above average rainfall prevailed during May at all locations, providing adequate soil moisture during the grain filling period but also creating conditions favorable for the development of scab (*Fusarium spp.*). Yields at Novelty were further reduced by atrazine injury caused by the disposal of atrazine rinsate in the plot area approximately one month prior to planting, resulting in the loss of one replication.

The occurrence of foliar and head diseases was light to modest at most test locations during the 1995-96 growing season. Delayed germination and slow crop growth associated with the dry conditions existing in the fall of 1995 resulted in smaller plants and less foliage, reducing the opportunity for diseases such as powdery mildew (*Blumeria graminis* f. sp. *tritici*), septoria leaf blotch (*Septoria tritici*), septoria glume blotch (*Septoria nodorum*) and/or tan spot (*Pyrenophora tritici-repentis*) to develop. Warmer temperatures and timely rainfall in late April and early May encouraged septoria leaf blotch development at Columbia. All soft red winter wheat entries possessed some level of infection from septoria leaf blotch by the milk stage of kernel development (Feeke's GS 11.1), but leaf blotch development was most rapid on 'GA-Dozier', 'Patterson' and 'VA93-52-60' soft red winter wheats (Table 6). No differences in septoria leaf blotch development were noted among the hard red winter wheats tested at Columbia (Table 16), but these varieties tended to have higher infection levels than most soft red winter wheats. Scab was evident at most locations in 1996, but symptoms for this disease were most severe at Lamar and Mt. Vernon (Tables 11 and 12). Trace levels of Cephalosporium stripe (*Cephalosporium gramineum*) were observed across the experiment at Trenton and not associated with a particular set of entries. Late season development of leaf (*Puccinia recondida*) and stem (*P. graminis*) rusts occurred at most locations, but most winter wheats had already achieved the late soft dough or early hard dough stage of kernel development.

The overall yield of the soft red winter wheats tested in 1996 was 48.8 bushels per acre (Table 5 and 14), 5.6 bushels per acre more than the previous year and 16.7 bushels per acre less than yields observed in 1994 (Fig. 2). Average yields at the seven test locations varied from 30.6 bushels per acre at Novelty to 70.2 bushels per acre at Charleston (Table 14). The Columbia, Novelty and Trenton sites averaged 35.6 bushels per acre compared to

66.2 and 49.6 bushels per acre for the southeastern ('Bootheel') and southwestern regions, respectively (Table 13).

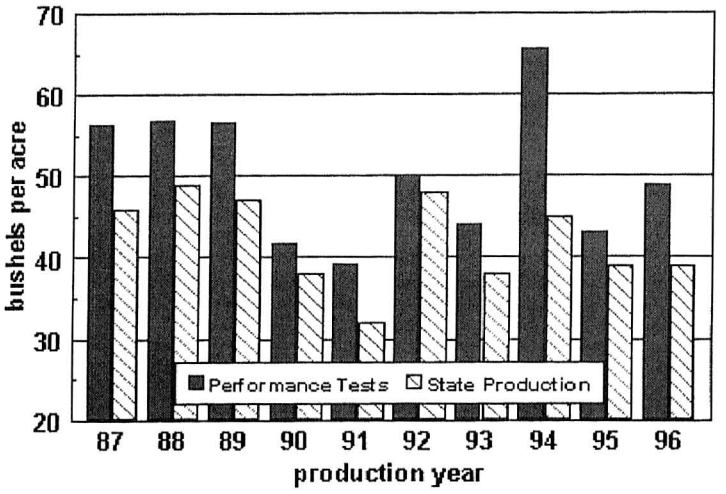

Fig. 2. Average yield of soft red winter wheats tested in the Missouri Winter Wheat Performance Test Program and average yield of commercial state production from 1987 to 1996.

The nine soft red winter wheat varieties producing the highest yields in 1996 demonstrated either superior or above average winterhardiness compared to most other varieties tested (Tables 5 and 14). 'Pioneer variety 2540' was the highest yielding entry tested in 1996, averaging 66.7 bushels per acre across all locations. The highest yielding public variety was 'Howell', released by the Illinois Agricultural Experiment Station in 1992. Howell averaged 60.5 bushels per acre. In addition to Howell, seven other entries produced yields equal to those of Pioneer variety 2540 including; 'HBR 4020' (60.9 bu/acre), 'NeCo S98' (60.3 bu/acre), 'Pioneer variety 2571' (60.3 bu/acre), 'Coker 9474' (60.2 bu/acre), 'FFR 558W' (59.4 bu/acre), 'LG Seeds JMS 104' (58.8 bu/acre), and 'AGRIPRO Clemens' (58.1 bu/acre). Pioneer variety 2571 (54.1 bu/acre) and 'Pioneer variety 2552' (59.3 bu/acre) have been the highest yielding varieties tested for the past 2 and 3 years, respectively (Table 5).

The seven hard red winter wheats tested in 1996 averaged 41.6 bushels per acre across the three test locations (Table 15 and 19). Location yields varied from 34.9 bushels per acre at Trenton to 51.8 bushels per acre at Mt. Vernon (Table 19). As with the soft red winter wheats, adequate winter survival among the hard red winter wheats was necessary to achieve high yields. '2137' was the highest yielding hard red winter wheat tested in 1996, averaging 55.6 bushels per acre across all locations. Yields of 'Karl 92' (51.1 bu/acre) and '2163' (48.5 bu/acre) were equal to those of 2137. All three entries exhibited superior winter survival compared to the remaining 4 hard red winter wheat entries tested.

Test weights among the soft and hard red winter wheats averaged 55.4 and 57.4 pounds per bushel, respectively, in 1996 (Tables 5 and 15). Test weight levels measured in 1996 were nearly equal to those observed in 1995 (Fig. 3), and nearly 5 pounds heavier than the test weights reduced by scab in 1991. Location means during 1996 varied from 48.8 pounds per bushel at Novelty (Table 7) to 60.4 pounds per bushel at Charleston (Table 9). Coker 9474 produced the heaviest test weight at 60.1 pounds per bushel (Table 5). Seven other soft red winter wheats averaged a test weight equal to or exceeding the 58 pounds per bushel minimum necessary for U.S. No. 2 grade soft red winter wheat; HBR 4020 (59.2 lb/bu), Howell (58.8 lb/bu), NeCo S98 (58.8 lb/bu), LG Seeds JMS 104 (58.6 lb/bu), AGRIPRO Elkhart (58.2 lb/bu), Terra SR204 (58.2 lb/bu) and AGRIPRO Pontiac (58.0 lb/bu).

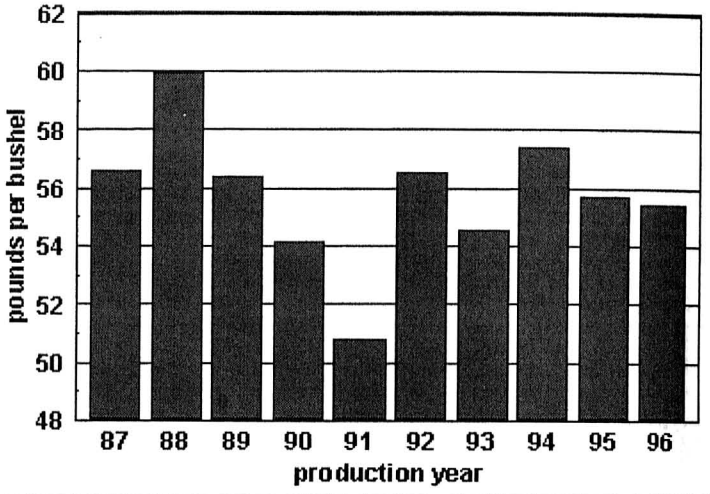

Fig. 3. Average test weight of soft red winter wheats tested from 1987 to 1996.

Hard red winter wheat test weights were heaviest and more consistent at Mt. Vernon (Table 17), where winter survival was greatest and crop development was more uniform. Test weights were lightest and more variable among hard red winter wheats at the Trenton site (Table 18), where survival was approximately one third of that observed at Mt. Vernon. Among the hard red winter wheats tested during 1996, none averaged better than the 60 pounds per bushel minimum required for U.S. No. 1 hard red winter wheat (Table 15). 2137 averaged the heaviest test weight at 59.0 pounds per bushel.

New Variety Descriptions

Several entries previously tested as experimental lines have been or will be released as varieties for commercial production. Descriptions of 'branded varieties' also are provided when the true identity of the variety is known. Brief descriptions derived from variety release statements or other publicly available information are provided for

informational purposes only. These descriptions do not imply endorsement or exclusion of any commercially available wheat varieties by the Missouri Agricultural Experiment Station.

2137 Hard Red Winter Wheat

'2137' (HBF0263-137, KS92P0263-137, PI592444) is a new hard red winter wheat developed and released from the Kansas Agricultural Experiment Station and the Agricultural Research Service, United States Department of Agriculture. 2137 was originally selected from the cross 'W2440 / W9488A // 2163' by Pioneer Hi-Bred International at Hutchinson, Kansas. Development of 2137 continued at Kansas State University following the termination of Pioneer's hard red winter wheat breeding program in 1990. It was tested in regional trials as 'KS92P0263-137'. 2137 is an awned, white chaffed hard red winter wheat with intermediate plant height slightly taller and maturity 1 day later than the '2163' parent. 2137 is resistant to powdery mildew, the prevalent field races of leaf rust, soilborne mosaic virus, wheat spindle streak mosaic virus and Hessian fly. It is moderately resistant to stem rust, wheat streak mosaic virus and barley yellow dwarf virus. 2137 is tolerant of septoria leaf blotch, septoria glume blotch, tan spot and aluminum toxicity associated with low pH soils. In 1996, 2137 demonstrated winterhardiness levels comparable to those exhibited by 2163 and 'Karl 92' hard red winter wheat, and superior to 'Jagger' hard red winter wheat. 2137 was the highest yielding hard red winter wheat tested across three locations in Missouri during 1996 (Tables 15 and 19).

AGRIPRO Mason Soft Red Winter Wheat

'AGRIPRO Mason' (91D-2308, PI594044, PVP 9600218) is a new proprietary soft red winter wheat recently released by Agripro Seeds, Inc. It's pedigree is 'Cardinal // (C78318, MN74143 / Oligoculm) /3/ Coker 9323'. AGRIPRO Mason is a high yielding, strong strawed, medium height wheat with early maturity. AGRIPRO Mason possesses resistance to the most prevalent races of leaf rust and stem rust in its area of adaptation. AGRIPRO Mason offers moderate resistance to septoria leaf and glume blotches, and moderate resistance to wheat spindle streak mosaic and soilborne mosaic viruses. It is considered to have better tolerance to spring freezing injury than most other early maturing soft red winter wheats adapted to the southern corn belt and Mid-South regions. AGRIPRO Mason produced average yield and test weight compared to all entries tested at 7 locations in Missouri during 1996 (Tables 5 and 14). Application for Plant Variety Protection has been made for AGRIPRO Mason (PVP Cert. No. 9600218), with commercial sale of seed only as a class of certified seed. More detailed information on AGRIPRO Mason is available from the company upon request.

Coker 9663 Soft Red Winter Wheat

'Coker 9663' (L900819) is an awnletted soft red winter wheat developed by the Northrup King Company at Bay, Arkansas from the cross 'IN71761A4-31-5-48 / Florida 302'. Coker 9663 is a tall semi-dwarf variety with good straw strength, growing 2 to 3 inches taller in plant height than most other semi-dwarf types. Maturity is considered early-to-intermediate, with excellent yield potential and high test weight. Coker 9663 is resistant to the prevalent field races of leaf rust that exist in the Mid-South region. It is moderately resistant to stem rust, septoria leaf and glume blotches and powdery mildew. Coker 9663 exhibits moderately resistant to resistant reactions to Biotype E of the Hessian fly. Winterhardiness should be adequate to permit production as far north as I-70 in most years. Yields and test weights of Coker 9663 were average compared to all other soft red winter wheats tested in Missouri during 1996 (Tables 5 and 14). Northrup King has applied for Plant Variety Protection of Coker 9663 under the Title V option, with commercial sale of seed only available as a class of certified seed through their TGN grower/dealer network. More detailed information on Coker 9663 is available from the company upon request.

