

# **WINTER WHEAT**

**Missouri Crop Performance**

**Part, McKendry, Kroening, Tague, Mattis**

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# 1997 MISSOURI WINTER WHEAT PERFORMANCE TESTS

K. D. Kephart, A. L. McKendry, M. K. Kroening, D. N. Tague and R. E. Mattis

## 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 soft red winter wheat and hard red winter wheat variety trials conducted throughout Missouri during the 1996-97 cropping season.

available for commercial production. 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 were submitted for testing on a fee basis by the developing company or sponsors. Condition of the seed lot (vigor, viability, seed treatment, etc.) for each entry used in these tests was the responsibility of the company or organization sponsoring that entry.

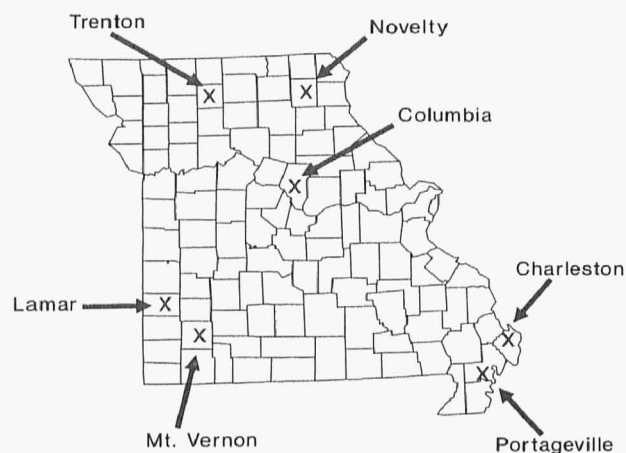


Fig. 1. Test locations for Missouri winter wheat performance tests conducted during 1997.

## 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 1997 and their seed sources are listed in Table 1. Sixty four soft red and four hard red winter wheats were tested. The soft red winter wheats submitted for testing were comprised of 6 public varieties, 3 public experimental entries and 55 proprietary varieties. The hard red winter wheats were comprised of 3 public and 1 proprietary varieties. Public varieties adapted to Missouri growing conditions or recommended by the state of origin were entered into the 1996-97 variety test under the sponsorship of the Missouri Seed Improvement Association. Numbered entries preceded by a state designation (e.g. MO94-173, VA93-52-60) were provided by the foundation seed organization or the wheat breeder of the originating state, and are experimental lines not yet

### Experimental Design and Seeding Methods

Each soft red winter wheat experiment was planted using a 8x8 lattice design with four replications. Except at the Trenton site, all test plots consisted of a 15 foot, 6-row plot with 7-inch row spacing. Plots at the Trenton site consisted of 15 foot, 9-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 83 to 135 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 six conventional double-disk openers. At the Trenton site, all entries were no-till seeded directly into soybean stubble using a plot drill equipped with nine 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 127 pounds per acre (Table 2).

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Table 1. Names and sources of commercial soft and hard red winter wheat cultivars tested in Missouri during 1996-97.

Variety	Source/Contact	Variety	Source/Contact
2137 <sup>†</sup> Cardinal <sup>†</sup> Ernie <sup>†</sup> Howell <sup>†</sup> Jackson <sup>†</sup> Jagger <sup>†</sup> Karl 92 <sup>†</sup> Madison <sup>†</sup> Wakefield <sup>†</sup>	<b>Missouri Seed Improvement Association</b> 3211 Lemone Industrial Blvd. Columbia, MO 65201-8245 (573) 449-0586	Merschman Barbie IV Merschman Genie VI Merschman Julie IV Merschman Katie IX Merschman Millie II	<b>Merschman Seeds, Inc.</b> 103 Ave. D West Point, IA 52656 (319) 837-6111
AGRIPRO Clemens AGRIPRO Elkhart AGRIPRO Foster AGRIPRO Pontiac AGRIPRO Shiloh	<b>Agripro Seeds, Inc.</b> 6025 W. 300 South Lafayette, IN 47905 (765) 572-2001	MFA 1800 MFA Commander II MFA Enterprise MFA Fury	<b>MFA Incorporated</b> 201 Ray Young Drive Columbia, MO 65201 (573) 876-5285
DK 9027 DK Tracker	<b>Delta King Seed Co.</b> P. O. Box 920 McCrary, AR 72101 (501) 731-5484	NeCo S80 NeCo S88 NeCo S95 NeCo S98	<b>NeCo Seed Farms, Inc.</b> P.O. Box 379 Garden City, MO 64747 (816) 862-8203
EK 102 EK 114	<b>Erwin Keith Inc.</b> Rt. 2, Box 275-A McCrary, AR 72101 (501) 731-2341	NK Coker 9474 NK Coker 9543 NK Coker 9663 NK Coker 9704 NK Coker 9803	<b>Norvartis Seeds, Inc.</b> 410 Woodbridge Rd. Somerville, TN 38068 (901) 465-4565
FFR 522W FFR 525W FFR 529W FFR 539W FFR 558W FFR EX 333 FFR EX 356	<b>FFR Cooperative, Inc.</b> P. O. Box 322 Battle Ground, IN 47920 (317) 567-2115	Pioneer <sup>®</sup> Variety 2540 Pioneer Variety 2568 Pioneer Variety 2571 Pioneer Variety 25R26 Pioneer Variety 25R57	<b>Pioneer Hi-Bred International Inc.</b> P.O. Box 1536 O'Fallon, IL 62269 (618) 624-8222
G2500	<b>Goertzen Seed Research</b> 14604 S. Haven Road Haven, KS 67543 (316) 465-2675	Stine 470 Stine 480 Stine 481	<b>Stine Seed Company</b> P. O. Box 231 Sheridan, IA 46069 (317) 758-0800
Lewis 8404	<b>Lewis Hybrids, Inc.</b> P. O. Box 38 Ursa, IL 62376 (217) 964-2131	Terra SR204 Terra SR205 Terra SR211	<b>Terra International, Inc.</b> P. O. Box 6000 Sioux City, IA 51102-6000 (712) 233-3609
LG Seeds JMS 104 LG Seeds JMS 105	<b>LG Seeds, Inc.</b> P. O. Box 950 Decatur, IL 62525 (217) 422-5621	Terral TV 8557 Terral TV 8768	<b>Terral-Norris Seed Co.</b> P. O. Box 826 Lake Providence, LA 71254 (800) 551-4852
		Willcross 723 Willcross 788 Willcross 795 Willcross 798 Willcross 7010	<b>MSDA</b> 4000 Dubin Ave. Columbia, MO 65203 (573) 445-3702