Jaypee Soft Red Winter Wheat

'Jaypee' (AR26158-4, PI592760, PVP 9600156) is the most recent soft red winter wheat developed and released by the University of Arkansas's Agricultural Experiment Station. Jaypee is an awntipped, white chaffed variety selected from the cross 'Doublecrop // (AR39-3, Forlani / Garibaldino)' to combine early maturity and high yield potential with substantially heavier test weight. Jaypee is resistant to leaf rust, moderately resistant to septoria glume blotch, soilborne mosaic virus and wheat spindle streak mosaic virus, and expresses adult plant resistance to powdery mildew. Jaypee exhibits good milling and excellent baking characteristics. In 1996, Jaypee suffered substantial winter injury at most Missouri test locations resulting in below average yield combined with average test weight (Tables 5 and 14). Jaypee may lack sufficient winterhardiness for wide-spread adaptation in Missouri, with the best adaptation of Jaypee in Missouri likely to occur in the southeastern counties of the upper Mississippi River Delta. Application for Plant Variety Protection of Jaypee (PVP Cert. No. 9600156) has been made by the University of Arkansas.

Pioneer variety 2540 Soft Red Winter Wheat

'Pioneer variety 2540' (XW535, PVP 9500246) is a new proprietary soft red winter wheat developed by Pioneer Hi-Bred International, Inc. Pioneer variety 2540 is an awned, medium maturing variety, with medium plant height and average straw lodging resistance. It has strong winterhardiness and has shown good adaptation over most of the soft wheat growing region, but below average drought tolerance may limit its performance some seasons on light or sandy soils. Pioneer variety 2540 has very good resistance to powdery mildew, leaf rust, stem rust, soilborne mosaic virus, wheat spindle streak mosaic virus, septoria leaf and glume blotches and tan spot. Pioneer variety 2540 has no known resistance to Hessian fly. Pioneer variety 2540 has demonstrated excellent yield potential and good test weight across the soft wheat region. It averaged the highest yields among all soft red

Table 4. Estimated acreage, yield and production of winter wheat in Missouri by reporting district for 1996. Estimates are based on the July 1 USDA forecast provided by the Missouri Agricultural Statistics Service.

Reporting District	Acreage Planted	Acreage Harvested	Acreage Abandoned	Estimated Yield	Estimated Production
	---------- 1,000 acres ----------		- % -	- bu/acre -	- 1,000 bushels -
North-West	118	106	10	33	3,550
North-Central	177	133	25	34	4,550
North-East	254	171	33	34	5,850
West-Central	203	180	11	35	6,350
Central	217	161	26	39	6,350
East-Central	139	105	24	35	3,700
South-West	111	101	9	38	3,850
South-Central	11	7	27	36	250
South-East	370	336	9	48	16,250
State	1,600	1,300	19	39	50,700

winter wheat entries tested across 7 locations in Missouri during 1996 (Tables 5 and 14). Pioneer variety 2540 is protected by the Plant Variety Protection Act as amended in 1994 (PVP Cert. No. 9500246). More detailed information on Pioneer variety 2540 is available from the Pioneer upon request.

Pioneer variety 2568 Soft Red Winter Wheat

'Pioneer variety 2568' (XW532, PVP 9500247) is a new proprietary soft red winter wheat developed by Pioneer Hi-Bred International, Inc. Pioneer variety 2568 is an awned, medium-early maturing variety, with medium plant height and excellent straw lodging resistance. It has shown excellent adaptation over most of the soft wheat growing region, but with below average winterhardiness, similar to that of Pioneer variety 2548, it is not recommended in areas prone to frequent winterkill. Pioneer variety 2568 has excellent resistance to leaf rust, stem rust, soilborne mosaic virus, and wheat spindle streak mosaic virus. It has moderate resistance to powdery mildew, septoria leaf and glume blotches and tan spot. Pioneer variety 2568 has no known resistance to Hessian fly. Pioneer variety 2568 has demonstrated excellent yield potential and very good test weight across the soft wheat region. In 1996, Pioneer variety 2568 was the highest yielding entry at Charleston and performed above-average in yield across all 7 test locations (Tables 5 and 14). Test weight performance was average compared to all other entries. Pioneer variety 2568 is protected by the Plant Variety Protection Act as amended in 1994 (PVP Cert. No. 9500247). More detailed information on Pioneer variety 2568 is available from Pioneer upon request.

1996 Missouri Winter Wheat Crop

Projected Crop Statistics

Based on July 1 estimates, Missouri's 1996 wheat crop was harvested from approximately 1.3 million acres, up 8 percent from the wheat acreage harvested in 1995 (Table 5). Severe winter injury resulted in significant wheat acreage abandonment prior to harvest in the North-Central, North-East, Central and East-Central crop reporting districts. The statewide average yield projected by the Missouri Agricultural Statistical Service is 39 bu/acre, nearly equal to average yields attained in 1995 (Fig. 2) and below the 44 bu/acre reported for 1994. Projected district average yields ranged from a high of 48 bu/acre for the South-East district to a low of 33 bu/acre in the North-West district. Total projected production of the 1996 Missouri wheat crop is 50.7 million bushels, over 6 million bushels more than 1995 production levels and representing a 14 percent increase.

Electronic Accessibility of Data

Results of the 1996 Missouri Winter Wheat Performance Tests are now available in three electronic forms. The winter wheat variety test data can be accessed on the Missouri Agricultural Bulletin Board (AgEBB) supported by the University of Missouri College of Agriculture, Food and Natural Resources. The telephone number for the AgEBB is (573) 882-8289. Baud rates up to 14,400 bps are presently supported. Select the "CROP PERFORMANCE TESTING" option from the main AgEBB menu. Call (573) 882-4827 to contact the AgEBB staff concerning questions or problems.

For Internet users, the 1996 Missouri winter wheat test results are available on either gopher or world wide web servers. World wide web access of this entire document is offered at 'http://www.psu.missouri.edu/pubs/sr479'. The 1996 Missouri winter wheat test data also can be obtained in the form of Excel 4.0 spreadsheets either from the University of Missouri Extension Gopher Server or from the GrainGenes Gopher Server located at Cornell University. The University Extension Gopher is accessible at the Internet address 'etcs.ext.missouri.edu'. At the main menu of the UE Gopher, select the menu option titled 'Other Information Servers of Interest to University Extension'. Next select 'State Wheat & Other Small Grain Performance Tests'. The Internet host address for the Cornell Gopher database is 'greengenes.cit.cornell.edu'. Select the "Grain files to download" menu option from the main GrainGenes menu and then select "Wheat Variety Tests". Missouri winter wheat variety test data from

previous reports and reports from other states also are available.

Acknowledgments

Special Report No. 497 is a contribution of the Department of Agronomy, University of Missouri Agricultural Experiment Station. The Missouri Winter Wheat Performance Testing program is partially funded by Missouri wheat farmers and businessmen through a grant from the Missouri Seed Improvement Association and by fees from companies submitting varieties for evaluation. Special recognition goes to the following individuals who provided their time, land and additional resources in support of this program:

Mr. Peter Brewer, Farmer Cooperator
Trenton, Missouri

Mr. Smith Deline, Farmer Cooperator
Charleston, Missouri

Mr. Jake Fisher, Superintendent
Delta Research and Extension Center
Portageville, Missouri

Dr. Richard Crawford, Superintendent
Southwest Research and Extension Center
Mt. Vernon, Missouri

Mr. John Poehlmann, Superintendent
Bradford Agricultural Research Center
Columbia, Missouri

Mr. David Sheats, Farmer Cooperator
Lamar, Missouri

Mr. Randall Smoot, Superintendent
Greenley Agricultural Research Center
Novelty, Missouri

The excellent cooperation and support provided by these individuals has been invaluable to this project. Special thanks also are extended to Dr. Laura Sweets, Commercial Ag. Extension Plant Pathologist, University of Missouri, for help with disease evaluations and plot harvesting, Mr. Richard Mattas, Southwest Research and Extension Center, for supplying heading notes at Mt. Vernon, and to Mr. Bob Bellinghouse, Director, Missouri Agricultural Statistics Service, for supplying Missouri wheat production statistics and for help in direct mailing of this publication to Missouri wheat farmers. The authors would like to extend their appreciation to the following individuals for their contribution towards this report: Jennifer Morris, Brent Davey, Raymond Bate, Andrew Bate, Tim Kroening, Tonya Vogt and Ben Waller.

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Table 5. Performance of soft red winter wheats tested across seven locations in Missouri during 1996. Varieties listed alphabetically.

Variety	Grain Yield 1/ 1996	Grain Yield 1/ 1995-96	Grain Yield 1/ 1994-96	Test Weight	Grain Moisture	Plant Height	Lodging 2/	Winter Survival 3/	Heading Date Julian	Heading Date Calendar
	----------bushels/acre ---------			- lb/bu -	- % -	- inches -	0-9	- % -		
AG 410	45.9			52.0	11.9	34	1	34	137	May 17
AGRIPRO Clemens	**58.1***	**53.0***	**57.6***	56.2	12.8	40	2	57	135	May 15
AGRIPRO Elkhart	56.1	50.8		58.2	12.1	38	2	45	133	May 13
AGRIPRO Foster	53.0			54.9	13.9	37	2	41	137	May 17
AGRIPRO Hickory	39.3	42.2	50.8	53.7	13.5	38	2	28	135	May 15
AGRIPRO Mason (91D-2308)	45.3			54.5	13.0	37	2	31	134	May 14
AGRIPRO Pontiac	55.0	49.7	54.3	58.0	12.0	37	2	49	136	May 16
AGRIPRO Shiloh	55.0	49.1		55.3	11.8	38	2	55	134	May 14
Cardinal	54.1	49.3	54.0	55.6	12.2	43	2	51	137	May 17
Coker 9474	**60.2***	**52.4***	55.9	60.1	12.4	34	2	59	132	May 12
Coker 9543	46.3	47.0	48.5	55.4	12.3	34	3	38	134	May 14
Coker 9663 (L900819)	53.2			57.8	12.6	39	2	37	136	May 16
Coker 9803	27.4	38.5	42.4	55.9	13.1	33	2	18	136	May 16
Ernie	47.9	48.5	55.6	56.4	12.3	33	3	39	133	May 13
Featherstone 520	35.1			53.5	12.8	36	2	24	137	May 17
FFR 522W	43.5			55.2	13.8	35	2	32	135	May 15
FFR 525W	40.6	44.8	53.7	55.0	13.0	36	2	25	136	May 16
FFR 558W	**59.4***	**52.6***		57.8	13.2	39	2	48	136	May 16
GA-Dozier	37.3			54.0	12.6	33	2	29	137	May 17
Hazen	30.6			54.3	13.5	34	1	20	138	May 18
HBR 3020 (NeCo EX-3020)	53.6	48.0		53.7	11.6	38	2	45	136	May 16
HBR 4010 (MPG EX782)	50.6	49.9		51.6	13.1	38	2	33	138	May 18
HBR 4020 (NeCo EX-4020)	**60.9***	**51.8***		58.9	13.1	39	3	61	134	May 14
Heartland E-23	53.7	49.7		55.8	12.1	35	3	48	133	May 13
Howell	**60.5***	50.2	53.3	58.8	12.9	42	2	57	134	May 14
Jackson	31.9	40.7	48.3	51.6	12.8	35	2	21	137	May 17
Jaypee (AR26158-4)	20.0			56.6	13.1	33	2	12	138	May 18
Karl 92, hard check	53.2	46.3	49.7	59.2	11.9	35	5	63	129	May 9
LG Seeds JMS 104	**58.8***			58.6	13.2	38	3	56	135	May 15
LG Seeds JMS 105	53.2			54.1	11.5	38	2	48	135	May 15
Madison	47.3	47.5	54.2	54.5	12.4	38	3	40	136	May 16
Merschman Barbie IV	55.6	50.6	55.4	54.5	11.5	39	3	51	135	May 15
Merschman Bintee VI	50.7			56.2	13.3	38	2	33	135	May 15
Merschman Genie VI	54.1	51.7	51.7	51.2	13.6	38	2	37	138	May 18
Merschman Julie IV	49.3			57.0	12.7	38	3	35	134	May 14
Merschman Katie VIII	47.4			55.8	13.3	38	2	31	135	May 15
Merschman Millie II	52.1			56.3	12.2	38	3	39	131	May 11
MFA Commander II	49.7			57.5	13.2	37	2	32	135	May 15

MFA Enterprise	55.7	48.4	53.4	57.9	13.5	38	2	47	135	May 15
MFA Fury (EXP 1540)	46.3			54.1	12.5	38	3	37	134	May 14
MO12258	42.0	43.9	52.5	54.5	13.0	35	2	30	135	May 15
MO92-599	40.6	46.4		54.3	13.5	36	2	23	136	May 16
MO94-082	34.1			55.2	13.5	37	2	20	137	May 17
NeCo S88	54.5			54.4	11.7	38	2	45	135	May 15
NeCo S95	50.0			51.6	12.7	38	2	35	138	May 18
NeCo S98 (MPG EX042)	**60.3***	50.0		58.8	13.0	39	2	65	134	May 14
OH526	39.5			53.5	13.0	36	1	29	137	May 17
Patterson	52.7	46.7		56.4	12.4	37	2	51	132	May 12
Pioneer variety 2540	**66.7****			57.5	11.7	37	2	60	132	May 12
Pioneer variety 2548	50.9	50.9	55.8	55.9	12.2	35	2	36	137	May 17
Pioneer variety 2552	56.6	**52.3***	**59.3****	57.3	12.4	37	2	48	135	May 15
Pioneer variety 2568	56.6			55.0	12.2	36	2	45	133	May 13
Pioneer variety 2571	**60.3***	**54.1****	**57.7***	57.8	12.4	36	2	49	132	May 12
Stine 479	48.6			56.5	13.6	37	2	32	135	May 15
Stine 480	54.1			55.4	12.1	38	2	40	134	May 14
Stine 484	51.4			56.9	12.8	38	3	39	134	May 14
Stine 501	51.6	50.3		50.8	13.3	38	2	34	139	May 19
Terra Exp 211	52.9			55.6	12.1	36	3	47	134	May 14
Terra SR204	57.7	50.3	55.6	58.2	13.0	38	2	54	135	May 15
Terra SR205	52.0	49.4	55.3	53.9	11.6	38	2	55	134	May 14
Terral TV 8555	39.5			52.3	13.4	33	1	26	138	May 18
Terral TV 8825	31.3			51.0	15.4	38	2	17	140	May 20
VA93-52-60	34.7			51.7	12.6	34	3	23	136	May 16
Wakefield	38.9	42.2	51.2	53.1	13.5	39	2	25	140	May 20
Average	48.8	48.5	53.4	55.4	12.7	37	2	39	135	May 15
LSD (p=0.05)	8.7	2.3	1.9	2.4	1.3	8.0	0.8	10.2	6.4	
CV%	33.5	12.4	11.7	8.0	18.7	39.4	74.1	49.5	5.9	
Location Years	7	14	21	7	7	7	7	7	3	

1/ Yields are based on 60 pound per bushel test weight adjusted to 13.0 percent moisture content.
2/ Lodging scores of 0 to 9 represent none to total lodging, respectively.
3/ Derived from stand counts recorded during March, 1996.
** Indicates highest yielding variety within a column.
* Indicates varieties yielding equal to highest yielding variety within a column based on Fisher's protected LSD (p=0.05).

Table 6. Performance of soft red winter wheats tested near Columbia, Missouri during 1996. Varieties listed alphabetically.

Variety	Grain Yield 1/ 1996	Grain Yield 1/ 1995-96	Grain Yield 1/ 1994-96	Test Weight	Grain Moisture	Plant Height	Lodging 2/	Winter Survival 3/	Heading Date Julian	Heading Date Calendar	Septoria Leaf Blotch 4/
	bushels/acre			- lb/bu -	- % -	- inches -	0-9	- % -			- % -
AG 410	25.1			47.1	11.7	27	2	15	148	May 27	18
AGRIPRO Clemens	**56.8***	**56.9***	**61.3****	55.4	12.4	33	3	55	144	May 23	13
AGRIPRO Elkhart	39.1	38.4		57.7	11.8	30	3	32	144	May 24	12
AGRIPRO Foster	41.9			53.5	12.7	28	2	30	147	May 26	10
AGRIPRO Hickory	10.2	27.7	42.1	46.8	13.5	30	2	5	147	May 26	11
AGRIPRO Mason (91D-2308)	29.5			51.2	11.6	31	2	18	145	May 24	9
AGRIPRO Pontiac	47.9	**53.0***	55.9	55.6	11.8	29	4	39	144	May 24	19
AGRIPRO Shiloh	49.3	51.7		54.9	11.5	30	3	47	144	May 24	16
Cardinal	49.7	**54.3***	55.9	54.4	12.1	35	2	46	146	May 25	16
Coker 9474	**56.9***	**58.4****	**59.8***	60.6	12.4	30	2	59	140	May 20	19
Coker 9543	26.9	40.6	41.8	52.3	12.0	27	2	17	145	May 24	8
Coker 9663 (L900819)	34.3			53.1	12.6	31	2	19	146	May 26	9
Coker 9803	4.7	27.6	31.9	§	14.0	25	1	2	147	May 27	9
Ernie	31.0	44.6	52.0	53.8	11.7	26	2	19	143	May 22	11
Featherstone 520	12.9			47.1	13.0	30	1	9	147	May 27	22
FFR 522W	29.3			53.4	12.2	27	2	21	146	May 26	7
FFR 525W	17.1	35.7	48.8	51.4	12.3	27	2	10	148	May 27	10
FFR 558W	49.1	47.7		55.3	13.2	31	2	37	147	May 27	14
GA-Dozier	11.3			47.1	11.5	27	2	10	148	May 28	49
Hazen	4.5			50.0	12.3	26	1	8	148	May 28	17
HBR 3020 (NeCo EX-3020)	50.1	44.9		50.7	11.3	30	2	45	144	May 24	17
HBR 4010 (MPG EX782)	33.5	47.7		48.5	11.8	30	2	15	147	May 26	17
HBR 4020 (NeCo EX-4020)	**60.1***	**55.5***		59.2	12.8	31	3	61	142	May 22	26
Heartland E-23	44.8	48.0		54.8	11.9	26	3	36	142	May 22	35
Howell	**58.6***	**54.4***	**57.2***	58.0	12.3	33	3	54	142	May 21	20
Jackson	11.4	35.6	46.7	49.1	11.8	27	2	6	147	May 26	12
Jaypee (AR26158-4) †	-			-	-	-	-	0	-	-	-
Karl 92, hard check	52.4	47.7	50.9	59.2	12.1	29	6	60	138	May 18	24
LG Seeds JMS 104	**60.3***			57.2	13.1	30	3	55	144	May 23	25
LG Seeds JMS 105	52.0			51.9	11.1	31	3	52	143	May 23	28
Madison	31.5	40.8	49.3	53.1	11.9	31	3	21	147	May 26	14
Merschman Barbie IV	55.0	**53.6***	**57.1***	53.8	11.1	31	4	46	143	May 23	24
Merschman Bintee VI	33.1			52.5	12.4	30	2	23	145	May 25	20
Merschman Genie VI	38.1	48.9	48.9	48.3	11.6	30	2	17	146	May 26	15
Merschman Julie IV	37.8			55.7	12.7	30	3	25	143	May 23	13
Merschman Katie VIII	25.2			52.0	12.7	32	2	13	145	May 25	20
Merschman Millie II	46.3			56.0	11.9	30	3	33	141	May 21	29
MFA Commander II	22.6			53.8	12.9	28	2	16	147	May 27	20

MFA Enterprise	53.4	51.4	55.0	56.5	13.1	30	3	43	143	May 23	13
MFA Fury (EXP 1540)	40.0			53.6	11.5	30	3	21	145	May 24	17
MO12258	24.0	42.1	50.6	51.1	11.4	29	3	17	146	May 25	10
MO92-599	14.0	34.5		52.3	12.3	28	2	9	148	May 27	11
MO94-082	12.0			49.9	12.0	31	1	10	147	May 27	14
NeCo S88	50.8			54.2	11.3	31	3	44	143	May 23	20
NeCo S95	37.1			52.4	12.0	31	2	25	147	May 27	17
NeCo S98 (MPG EX042)	**57.2***	51.6		59.3	12.8	31	3	62	141	May 21	19
OH526	14.6			46.9	12.2	27	2	7	149	May 28	21
Patterson	46.2	43.0		54.4	11.8	30	4	50	141	May 21	62
Pioneer variety 2540	**65.2****			56.5	11.9	30	3	52	142	May 21	16
Pioneer variety 2548	35.3	46.1	53.3	50.1	11.7	27	2	24	147	May 26	17
Pioneer variety 2552	43.6	47.9	55.0	55.8	12.6	29	2	38	147	May 26	5
Pioneer variety 2568	46.8			54.0	11.5	29	2	32	143	May 22	14
Pioneer variety 2571	**59.1***	**54.9***	**59.0***	56.5	12.3	29	3	35	142	May 21	8
Stine 479	30.4			54.0	13.1	32	2	22	146	May 26	19
Stine 480	47.4			54.3	11.3	33	3	44	143	May 23	26
Stine 484	46.8			56.2	12.0	30	3	28	142	May 22	17
Stine 501	35.8	45.7		48.8	12.4	30	2	22	147	May 27	17
Terra EXP 211	37.6			53.7	11.9	29	3	32	144	May 23	19
Terra SR204	**60.9***	**53.6***	**57.1***	56.6	12.8	31	2	55	143	May 22	17
Terra SR205	52.0	51.0	55.3	55.1	11.3	31	3	53	142	May 22	23
Terral TV 8555	18.1			48.0	12.3	26	1	11	148	May 27	23
Terral TV 8825	4.1			43.9	18.3	30	1	2	147	May 26	6
VA93-52-60	23.1			47.7	11.4	28	3	12	145	May 25	57
Wakefield	11.6	32.8	44.0	46.9	14.5	31	1	5	148	May 27	11
Average	36.0	46.1	51.8	53.3	12.1	30	2	29	145	May 25	18
LSD (p=0.05)	8.6	6.4	4.5	4.6	1.0	3.3	1.3	10.5	2.4		12.5
CV%	17.2	14.2	10.7	5.5	4.1	7.9	38.1	26.4	1.2		48.3

1/ Yields are based on 60 pound per bushel test weight adjusted to 13.0 percent moisture content.
2/ Lodging scores of 0 to 9 represent none to total lodging, respectively.
3/ Derived from stand counts recorded during March, 1996.
4/ Percent of total foliage infected with septoria leaf blotch (*Septoria tritici* syn. *Mycosphaerella graminicola*) under field conditions during the milk stage (Feeke's GS 11.1) of kernel development.
§ Insufficient grain harvested in 1996 to accurately estimate test weight.
† Jaypee not harvested at Columbia in 1996 due to excessive winter injury and complete stand loss.
** Indicates highest yielding variety within a column.
* Indicates varieties yielding equal to highest yielding variety within a column based on Fisher's protected LSD (p=0.05).

Table 7. Performance of soft red winter wheats tested at Novelty, Missouri during 1996. Varieties listed alphabetically.

Variety	Grain Yield 1/ 1996	Grain Yield 1/ 1995-96	Grain Yield 1/ 1994-96	Test Weight	Grain Moisture	Plant Height	Lodging 2/	Winter Survival 3/
	bushels/acre			-lb/bu-	-%-	-inches-	0-9	-%-
AG 410	30.9			44.9	13.3	30	0	21
AGRIPRO Clemens	30.0	33.4	46.2	46.6	15.9	33	1	27
AGRIPRO Elkhart	**42.0***	**37.7***		53.0	14.3	32	1	27
AGRIPRO Foster	**36.8***			48.1	20.2	33	0	25
AGRIPRO Hickory	15.5	27.7	42.9	40.9	18.0	32	0	14
AGRIPRO Mason (91D-2308)	24.5			48.2	19.8	31	0	20
AGRIPRO Pontiac	**46.3***	**39.7***	**48.8***	56.9	12.9	29	1	33
AGRIPRO Shiloh	34.9	33.3		51.3	14.6	33	2	29
Cardinal	28.3	32.6	41.5	48.0	14.1	35	0	20
Coker 9474	**43.2***	**38.8***	45.7	57.3	13.9	29	1	26
Coker 9543	25.5	34.2	41.6	48.7	14.7	30	1	19
Coker 9663 (L900819)	**36.7***			54.6	13.1	34	1	28
Coker 9803	10.0	26.5	35.7	32.7	14.0	27	1	2
Ernie	**37.8***	**39.7***	**50.3***	52.9	15.3	29	1	29
Featherstone 520	17.6			43.5	17.1	32	1	16
FFR 522W	13.1			41.9	23.6	29	1	11
FFR 525W	29.5	36.0	**49.2***	48.3	15.9	31	1	14
FFR 558W	33.1	36.6		52.0	17.6	34	0	28
GA-Dozier	22.3			46.5	19.4	29	0	15
Hazen	9.8			41.6	17.3	28	0	5
HBR 3020 (NeCo EX-3020)	**41.7***	**39.4***		52.5	11.6	33	2	29
HBR 4010 (MPG EX782)	27.5	34.5		42.5	21.1	34	0	18
HBR 4020 (NeCo EX-4020)	**45.3***	**39.8***		55.0	13.6	35	0	31
Heartland E-23	**38.4***	**37.2***		50.9	14.5	32	0	21
Howell	**41.9***	**37.6***	45.5	49.9	15.3	36	2	35
Jackson	15.3	31.1	40.8	37.5	16.2	31	1	10
Jaypee (AR26158-4)	7.2			§	14.0	26	0	1
Karl 92, hard check	**47.8***	**42.6***	**47.3***	56.9	12.5	30	2	41
LG Seeds JMS 104	33.8			55.2	14.3	33	0	30
LG Seeds JMS 105	**42.4***			50.4	12.0	33	1	32
Madison	28.4	32.7	43.7	47.5	15.2	35	2	23
Merschman Barbie IV	**48.0****	**42.5***	**52.2****	51.4	12.0	32	2	35
Merschman Bintee VI	35.2			53.9	16.4	33	1	23
Merschman Genie VI	25.9	31.6	31.6	41.6	23.3	34	0	14
Merschman Julie IV	27.6			49.8	16.2	33	2	19
Merschman Katie VIII	27.6			44.7	18.4	33	1	20
Merschman Millie II	35.1			51.5	14.0	33	1	22
MFA Commander II	**37.8***			51.9	16.5	33	0	21

MFA Enterprise	28.2	31.3	42.9	49.1	17.5	33	1	28
MFA Fury (EXP 1540)	26.4			46.2	15.7	32	2	29
MO12258	20.6	30.9	45.4	46.3	19.6	30	1	18
MO92-599	26.1	36.6		47.0	19.5	31	1	11
MO94-082	29.2			51.2	16.4	34	1	17
NeCo S88	**41.8***			48.0	12.5	33	1	24
NeCo S95	27.4			40.8	15.7	34	0	18
NeCo S98 (MPG EX042)	**46.5***	**38.6***		55.3	13.2	33	1	36
OH526	25.6			47.7	17.6	32	0	18
Patterson	27.6	31.1		49.8	16.6	30	1	24
Pioneer variety 2540	**47.1***			55.4	13.7	32	0	31
Pioneer variety 2548	34.1	**38.6***	**48.9***	53.1	15.2	31	0	26
Pioneer variety 2552	30.9	35.8	46.6	53.7	14.8	31	0	20
Pioneer variety 2568	33.0			48.5	14.3	30	1	24
Pioneer variety 2571	**47.9***	**43.1****	**49.4***	56.0	13.3	31	0	32
Stine 479	25.8			47.8	20.4	32	1	21
Stine 480	30.5			49.8	13.7	33	1	23
Stine 484	25.4			51.1	16.1	31	2	24
Stine 501	29.1	34.1		41.0	18.3	33	0	17
Terra Exp 211	33.9			50.9	13.7	30	1	26
Terra SR204	**40.1***	**37.0***	**47.4***	53.4	13.9	35	1	29
Terra SR205	**39.1***	**39.9***	**50.7***	48.6	12.0	32	2	36
Terral TV 8555	19.6			42.4	22.6	27	0	17
Terral TV 8825	13.7			35.0	14.0	32	0	7
VA93-52-60	11.2			40.7	17.3	26	1	7
Wakefield	23.3	32.8	42.9	45.0	19.2	34	1	14
Average	30.6	35.7	45.7	48.8	15.9	32	1	22
LSD (p=0.05)	12.4	6.3	4.9	6.0	5.1	3.1	1.3	8.1
CV%	25.1	16.7	12.8	7.4	19.8	6	102.5	26.5

1/ Yields are based on 60 pound per bushel test weight adjusted to 13.0 percent moisture content.
2/ Lodging scores of 0 to 9 represent none to total lodging, respectively.
3/ Derived from stand counts recorded during March, 1996.
§ Insufficient grain harvested in 1996 to accurately estimate test weight.
** Indicates highest yielding variety within a column.
* Indicates varieties yielding equal to highest yielding variety within a column based on Fisher's protected LSD (p=0.05).

Table 8. Performance of soft red winter wheats tested near Trenton, Missouri during 1996. Varieties listed alphabetically.

Variety	Grain Yield 1/ 1996	Grain Yield 1/ 1995-96	Grain Yield 1/ 1994-96	Test Weight	Grain Moisture	Plant Height	Lodging 2/	Winter Survival 3/
	bushels/acre			- lb/bu -	- % -	- inches -	0-9	- % -
AG 410	36.4			48.4	11.8	26	0	28
AGRIPRO Clemens	**53.7***	**56.6***	56.9	56.7	12.7	32	0	35
AGRIPRO Elkhart	**54.0***	**58.9***		58.4	12.8	30	0	33
AGRIPRO Foster	34.0			50.6	18.2	30	0	18
AGRIPRO Hickory	33.4	49.0	56.5	53.6	16.3	31	0	8
AGRIPRO Mason (91D-2308)	36.2			53.4	14.5	29	0	19
AGRIPRO Pontiac	**49.6***	53.9	59.5	57.2	12.2	29	1	36
AGRIPRO Shiloh	40.7	44.1		53.4	12.2	30	0	39
Cardinal	44.6	54.2	56.7	54.5	12.1	34	1	39
Coker 9474	**51.8***	**57.0***	**63.8***	60.1	12.8	28	1	34
Coker 9543	31.2	48.3	50.5	53.9	13.3	28	2	16
Coker 9663 (L900819)	46.1			56.0	12.5	31	0	28
Coker 9803	9.1	37.9	40.1	51.0	14.9	26	0	4
Ernie	**47.4***	**61.8***	**67.9****	56.4	12.9	27	3	31
Featherstone 520	21.8			50.9	13.7	30	0	14
FFR 522W	30.1			50.5	12.8	29	0	10
FFR 525W	22.3	45.7	56.6	50.2	16.3	28	0	13
FFR 558W	**57.9***	**61.5***		58.7	13.8	31	1	35
GA-Dozier	37.6			55.6	13.0	26	0	19
Hazen	13.7			48.8	17.7	29	0	6
HBR 3020 (NeCo EX-3020)	36.1	45.6		50.0	12.2	31	1	34
HBR 4010 (MPG EX782)	39.7	54.6		50.2	14.1	31	0	13
HBR 4020 (NeCo EX-4020)	**53.7***	**55.7***		56.9	13.0	32	1	42
Heartland E-23	**52.4***	**59.6***		57.1	12.6	28	0	30
Howell	**55.6***	**58.2***	60.2	58.7	14.0	35	0	38
Jackson	20.8	42.5	49.9	48.7	14.5	27	1	13
Jaypee (AR26158-4)	5.6			§	14.0	25	0	6
Karl 92, hard check	**50.9***	51.1	54.9	58.8	12.4	29	3	41
LG Seeds JMS 104	**52.0***			56.0	13.0	31	1	41
LG Seeds JMS 105	37.7			49.6	11.8	31	0	36
Madison	28.6	50.1	54.4	50.3	12.8	31	1	20
Merschman Barbie IV	41.5	52.8	59.7	51.3	11.9	32	1	32
Merschman Bintee VI	37.9			52.0	16.3	31	0	22
Merschman Genie VI	43.2	50.6	50.6	49.0	15.9	30	0	20
Merschman Julie IV	40.7			55.9	12.7	32	0	25
Merschman Katie VIII	46.3			56.4	14.3	31	0	22
Merschman Millie II	40.9			54.6	12.6	30	1	25
MFA Commander II	**52.4***			57.5	14.3	30	0	30

MFA Enterprise	44.1	47.7	55.2	55.5	13.6	29	1	36
MFA Fury (EXP 1540)	22.6			46.5	14.5	31	3	17
MO12258	27.6	50.5	57.3	51.1	13.7	27	1	13
MO92-599	30.0	49.9		52.2	16.6	29	0	5
MO94-082	20.1			46.6	17.2	30	0	6
NeCo S88	45.1			51.5	11.9	31	1	43
NeCo S95	36.8			50.5	15.4	31	0	16
NeCo S98 (MPG EX042)	44.1	49.5		53.6	13.6	29	1	46
OH526	40.2			53.8	12.6	29	0	28
Patterson	**57.8***	**58.1***		58.4	12.3	30	0	40
Pioneer variety 2540	**57.4***			57.0	11.7	29	0	36
Pioneer variety 2548	**52.7***	**58.2***	**62.5***	56.7	12.8	28	0	29
Pioneer variety 2552	31.8	45.6	54.8	52.3	12.5	29	0	18
Pioneer variety 2568	38.4			53.1	14.4	28	0	18
Pioneer variety 2571	**59.5****	**62.1****	**65.2***	58.0	13.1	30	0	33
Stine 479	43.7			55.0	14.5	30	0	17
Stine 480	42.9			51.6	13.0	31	0	30
Stine 484	36.5			53.9	12.9	31	1	27
Stine 501	31.5	43.0		48.2	17.3	29	0	11
Terra Exp 211	**55.4***			56.3	12.2	29	0	38
Terra SR204	45.7	52.5	59.2	56.6	13.1	30	0	41
Terra SR205	37.7	51.6	59.5	49.0	12.8	31	0	44
Terral TV 8555	29.5			53.2	15.0	27	0	18
Terral TV 8825	21.7			44.5	25.3	31	0	4
VA93-52-60	15.7			44.7	14.5	27	1	9
Wakefield	28.3	45.5	52.3	51.0	13.1	31	0	13
Average	38.9	51.8	56.9	53.4	13.9	30	< 1	25
LSD (p=0.05)	12.3	7.2	5.6	4.3	2.5	1.9	1.1	8.9
CV%	22.7	14.0	12.3	5.5	12.8	4.5	198	25.6

1/ Yields are based on 60 pound per bushel test weight adjusted to 13.0 percent moisture content.
2/ Lodging scores of 0 to 9 represent none to total lodging, respectively.
3/ Derived from stand counts recorded during March, 1996.
§ Insufficient grain harvested in 1996 to accurately estimate test weight.
** Indicates highest yielding variety within a column.
* Indicates varieties yielding equal to highest yielding variety within a column based on Fisher's protected LSD (p=0.05).

Table 9. Performance of soft red winter wheats tested at Charleston, Missouri during 1996. Varieties listed alphabetically.

Variety	Grain Yield 1/ 1996	Grain Yield 1/ 1995-96	Grain Yield 1/ 1994-96	Test Weight	Grain Moisture	Plant Height	Lodging 2/	Winter Survival 3/
	bushels/acre			-lb/bu-	-%-	-inches-	0-9	-%-
AG 410	64.8			59.1	10.6	30	3	31
AGRIPRO Clemens	69.7	55.3	59.7	61.4	10.9	36	4	57
AGRIPRO Elkhart	**74.7***	56.9		62.2	10.1	34	2	57
AGRIPRO Foster	**74.8***			59.8	10.4	34	3	48
AGRIPRO Hickory	67.1	51.1	55.9	60.4	10.6	33	3	33
AGRIPRO Mason (91D-2308)	70.1			60.3	10.3	32	4	44
AGRIPRO Pontiac	71.5	52.3	57.0	62.2	10.3	34	3	49
AGRIPRO Shiloh	67.3	53.4		58.8	10.0	33	3	61
Cardinal	**75.9***	55.9	64.5	60.1	10.6	38	3	62
Coker 9474	**75.1***	55.4	56.5	62.9	10.6	31	2	60
Coker 9543	68.7	57.7	60.3	60.4	10.3	30	4	54
Coker 9663 (L900819)	**74.5***			62.7	11.3	34	3	37
Coker 9803	62.6	50.7	53.6	62.5	10.5	30	3	34
Ernie	70.9	54.2	60.8	59.6	10.3	29	4	44
Featherstone 520	63.2			60.5	10.7	32	3	32
FFR 522W	68.5			61.6	10.9	31	3	44
FFR 525W	**75.3***	54.2	60.0	60.7	10.2	33	5	35
FFR 558W	73.6	57.3		61.2	10.9	35	4	48
GA-Dozier	62.1			57.7	10.0	30	4	40
Hazen	60.1			61.2	9.9	31	2	31
HBR 3020 (NeCo EX-3020)	**77.8***	57.5		57.6	10.1	34	3	45
HBR 4010 (MPG EX782)	**74.9***	57.2		57.1	10.1	34	3	41
HBR 4020 (NeCo EX-4020)	72.4	55.4		63.2	11.5	35	4	59
Heartland E-23	72.1	53.3		59.4	10.2	32	4	59
Howell	73.9	55.1	58.0	62.6	10.5	37	3	52
Jackson	64.0	57.2	66.1	59.9	10.5	33	4	37
Jaypee (AR26158-4)	44.3			61.7	11.1	30	3	17
Karl 92, hard check	62.6	48.0	52.5	61.1	10.3	30	5	62
LG Seeds JMS 104	**74.8***			63.3	11.4	33	4	54
LG Seeds JMS 105	69.0			58.1	10.1	34	4	43
Madison	65.6	55.6	65.8	58.6	10.2	32	4	47
Merschman Barbie IV	72.6	52.5	59.5	58.3	9.9	34	4	61
Merschman Bintee VI	**79.0***			61.7	10.8	34	3	45
Merschman Genie VI	73.3	**59.9***	59.9	56.9	10.2	35	3	46
Merschman Julie IV	65.5			61.8	10.7	33	3	39
Merschman Katie VIII	**74.6***			61.5	10.9	33	3	36
Merschman Millie II	72.1			60.3	10.6	34	4	47
MFA Commander II	73.1			61.9	11.0	33	3	36

MFA Enterprise	**76.8***	56.4	57.6	63.6	11.3	35	3	46
MFA Fury (EXP 1540)	70.9			60.3	10.3	34	4	44
MO12258	65.8	51.8	60.3	60.4	10.3	31	2	37
MO92-599	72.8	58.0		61.3	10.4	32	4	36
MO94-082	64.0			62.0	10.5	32	4	33
NeCo S88	73.5			58.3	10.0	33	4	51
NeCo S95	71.6			56.8	10.1	34	4	43
NeCo S98 (MPG EX042)	74.2	52.0		63.1	11.3	34	3	65
OH526	63.9			59.9	10.5	33	2	34
Patterson	72.1	52.4		59.4	10.2	32	3	53
Pioneer variety 2540	**77.9***			61.5	10.0	33	3	72
Pioneer variety 2548	68.6	58.1	63.3	60.6	10.5	31	2	28
Pioneer variety 2552	**78.2***	**65.1****	**73.3****	61.8	10.5	34	2	68
Pioneer variety 2568	**82.7****			59.5	10.2	33	3	67
Pioneer variety 2571	66.3	55.0	62.1	59.9	10.3	31	2	56
Stine 479	**76.7***			61.9	10.9	33	3	43
Stine 480	73.5			59.9	10.5	33	3	41
Stine 484	71.2			61.8	10.6	34	5	46
Stine 501	70.8	**60.8***		56.6	10.2	34	3	44
Terra Exp 211	66.7			59.1	10.3	32	5	61
Terra SR204	74.2	58.1	62.8	63.0	11.4	34	3	58
Terra SR205	73.0	55.8	64.7	58.2	10.0	34	4	62
Terral TV 8555	64.9			58.7	9.9	31	2	36
Terral TV 8825	64.0			58.5	13.8	35	3	31
VA93-52-60	57.8			58.3	10.4	30	3	28
Wakefield	68.5	50.2	58.5	59.9	10.9	35	3	34
Average	70.2	55.3	60.6	60.4	10.5	33	3	46
LSD (p=0.05)	8.3	5.9	6.7	1.3	0.7	1.9	1.5	15.9
CV%	8.4	10.9	13.7	1.5	4.5	4.1	32.8	24.9

1/ Yields are based on 60 pound per bushel test weight adjusted to 13.0 percent moisture content.
2/ Lodging scores of 0 to 9 represent none to total lodging, respectively.
3/ Derived from stand counts recorded during March, 1996.
** Indicates highest yielding variety within a column.
* Indicates varieties yielding equal to highest yielding variety within a column based on Fisher's protected LSD (p=0.05).

Table 10. Performance of soft red winter wheats tested near Portageville, Missouri during 1996. Varieties listed alphabetically.

Variety	Grain Yield 1/ 1996	Grain Yield 1/ 1995-96	Grain Yield 1/ 1994-96	Test Weight	Grain Moisture	Plant Height	Lodging 2/	Winter Survival 3/	Heading Date Julian	Heading Date Calendar
	---------- bushels/acre ----------			-lb/bu-	-%-	-inches-	0-9	-%-		
AG 410	64.0			56.7	13.7	30	2	35	129	May 9
AGRIPRO Clemens	69.0	61.7	65.1	57.6	14.1	36	4	58	130	May 10
AGRIPRO Elkhart	67.3	58.7		57.7	13.0	36	2	47	125	May 5
AGRIPRO Foster	65.7			57.7	14.1	32	3	49	129	May 9
AGRIPRO Hickory	56.1	53.2	59.3	57.6	13.5	33	4	37	126	May 6
AGRIPRO Mason (91D-2308)	62.7			57.5	13.3	32	3	45	124	May 4
AGRIPRO Pontiac	68.7	55.2	59.8	58.8	13.9	35	2	46	131	May 11
AGRIPRO Shiloh	71.4	**64.2***		57.4	12.7	33	5	74	124	May 4
Cardinal	66.1	55.5	60.1	56.6	13.6	37	3	44	130	May 10
Coker 9474	68.5	58.5	61.2	59.7	14.1	32	3	52	125	May 5
Coker 9543	75.6	61.0	64.9	60.0	13.3	32	6	63	124	May 4
Coker 9663 (L900819)	64.6			58.5	14.5	34	4	37	128	May 8
Coker 9803	49.6	52.6	56.2	59.9	13.1	30	6	36	125	May 5
Ernie	63.2	49.7	58.0	57.2	13.0	31	6	48	124	May 4
Featherstone 520	61.6			59.3	13.2	32	6	38	127	May 7
FFR 522W	64.5			60.3	14.5	33	4	39	126	May 6
FFR 525W	63.6	55.6	61.8	58.3	13.0	34	5	43	125	May 5
FFR 558W	70.4	61.4		58.2	13.8	36	4	62	126	May 6
GA-Dozier	54.0			57.0	13.0	32	4	48	125	May 5
Hazen	55.2			58.0	13.5	31	3	32	130	May 10
HBR 3020 (NeCo EX-3020)	74.1	61.6		55.2	12.9	35	3	44	129	May 9
HBR 4010 (MPG EX782)	66.3	58.8		54.6	14.0	33	3	38	132	May 12
HBR 4020 (NeCo EX-4020)	66.9	61.1		59.5	15.2	35	3	59	128	May 8
Heartland E-23	63.1	57.5		57.6	13.4	33	4	42	126	May 6
Howell	63.9	51.8	56.2	59.7	14.6	37	3	47	131	May 11
Jackson	57.4	53.7	58.2	57.8	13.5	34	5	39	128	May 8
Jaypee (AR26158-4)	32.9			59.7	13.5	29	6	13	129	May 9
Karl 92, hard check	66.6	55.6	58.6	59.6	13.1	33	6	74	123	May 3
LG Seeds JMS 104	70.9			59.9	14.9	34	3	44	128	May 8
LG Seeds JMS 105	70.1			54.7	12.7	34	3	46	128	May 8
Madison	71.3	60.0	63.7	57.3	13.1	33	5	52	126	May 6
Merschman Barbie IV	68.9	60.6	62.3	55.3	13.2	35	3	42	129	May 9
Merschman Bintee VI	67.5			58.5	13.9	34	3	53	124	May 4
Merschman Genie VI	71.5	**64.8***	64.8	54.3	14.4	33	3	37	133	May 13
Merschman Julie IV	72.5			59.2	13.8	34	5	44	126	May 6
Merschman Katie VIII	69.0			58.9	13.7	34	3	52	124	May 4
Merschman Millie II	71.0			57.5	13.5	35	5	61	122	May 2
MFA Commander II	74.4			58.7	13.7	34	3	51	124	May 4

MFA Enterprise	66.5	57.8	63.1	60.0	14.9	35	3	40	128	May 8
MFA Fury (EXP 1540)	63.0			55.9	13.2	34	3	44	124	May 4
MO12258	65.6	53.0	60.4	58.1	13.5	31	7	39	125	May 5
MO92-599	64.2	57.3		57.2	13.1	33	5	41	125	May 5
MO94-082	54.8			59.9	13.7	33	5	29	129	May 9
NeCo S88	69.3			55.6	13.0	33	2	44	129	May 9
NeCo S95	64.2			53.9	14.1	32	2	39	131	May 11
NeCo S98 (MPG EX042)	75.8	62.7		60.2	14.8	35	2	57	127	May 7
OH526	67.7			57.6	13.4	34	3	51	125	May 5
Patterson	66.9	56.5		57.9	13.3	33	4	48	125	May 5
Pioneer variety 2540	**87.7****			56.6	13.0	35	2	65	127	May 7
Pioneer variety 2548	65.7	58.0	64.1	57.8	13.0	31	3	35	130	May 10
Pioneer variety 2552	79.9	**69.0****	**73.5****	58.7	13.3	32	3	73	124	May 4
Pioneer variety 2568	**84.1***			57.2	13.2	33	3	70	123	May 3
Pioneer variety 2571	70.5	63.4	67.2	57.7	14.9	33	3	45	124	May 4
Stine 479	74.3			58.8	13.8	34	3	51	123	May 3
Stine 480	70.0			57.5	13.4	34	3	40	126	May 6
Stine 484	66.6			59.0	14.1	34	4	46	126	May 6
Stine 501	68.2	**65.2***		54.6	14.1	33	3	43	133	May 13
Terra Exp 211	65.4			57.2	13.6	32	4	45	126	May 6
Terra SR204	71.9	63.1	67.1	59.9	14.9	35	2	47	128	May 8
Terra SR205	65.4	56.1	61.4	54.9	12.6	34	3	50	128	May 8
Terral TV 8555	63.4			57.7	13.4	31	3	40	127	May 7
Terral TV 8825	52.9			59.0	14.0	33	4	32	132	May 12
VA93-52-60	55.3			57.9	13.4	32	5	33	127	May 7
Wakefield	65.0	53.4	63.0	57.6	14.3	34	4	41	130	May 10
Average	66.3	58.5	62.1	57.8	13.7	33	4	46	127	May 7
LSD (p=0.05)	7.0	5.5	4.8	1.2	0.6	1.6	1.1	9.8	1.2	
CV%	7.6	9.5	9.6	1.4	3.0	3.4	21.2	15.3	0.7	

1/ Yields are based on 60 pound per bushel test weight adjusted to 13.0 percent moisture content.
2/ Lodging scores of 0 to 9 represent none to total lodging, respectively.
3/ Derived from stand counts recorded during March, 1996.
** Indicates highest yielding variety within a column.
* Indicates varieties yielding equal to highest yielding variety within a column based on Fisher's protected LSD (p=0.05).

Table 11. Performance of soft red winter wheats tested near Lamar, Missouri during 1996. Varieties listed alphabetically.

Variety	Grain Yield 1/ 1996	Grain Yield 1/ 1995-96	Grain Yield 1/ 1994-96	Test Weight	Grain Moisture	Plant Height	Lodging 2/	Winter Survival 3/	Scab 4/ Incidence	Scab 4/ Severity
	bushels/acre			-lb/bu-	-%-	-inches-	0-9	-%-	0-9	0-9
AG 410	51.4			53.4	10.5	26	1	70	1	3
AGRIPRO Clemens	54.1	**50.0***	**55.0***	55.9	11.5	31	2	82	3	7
AGRIPRO Elkhart	56.4	**48.0***		57.1	10.7	29	1	75	3	7
AGRIPRO Foster	50.8			55.4	10.8	28	1	60	2	5
AGRIPRO Hickory	50.9	43.2	51.2	54.5	11.0	29	2	69	4	6
AGRIPRO Mason (91D-2308)	52.6			54.8	10.5	28	2	48	1	6
AGRIPRO Pontiac	54.4	**49.4***	**53.2***	57.0	10.4	29	1	80	3	4
AGRIPRO Shiloh	**58.0***	**48.2***		54.1	10.2	28	1	73	4	8
Cardinal	52.4	45.4	50.6	56.4	10.9	33	1	68	1	6
Coker 9474	**57.7***	**48.3***	**53.1***	60.2	11.0	25	1	89	2	4
Coker 9543	47.4	44.5	42.8	55.2	10.6	26	2	60	3	5
Coker 9663 (L900819)	50.2			59.3	11.6	30	1	66	2	6
Coker 9803	33.7	37.8	43.7	55.4	10.7	24	1	33	2	5
Ernie	45.0	46.3	**52.4***	57.0	10.5	24	2	64	1	3
Featherstone 520	40.6			54.3	10.6	26	1	38	2	6
FFR 522W	48.3			57.9	11.1	26	2	64	4	7
FFR 525W	46.0	45.4	**51.4***	56.1	10.4	28	1	43	3	5
FFR 558W	**66.2****	**52.8****		59.0	11.3	29	1	81	3	6
GA-Dozier	43.6			55.6	10.3	25	1	57	2	4
Hazen	33.5			55.0	10.6	27	1	44	1	5
HBR 3020 (NeCo EX-3020)	49.7	42.2		53.8	10.5	28	1	74	2	5
HBR 4010 (MPG EX782)	49.6	**47.4***		52.6	10.1	29	2	64	3	7
HBR 4020 (NeCo EX-4020)	**60.9***	**47.1***		58.9	11.9	29	2	86	3	6
Heartland E-23	53.6	45.0		53.7	10.4	27	2	76	5	8
Howell	**59.9***	45.9	47.5	60.7	11.3	32	2	82	3	7
Jackson	34.9	35.7	39.0	50.3	10.3	27	1	41	2	4
Jaypee (AR26158-4)	33.6			54.3	10.9	27	2	40	1	4
Karl 92, hard check	46.9	39.2	41.3	59.9	10.8	26	4	90	2	3
LG Seeds JMS 104	**57.7***			60.1	12.1	29	2	87	2	5
LG Seeds JMS 105	52.4			57.2	10.6	28	1	73	3	6
Madison	48.8	45.6	53.6*	56.1	10.4	29	2	70	5	8
Merschman Barbie IV	55.0	46.4	50.2	54.9	10.6	29	1	73	2	6
Merschman Bintee VI	**57.6***			57.5	11.1	29	1	46	2	5
Merschman Genie VI	55.7	**49.6***	49.6	51.4	10.1	28	2	66	3	6
Merschman Julie IV	51.6			57.6	11.1	28	2	60	4	7
Merschman Katie VIII	50.7			57.9	11.2	28	1	52	2	5
Merschman Millie II	51.0			56.9	10.8	28	3	58	4	7
MFA Commander II	54.8			58.2	11.4	28	1	53	2	5

MFA Enterprise	**57.5***	45.8	49.6	58.9	11.8	28	2	76	2	5
MFA Fury (EXP 1540)	50.7			55.5	10.3	29	1	67	3	5
MO12258	43.4	41.7	49.3	55.8	10.7	26	0	54	3	6
MO92-599	45.1	45.4		54.4	10.4	27	1	43	3	7
MO94-082	41.9			55.6	10.6	28	1	44	1	3
NeCo S88	50.6			56.0	10.7	29	1	67	2	5
NeCo S95	51.2			50.3	10.2	29	2	63	3	6
NeCo S98 (MPG EX042)	**56.9***	44.8		58.9	12.0	30	2	95	3	7
OH526	42.2			53.8	11.0	27	1	47	1	4
Patterson	53.5	43.3		57.5	10.6	27	1	86	1	3
Pioneer variety 2540	**56.8***			57.1	10.4	28	1	79	3	7
Pioneer variety 2548	54.8	**50.0***	**51.7***	57.0	10.5	27	2	75	2	6
Pioneer variety 2552	**56.9***	**50.1***	**55.8****	59.6	11.0	27	1	71	3	5
Pioneer variety 2568	52.8			54.2	10.5	26	1	65	4	7
Pioneer variety 2571	**57.9***	**49.5***	50.7	57.7	10.7	27	2	78	2	5
Stine 479	54.4			58.4	11.2	28	1	52	2	5
Stine 480	49.9			56.9	11.0	28	1	68	2	5
Stine 484	51.4			56.7	11.2	28	2	65	3	6
Stine 501	52.2	**48.9***		49.7	10.1	28	2	56	2	7
Terra Exp 211	54.4			55.4	10.5	27	2	76	4	7
Terra SR204	51.7	42.3	47.0	57.6	11.8	28	2	79	2	5
Terra SR205	49.0	44.4	50.3	55.4	10.5	29	1	78	3	7
Terral TV 8555	49.5			51.6	10.3	26	1	50	2	6
Terral TV 8825	40.7			50.8	10.9	29	1	36	0	0
VA93-52-60	39.0			49.3	10.0	25	1	51	5	8
Wakefield	50.6	46.7	**52.5***	55.3	11.2	30	1	47	1	4
Average	50.5	45.8	49.6	55.8	10.8	28	1	64	2	6
LSD (p=0.05)	9.4	5.8	4.5	3.6	0.4	2.0	1.0	10.1	1.0	2.0
CV%	13.4	12.8	11.3	4.6	2.4	4.0	41.0	11.2	37.0	22.0

1/ Yields are based on 60 pound per bushel test weight adjusted to 13.0 percent moisture content.
2/ Lodging scores of 0 to 9 represent none to total lodging, respectively.
3/ Derived from stand counts recorded during March, 1996.
4/ Scab scores of 0 to 9 represent zero to complete infection by *Fusarium spp.*, respectively. Incidence is an estimate of the number of heads infected in approximately 10 percent increments. Severity estimates the number of diseased spikelets within infected heads in approximately 10 percent increments.
** Indicates highest yielding variety within a column.
* Indicates varieties yielding equal to highest yielding variety within a column based on Fisher's protected LSD (p=0.05).

Table 12. Performance of soft red winter wheats tested near Mount Vernon, Missouri during 1996. Varieties listed alphabetically.

Variety	Grain Yield 1/ 1996	Grain Yield 1/ 1995-96	Grain Yield 1/ 1994-96	Test Weight	Grain Moisture	Plant Height	Lodging 2/	Winter Survival 3/	Heading Date Julian	Heading Date Calendar	Scab 4/ Incidence	Scab 4/ Severity
	-------- bushels/acre--------			-lb/bu-	-%-	-inches-	0-9	-%-			0-9	0-9
AG 410	47.4			51.5	11.8	28	3	35	135	May 15	0	1
AGRIPRO Clemens	**70.7***	**54.6***	**58.1****	57.7	12.9	34	4	89	132	May 12	2	5
AGRIPRO Elkhart	59.8	**55.1****		59.8	12.3	30	3	49	131	May 11	1	6
AGRIPRO Foster	**63.9***			57.4	12.4	30	4	55	135	May 15	1	3
AGRIPRO Hickory	44.2	41.6	47.3	55.6	12.6	29	4	23	132	May 12	2	4
AGRIPRO Mason (91D-2308)	36.4			54.5	12.6	29	3	23	134	May 14	1	3
AGRIPRO Pontiac	54.3	42.7	45.0	58.2	12.6	30	4	61	134	May 14	0	1
AGRIPRO Shiloh	57.1	46.5		56.1	12.3	31	3	57	133	May 13	2	5
Cardinal	58.7	45.3	47.5	57.0	12.2	36	5	81	135	May 15	1	2
Coker 9474	62.4	48.3	50.5	59.4	12.7	27	3	85	130	May 10	1	3
Coker 9543	45.1	41.3	37.4	55.6	12.7	27	5	33	134	May 14	1	3
Coker 9663 (L900819)	62.1			59.9	13.1	31	4	42	135	May 15	1	2
Coker 9803	23.0	34.6	35.2	52.8	14.9	26	2	11	137	May 17	1	3
Ernie	45.6	41.9	47.0	57.1	13.4	27	4	32	132	May 12	1	3
Featherstone 520	28.6			54.4	12.2	30	4	21	137	May 17	1	5
FFR 522W	52.0			56.8	13.4	28	4	34	132	May 12	1	5
FFR 525W	38.4	40.2	47.6	55.5	12.9	29	4	25	135	May 15	1	2
FFR 558W	**66.5***	48.9		59.2	13.1	32	4	55	135	May 15	1	3
GA-Dozier	30.3			55.0	12.6	25	2	13	137	May 17	1	3
Hazen	34.5			55.6	13.3	28	2	17	137	May 17	1	2
HBR 3020 (NeCo EX-3020)	54.7	44.0		55.7	12.5	30	4	43	134	May 14	1	4
HBR 4010 (MPG EX782)	56.9	47.6		53.2	12.4	31	3	38	136	May 16	1	4
HBR 4020 (NeCo EX-4020)	63.0	46.3		58.9	14.0	32	5	88	132	May 12	1	4
Heartland E-23	55.3	45.7		55.9	12.5	28	7	67	130	May 10	3	6
Howell	**66.3***	46.5	47.6	59.9	12.6	33	3	95	130	May 10	1	2
Jackson	18.9	28.2	37.1	52.5	12.8	28	2	7	137	May 17	0	1
Jaypee (AR26158-4)	15.0			50.9	14.6	25	2	9	137	May 17	0	0
Karl 92, hard check	50.4	39.5	42.2	58.2	12.4	27	7	79	127	May 7	1	1
LG Seeds JMS 104	**66.5***			57.6	13.6	31	5	82	133	May 13	1	3
LG Seeds JMS 105	54.6			55.9	12.3	29	5	60	132	May 12	1	5
Madison	55.3	45.8	48.2	56.6	13.3	30	5	42	134	May 14	2	5
Merschman Barbie IV	54.7	45.1	46.8	55.6	12.3	31	4	61	133	May 13	1	5
Merschman Bintee VI	43.4			56.6	12.9	30	3	21	136	May 16	0	0
Merschman Genie VI	**64.5***	**53.8***	53.8	54.5	12.4	31	4	53	135	May 15	1	2
Merschman Julie IV	50.9			57.6	12.6	30	5	36	132	May 12	1	4
Merschman Katie VIII	28.5			56.6	13.4	30	2	17	137	May 17	0	2
Merschman Millie II	46.1			56.1	12.5	30	6	35	131	May 11	2	5
MFA Commander II	41.6			58.3	13.5	28	3	19	136	May 16	0	0

MFA Enterprise	61.8	46.0	49.8	59.6	13.7	32	5	65	135	May 15	1	5
MFA Fury (EXP 1540)	51.1			56.7	12.7	30	5	30	134	May 14	1	3
MO12258	39.1	36.6	43.9	55.7	13.4	27	2	22	133	May 13	1	4
MO92-599	35.5	41.7		53.4	13.0	29	3	19	135	May 15	1	3
MO94-082	24.4			54.2	13.4	29	2	16	136	May 16	0	0
NeCo S88	52.6			55.5	12.7	31	4	48	134	May 14	1	4
NeCo S95	60.5			53.5	12.3	31	4	46	134	May 14	1	4
NeCo S98 (MPG EX042)	**64.4***	48.9		60.3	13.4	31	5	90	133	May 13	1	4
OH526	23.6			50.2	14.2	28	1	16	137	May 17	1	1
Patterson	50.9	40.4		55.9	12.8	31	4	66	130	May 10	2	6
Pioneer variety 2540	**70.8****			57.7	11.8	30	4	84	131	May 11	1	6
Pioneer variety 2548	48.8	45.8	46.0	55.7	12.3	28	3	37	136	May 16	0	1
Pioneer variety 2552	**64.3***	**50.8***	**55.1***	59.0	12.5	30	3	45	133	May 13	1	4
Pioneer variety 2568	54.2			57.1	11.9	29	4	40	132	May 12	1	6
Pioneer variety 2571	61.5	49.7	49.6	58.1	12.7	29	5	68	130	May 10	1	5
Stine 479	37.8			57.6	12.9	30	3	24	136	May 16	0	0
Stine 480	56.9			56.6	12.6	31	4	36	134	May 14	1	5
Stine 484	51.1			58.4	13.3	31	3	31	134	May 14	1	4
Stine 501	**63.9***	**52.1***		54.0	12.3	31	4	48	135	May 15	1	5
Terra Exp 211	52.5			55.2	12.9	30	6	50	131	May 11	2	4
Terra SR204	58.3	44.0	47.7	58.9	13.7	32	5	69	134	May 14	1	3
Terra SR205	55.4	45.7	45.2	54.8	12.3	30	4	60	132	May 12	1	5
Terral TV 8555	29.6			52.4	12.6	26	2	11	139	May 19	1	2
Terral TV 8825	20.8			51.8	14.6	29	2	9	142	May 22	0	0
VA93-52-60	33.6			54.5	12.5	27	3	23	135	May 15	1	5
Wakefield	30.4	32.6	44.7	52.6	13.2	31	3	16	141	May 21	0	0
Average	48.8	44.6	46.3	56.1	12.9	30	4	43	135	May 15	1	3
LSD (p=0.05)	7.5	4.5	3.9	2.8	1.0	1.7	1.1	13.8	2.4		0.7	2.5
CV%	11.1	10.1	10.5	3.6	5.5	4	21.6	23.0	1.2		62.3	57.3

1/ Yields are based on 60 pound per bushel test weight adjusted to 13.0 percent moisture content.
2/ Lodging scores of 0 to 9 represent none to total lodging, respectively.
3/ Derived from stand counts recorded during March, 1996.
4/ Scab scores of 0 to 9 represent zero to complete infection by *Fusarium spp.*, respectively. Incidence is an estimate of the number of heads infected in approximately 10 percent increments. Severity estimates the number of diseased spikelets within infected heads in approximately 10 percent increments.
** Indicates highest yielding variety within a column.
* Indicates varieties yielding equal to highest yielding variety within a column based on Fisher's protected LSD (p=0.05).

Table 13. Grain yields[1/] of soft red winter wheats tested across the northern (Columbia, Novelty and Trenton), southeastern (Charleston and Portageville) and southwestern (Lamar and Mt. Vernon) regions of Missouri during 1996. Varieties listed alphabetically.

Variety	Northern Region			Southeastern Region			Southwestern Region			1996 State Average
	1996	1995-96	1994-96	1996	1995-96	1994-96	1996	1995-96	1994-96	
	bushels/acre									
AG 410	30.3			63.8			49.4			45.9
AGRIPRO Clemens	**48.8***	49.6	55.0	66.7	58.5	62.4	**62.4***	**52.3****	**56.6****	**58.1***
AGRIPRO Elkhart	45.6	45.3		68.3	57.8		58.1	**51.5***		56.1
AGRIPRO Foster	37.5			70.0			57.4			53.0
AGRIPRO Hickory	19.5	35.1	47.3	58.3	52.1	57.6	47.5	42.4	49.2	39.3
AGRIPRO Mason (91D-2308)	30.5			66.6			44.5			45.3
AGRIPRO Pontiac	**48.1***	49.3	54.9	65.0	53.8	58.4	54.4	46.1	49.1	55.0
AGRIPRO Shiloh	44.1	43.5		67.5	58.8		57.5	47.4		55.0
Cardinal	42.2	47.7	51.7	69.2	55.7	62.3	55.5	45.3	49.1	54.1
Coker 9474	**53.7***	**52.0***	**56.8***	69.2	57.0	58.8	**60.0***	48.3	51.8	**60.2***
Coker 9543	29.0	41.3	44.7	70.0	59.3	62.6	46.2	42.9	40.1	46.3
Coker 9663 (L900819)	38.7			70.4			56.1			53.2
Coker 9803	7.1	30.9	35.9	54.4	51.7	54.9	28.4	36.2	39.5	27.4
Ernie	38.8	49.1	**56.9***	63.0	51.9	59.4	45.3	44.1	49.7	47.9
Featherstone 520	17.8			59.2			34.6			35.1
FFR 522W	23.5			64.3			50.1			43.5
FFR 525W	21.5	39.3	51.6	65.3	54.9	60.9	42.2	42.8	49.5	40.6
FFR 558W	46.3	49.1		70.4	59.4		**66.3****	**50.8***		**59.4***
GA-Dozier	24.5			55.3			36.9			37.3
Hazen	9.8			55.6			34.0			30.6
HBR 3020 (NeCo EX-3020)	40.1	43.5		73.4	59.5		52.2	43.1		53.6
HBR 4010 (MPG EX782)	36.2	46.1		67.6	58.0		53.3	47.5		50.6
HBR 4020 (NeCo EX-4020)	**53.8***	**50.8***		69.7	58.2		**62.0***	46.7		**60.9***
Heartland E-23	44.6	48.7		65.4	55.4		54.5	45.3		53.7
Howell	**53.3***	**50.6***	54.5	67.9	53.5	57.1	**63.1***	46.2	47.5	**60.5***
Jackson	16.7	36.6	45.9	57.9	55.5	62.1	26.9	31.9	38.1	31.9
Jaypee (AR26158-4)	4.7			36.8			24.3			20.0
Karl 92, hard check	**50.8***	47.3	51.1	61.0	51.8	55.6	48.6	39.3	41.8	53.2
LG Seeds JMS 104	**48.1***			70.0			**62.1***			**58.8***
LG Seeds JMS 105	43.3			66.6			53.5			53.2
Madison	29.1	41.6	49.3	67.6	57.8	64.7	52.1	46.7	50.9	47.3
Merschman Barbie IV	**48.1***	**49.9***	**56.4***	66.7	56.6	60.8	54.8	45.8	48.5	55.6
Merschman Bintee VI	35.7			71.4			50.5			50.7
Merschman Genie VI	37.8	44.2		70.4	62.4		**60.1***	**51.7***		54.1
Merschman Julie IV	36.0			65.7			51.2			49.3
Merschman Katie VIII	36.3			70.5			39.6			47.4
Merschman Millie II	42.0			69.6			48.5			52.1
MFA Commander II	36.1			69.8			48.2			49.7

MFA Enterprise	42.0	44.0	51.2	70.5	57.1	60.3	**59.6***	45.9	49.7	55.7
MFA Fury (EXP 1540)	30.3			63.7			50.9			46.3
MO12258	26.1	40.6	50.4	62.8	52.4	60.3	41.3	39.2	46.6	42.0
MO92-599	22.3	40.5		66.1	57.6		40.3	43.6		40.6
MO94-082	18.1			57.1			33.2			34.1
NeCo S88	45.7			69.3			51.6			54.5
NeCo S95	34.4			65.8			55.8			50.0
NeCo S98 (MPG EX042)	**51.5***	46.9		72.1	57.4		**60.7***	46.9		**60.3***
OH526	26.9			63.5			32.9			39.5
Patterson	42.7	44.6		67.0	54.4		52.2	41.9		52.7
Pioneer variety 2540	**56.8****			**83.0****			**63.8***			**66.7****
Pioneer variety 2548	40.2	48.0	55.1	64.7	58.0	63.7	51.8	47.9	48.8	50.9
Pioneer variety 2552	36.7	43.4	52.3	**80.0***	**67.1****	**73.4****	**60.6***	**50.4***	**55.4***	56.6
Pioneer variety 2568	40.3			**82.0***			53.5			56.6
Pioneer variety 2571	**54.9***	**53.8****	**58.1****	68.3	59.2	64.6	**59.7***	**49.6***	50.1	**60.3***
Stine 479	34.4			70.7			46.1			48.6
Stine 480	41.9			71.5			53.4			54.1
Stine 484	38.5			69.4			51.3			51.4
Stine 501	33.0	41.2		70.6	63.0		58.1	**50.5***		51.6
Terra Exp 211	43.4			65.3			53.4			52.9
Terra SR204	**48.5***	48.2	54.8	72.9	60.6	65.0	55.0	43.1	47.4	57.7
Terra SR205	43.2	47.8	**55.3***	64.0	55.9	63.1	52.2	45.0	47.7	52.0
Terral TV 8555	22.7			62.7			39.5			39.5
Terral TV 8825	13.0			57.0			30.8			31.3
VA93-52-60	17.5			56.5			36.4			34.7
Wakefield	21.3	37.2	46.5	61.4	51.8	60.8	40.5	39.7	48.6	38.9
Average	35.6	44.9	51.6	66.2	56.9	61.3	49.6	45.2	48.0	48.8
LSD (p=0.05)	9.3	3.9	2.9	7.3	4.0	4.1	8.0	3.6	3.0	8.7
CV%	31.2	14.8	12.0	11.2	10.2	11.8	16.4	11.6	10.9	33.5

1/ Yields are based on 60 pound per bushel test weight adjusted to 13.0 percent moisture content.

** Indicates highest yielding variety within a column.

* Indicates varieties yielding equal to highest yielding variety within a column based on Fisher's protected LSD (p=0.05).

Table 14. Grain yield[1/] for soft red winter wheats tested at seven locations in Missouri during 1996. Varieties listed by descending state average.

Variety	Northern Region			Southeastern Region		Southwestern Region		1996 State Average
	Columbia	Novelty	Trenton	Charleston	Portageville	Lamar	Mt. Vernon	
	bushels/acre							
Pioneer variety 2540	**65.2****	**47.1***	**57.4***	**77.9***	**87.7****	**56.8***	**70.8****	**66.7****
HBR 4020 (NeCo EX-4020)	**60.1***	**45.3***	**53.7***	72.4	66.9	**60.9***	63.0	**60.9***
Howell	**58.6***	**41.9***	**55.6***	73.9	63.9	**59.9***	**66.3***	**60.5***
NeCo S98 (MPG EX042)	**57.2***	**46.5***	44.1	74.2	75.8	**56.9***	**64.4***	**60.3***
Pioneer variety 2571	**59.1***	**47.9***	**59.5****	66.3	70.5	**57.9***	61.5	**60.3***
Coker 9474	**56.9***	**43.2***	**51.8***	**75.1***	68.5	**57.7***	62.4	**60.2***
FFR 558W	49.1	33.1	**57.9***	73.6	70.4	**66.2****	**66.5***	**59.4***
LG Seeds JMS 104	**60.3***	33.8	**52.0***	**74.8***	70.9	**57.7***	**66.5***	**58.8***
AGRIPRO Clemens	**56.8***	30.0	**53.7***	69.7	69.0	54.1	**70.7***	**58.1***
Terra SR204	**60.9***	**40.1***	45.7	74.2	71.9	51.7	58.3	57.7
Pioneer variety 2552	43.6	30.9	31.8	**78.2***	79.9	**56.9***	**64.3***	56.6
Pioneer variety 2568	46.8	33.0	38.4	**82.7****	**84.1***	52.8	54.2	56.6
AGRIPRO Elkhart	39.1	**42.0***	**54.0***	**74.7***	67.3	56.4	59.8	56.1
MFA Enterprise	53.4	28.2	44.1	**76.8***	66.5	**57.5***	61.8	55.7
Merschman Barbie IV	55.0	**48.0****	41.5	72.6	68.9	55.0	54.7	55.6
AGRIPRO Pontiac	47.9	**46.3***	**49.6***	71.5	68.7	54.4	54.3	55.0
AGRIPRO Shiloh	49.3	34.9	40.7	67.3	71.4	**58.0***	57.1	55.0
NeCo S88	50.8	**41.8***	45.1	73.5	69.3	50.6	52.6	54.5
Cardinal	49.7	28.3	44.6	**75.9***	66.1	52.4	58.7	54.1
Merschman Genie VI	38.1	25.9	43.2	73.3	71.5	55.7	**64.5***	54.1
Stine 480	47.4	30.5	42.9	73.5	70.0	49.9	56.9	54.1
Heartland E-23	44.8	**38.4***	**52.4***	72.1	63.1	53.6	55.3	53.7
HBR 3020 (NeCo EX-3020)	50.1	**41.7***	36.1	**77.8***	74.1	49.7	54.7	53.6
Coker 9663 (L900819)	34.3	**36.7***	46.1	**74.5***	64.6	50.2	62.1	53.2
Karl 92, hard check	52.4	**47.8***	**50.9***	62.6	66.6	46.9	50.4	53.2
LG Seeds JMS 105	52.0	**42.4***	37.7	69.0	70.1	52.4	54.6	53.2
AGRIPRO Foster	41.9	**36.8***	34.0	**74.8***	65.7	50.8	**63.9***	53.0
Terra Exp 211	37.6	33.9	**55.4***	66.7	65.4	54.4	52.5	52.9
Patterson	46.2	27.6	**57.8***	72.1	66.9	53.5	50.9	52.7
Merschman Millie II	46.3	35.1	40.9	72.1	71.0	51.0	46.1	52.1
Terra SR205	52.0	**39.1***	37.7	73.0	65.4	49.0	55.4	52.0
Stine 501	35.8	29.1	31.5	70.8	68.2	52.2	**63.9***	51.6
Stine 484	46.8	25.4	36.5	71.2	66.6	51.4	51.1	51.4
Pioneer variety 2548	35.3	34.1	**52.7***	68.6	65.7	54.8	48.8	50.9
Merschman Bintee VI	33.1	35.2	37.9	**79.0***	67.5	**57.6***	43.4	50.7
HBR 4010 (MPG EX782)	33.5	27.5	39.7	**74.9***	66.3	49.6	56.9	50.6
NeCo S95	37.1	27.4	36.8	71.6	64.2	51.2	60.5	50.0
MFA Commander II	22.6	**37.8***	**52.4***	73.1	74.4	54.8	41.6	49.7

Merschman Julie IV	37.8	27.6	40.7	65.5	72.5	51.6	50.9	49.3
Stine 479	30.4	25.8	43.7	**76.7***	74.3	54.4	37.8	48.6
Ernie	31.0	**37.8***	**47.4***	70.9	63.2	45.0	45.6	47.9
Merschman Katie VIII	25.2	27.6	46.3	**74.6***	69.0	50.7	28.5	47.4
Madison	31.5	28.4	28.6	65.6	71.3	48.8	55.3	47.3
Coker 9543	26.9	25.5	31.2	68.7	75.6	47.4	45.1	46.3
MFA Fury (EXP 1540)	40.0	26.4	22.6	70.9	63.0	50.7	51.1	46.3
AG 410	25.1	30.9	36.4	64.8	64.0	51.4	47.4	45.9
AGRIPRO Mason (91D-2308)	29.5	24.5	36.2	70.1	62.7	52.6	36.4	45.3
FFR 522W	29.3	13.1	30.1	68.5	64.5	48.3	52.0	43.5
MO12258	24.0	20.6	27.6	65.8	65.6	43.4	39.1	42.0
FFR 525W	17.1	29.5	22.3	**75.3***	63.6	46.0	38.4	40.6
MO92-599	14.0	26.1	30.0	72.8	64.2	45.1	35.5	40.6
OH526	14.6	25.6	40.2	63.9	67.7	42.2	23.6	39.5
Terral TV 8555	18.1	19.6	29.5	64.9	63.4	49.5	29.6	39.5
AGRIPRO Hickory	10.2	15.5	33.4	67.1	56.1	50.9	44.2	39.3
Wakefield	11.6	23.3	28.3	68.5	65.0	50.6	30.4	38.9
GA-Dozier	11.3	22.3	37.6	62.1	54.0	43.6	30.3	37.3
Featherstone 520	12.9	17.6	21.8	63.2	61.6	40.6	28.6	35.1
VA93-52-60	23.1	11.2	15.7	57.8	55.3	39.0	33.6	34.7
MO94-082	12.0	29.2	20.1	64.0	54.8	41.9	24.4	34.1
Jackson	11.4	15.3	20.8	64.0	57.4	34.9	18.9	31.9
Terral TV 8825	4.1	13.7	21.7	64.0	52.9	40.7	20.8	31.3
Hazen	4.5	9.8	13.7	60.1	55.2	33.5	34.5	30.6
Coker 9803	4.7	10.0	9.1	62.6	49.6	33.7	23.0	27.4
Jaypee (AR26158-4) †	-	7.2	5.6	44.3	32.9	33.6	15.0	20.0
Average	36.0	30.6	38.9	70.2	66.3	50.5	48.8	48.8
LSD (p=0.05)	8.6	12.4	12.3	8.3	7.0	9.4	7.5	8.7
CV%	17.2	25.1	22.7	8.4	7.6	13.4	11.1	33.5

1/ Yields are based on 60 pound per bushel test weight adjusted to 13.0 percent moisture content.
† Jaypee not harvested at Columbia in 1996 due to excessive winter injury and complete stand loss.
** Indicates highest yielding variety within a column.
* Indicates varieties yielding equal to highest yielding variety within a column based on Fisher's protected LSD (p=0.05).

Table 15. Performance of hard red winter wheats averaged across Columbia, Mount Vernon and Trenton locations in Missouri during 1996. Varieties listed alphabetically.

Variety	1/ Grain Yield	Test Weight	Grain Moisture	Plant Height	2/ Lodging	3/ Winter Survival	Heading Date Julian	Heading Date Calendar
	-bu/ac-	-lb/bu-	-%-	-inches-	0-9	-%-		
2137 (KS92P0263-137)	**55.6****	59.0	12.4	30	3	57	136	May 16
2163	**48.5***	55.4	12.5	29	3	53	136	May 16
HBR 7010	36.4	58.7	12.8	27	2	26	138	May 18
Jagger	27.6	53.9	12.8	28	2	17	139	May 19
Karl 92	**51.1***	58.8	12.3	29	5	61	136	May 16
Merschman Meggie VI	36.8	58.3	12.9	27	3	30	138	May 18
MFA EXP 1601	35.2	57.8	12.9	27	2	30	138	May 18
Average	41.6	57.4	12.7	28	3	39	137	May 17
LSD (p=0.05)	8.7	2.6	NS	1.6	1.4	16.6	NS	
CV%	25.7	5.7	8.7	6.8	59.4	52.2	4.5	
Location Years	3	3	3	3	3	3	2	

1/ Yields are based on 60 pound per bushel test weight adjusted to 13.0 percent moisture content.
2/ Lodging scores of 0 to 9 represent none to total lodging, respectively.
3/ Derived from stand counts recorded during March, 1996.
** Indicates highest yielding variety within a column.
* Indicates varieties yielding equal to highest yielding variety within a column based on Fisher's protected LSD (p=0.05).
NS Indicates no significant differences between varieties within a column.

Table 16. Performance of hard red winter wheats tested at Columbia, Missouri during 1996. Varieties listed alphabetically.

Variety	1/ Grain Yield	Test Weight	Grain Moisture	Plant Height	2/ Lodging	3/ Winter Survival	Heading Date Julian	Heading Date Calendar	4/ Septoria Leaf Blotch
	-bu/ac-	-lb/bu-	-%-	-inches-	0-9	-%-			-%-
2137 (KS92P0263-137)	**53.7****	59.3	12.7	30	4	59	142	May 22	31
2163	**47.2***	54.2	12.5	31	4	43	143	May 23	38
HBR 7010	30.6	57.6	13.4	27	3	20	145	May 25	30
Jagger	19.9	49.7	12.9	29	2	12	144	May 24	19
Karl 92	**51.7***	59.7	12.7	30	6	67	141	May 21	35
Merschman Meggie VI	31.6	56.2	13.8	27	3	22	144	May 24	22
MFA Exp 1601	31.9	57.0	13.6	27	3	25	144	May 24	23
Average	38.1	56.2	13.1	29	3	35	143	May 22	28
LSD (p=0.05)	11.5	3.1	NS	1.3	1.1	11.2	0.9		NS
CV%	20.5	3.7	6.5	3.2	21.1	21.6	0.4		35.4

1/ Yields are based on 60 pound per bushel test weight adjusted to 13.0 percent moisture content.
2/ Lodging scores of 0 to 9 represent none to total lodging, respectively.
3/ Derived from stand counts recorded during March, 1996.
4/ Percent of total foliage infected with Septoria leaf blotch (*Septoria tritici* syn. *Mycosphaerella graminicola*) under field conditions during the milk stage (Feeke's GS 11.1) of kernel development.
** Indicates highest yielding variety within a column.
* Indicates varieties yielding equal to highest yielding variety within a column based on Fisher's protected LSD (p=0.05).
NS Indicates no significant differences between varieties within a column.

Table 17. Performance of hard red winter wheats tested at Mount Vernon, Missouri during 1996. Varieties listed alphabetically.

Variety	1/ Grain Yield	Test Weight	Grain Moisture	Plant Height	2/ Lodging	3/ Winter Survival	Heading Date Julian	Heading Date Calendar	4/ Scab Incidence	4/ Scab Severity
	-bu/ac-	-lb/bu-	-%-	-inches-	0-9	-%-			0-9	0-9
2137 (KS92P0263-137)	**69.4****	61.7	11.5	32	5	89	130	May 10	3	6
2163	**62.7***	59.8	11.3	30	4	86	130	May 10	2	7
HBR 7010	46.9	61.9	11.5	28	4	40	132	May 12	0	0
Jagger	36.3	58.8	11.5	28	2	21	134	May 14	0	1
Karl 92	60.3	61.4	11.1	29	7	90	131	May 11	2	4
Merschman Meggie VI	44.3	61.5	11.4	28	5	51	132	May 12	0	1
MFA EXP 1601	42.7	60.6	11.5	28	4	41	132	May 12	1	3
Average	51.8	60.8	11.4	29	4	60	132	May 12	1	3
LSD (p=0.05)	9.0	1.9	NS	1.8	1.4	13.6	NS		1.3	2.1
CV%	11.8	2.1	1.8	4.2	22.3	15.6	1.5		79.4	49.9

1/ Yields are based on 60 pound per bushel test weight adjusted to 13.0 percent moisture content.
2/ Lodging scores of 0 to 9 represent none to total lodging, respectively.
3/ Derived from stand counts recorded during March, 1996.
4/ Scab scores of 0 to 9 represent zero to complete infection by *Fusarium spp.*, respectively. Incidence is an estimate of the number of heads infected in approximately 10 percent increments. Severity estimates the number of diseased spikelets within infected heads in approximately 10 percent increments.
** Indicates highest yielding variety within a column.
* Indicates varieties yielding equal to highest yielding variety within a column based on Fisher's protected LSD (p=0.05).
NS Indicates no significant differences between varieties within a column.

Table 18. Performance of hard red winter wheats tested at Trenton, Missouri during 1996. Varieties listed alphabetically.

Variety	1/ Grain Yield	Test Weight	Grain Moisture	Plant Height	2/ Lodging	3/ Winter Survival
	-bu/ac-	-lb/bu-	-%-	-inches-	0-9	-%-
2137 (KS92P0263-137)	43.7	55.9	13.1	29	0	22
2163	35.6	52.2	13.7	25	2	32
HBR 7010	31.7	56.7	13.5	26	1	18
Jagger	26.7	53.1	13.9	28	1	18
Karl 92	41.3	55.5	13.1	28	4	28
Merschman Meggie VI	34.4	57.3	13.7	27	1	18
MFA Exp 1601	31.0	55.8	13.7	27	0	24
Average	34.9	55.2	13.5	27	1	23
LSD (p=0.05)	NS	2.7	NS	NS	1.9	NS
CV%	22.5	3.4	3.0	8.5	110.5	32.8

1/ Yields are based on 60 pound per bushel test weight adjusted to 13.0 percent moisture content.
2/ Lodging scores of 0 to 9 represent none to total lodging, respectively.
3/ Derived from stand counts recorded during March, 1996.
** Indicates highest yielding variety within a column.
* Indicates varieties yielding equal to highest yielding variety within a column based on Fisher's protected LSD (p=0.05).
NS Indicates no significant differences between varieties within a column.

Table 19. Grain yield[1/] for hard red winter wheats tested at three locations in Missouri during 1996. Varieties listed by descending state average.

Variety	Columbia	Mt. Vernon	Trenton	1996 State Average
	bushels per acre			
2137 (KS92P0263-137)	**53.7****	**69.4****	43.7	**55.6****
Karl 92	**51.7***	60.3	41.3	**51.1***
2163	**47.2***	**62.7***	35.6	**48.5***
Merschman Meggie VI	31.6	44.3	34.4	36.8
HBR 7010	30.6	46.9	31.7	36.4
MFA Exp 1601	31.9	42.7	31.0	35.2
Jagger	19.9	36.3	26.7	27.6
Average	38.1	51.8	34.9	41.6
LSD (p=0.05)	11.5	9.0	NS	8.7
CV%	20.5	11.8	22.5	25.7

1/ Yields are based on 60 pound per bushel test weight adjusted to 13.0 percent moisture content.

** Indicates highest yielding variety within a column.

* Indicates varieties yielding equal to highest yielding variety within a column based on Fisher's protected LSD (p=0.05).

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