† Signifies public winter wheat cultivars.

### Agronomic Practices

Basic agronomic practices are given in Table 3 by location. Nitrogen was applied in split fall/spring applications. Spring nitrogen applications were generally made at or shortly after initial 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 or a similar private soil testing facility. At Charleston, all wheat was treated with 4 oz. of Tilt (*a.i.* propiconazole) fungicide 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

Table 2. Seed size of entries, adjusted seeding rates and seed treatments of seed lots used for establishing soft red winter and hard red winter wheat varieties during the fall of 1996. Use of seed treatment trade names does not imply endorsement or recommended use of such seed treatments by the Missouri Agricultural Experiment Station or University Extension.

Variety	1,000	Seeds	Adjusted	Seed Treatment(s)	Variety	1,000	Seeds	Adjusted	Seed Treatment(s)
	Kernel Weight	per Pound	Seeding Rate			Kernel Weight	per Pound	Seeding Rate	
	- g -	- no/lb -	- lb/acre -			- g -	- no/lb -	- lb/acre -	
<u>Soft Red Winter Wheats</u>									
AGRIPRO Clemens	35.7	12,717	118	Vitavax 200	NeCo S80	32.4	14,012	107	Dividend+Apron
AGRIPRO Elkhart	32.6	13,926	108	Vitavax 200	NeCo S88	30.3	14,983	100	Vitavax 200
AGRIPRO Foster	33.1	13,716	109	Vitavax 200	NeCo S95	39.5	11,494	131	Vitavax 200
AGRIPRO Pontiac	31.0	14,645	102	Vitavax 200	NeCo S98	31.3	14,505	103	Vitavax 200
AGRIPRO Shiloh	34.9	13,009	115	Vitavax 200	NK Coker 9474	36.8	12,337	122	Dividend+Apron+Reldan 4E
Cardinal	36.2	12,541	120	Raxil-Thiram+Reldan 4E	NK Coker 9543	31.2	14,551	103	Dividend+Apron+Reldan 4E
DK 9027	25.9	17,529	86	Unknown	NK Coker 9663	34.8	13,046	115	Dividend+Apron+Reldan 4E
DK Tracker	37.5	12,107	124	Unknown	NK Coker 9704 (L910097)	28.7	15,819	95	Dividend+Apron+Reldan 4E
EK 102	32.7	13,884	108	Untreated	NK Coker 9803	34.3	13,236	113	Dividend+Apron+Reldan 4E
EK 114	32.8	13,841	108	Untreated	Pioneer Variety 2540	38.0	11,947	126	Vitavax 34+Thiram 42S+Reldan 4E
Ernie	37.5	12,107	124	Raxil-Thiram+Reldan 4E	Pioneer Variety 2568	37.1	12,237	123	Vitavax 34+Thiram 42S+Reldan 4E
FFR 522W	37.0	12,270	122	Raxil-Thiram+Reldan 4E	Pioneer Variety 2571	31.8	14,277	105	Vitavax 34+Thiram 42S+Reldan 4E
FFR 525W	40.7	11,155	134	Vitavax 200	Pioneer Variety 25R26	39.1	11,611	129	Vitavax 34+Thiram 42S+Reldan 4E
FFR 529W (FFR EX 529)	29.7	15,286	98	Raxil-Thiram+Reldan 4E	Pioneer Variety 25R57	31.8	14,277	105	Vitavax 34+Thiram 42S+Reldan 4E
FFR 539W (FFR EX 539)	31.6	14,367	104	Raxil-Thiram+Reldan 4E	Pocahontas (VA93-52-60)	37.4	12,139	124	Raxil-Thiram
FFR 558W	33.6	13,512	111	Raxil-Thiram+Reldan 4E	Stine 470	27.4	16,569	91	Raxil-Thiram
FFR EX 333	38.1	11,916	126	Raxil-Thiram+Reldan 4E	Stine 480	33.4	13,593	110	Raxil-Thiram
FFR EX 356	31.4	14,459	104	Raxil-Thiram+Reldan 4E	Stine 481	27.9	16,272	92	Raxil-Thiram
G2500	34.3	13,236	113	RTU-Vitavax-Thiram	Terra SR204	32.5	13,969	107	Raxil-Thiram+Reldan 4E
Howell	29.1	15,601	96	Raxil-Thiram+Reldan 4E	Terra SR205	27.1	16,753	90	Raxil-Thiram+Reldan 4E
Jackson	33.1	13,716	109	Raxil-Thiram+Reldan 4E	Terra SR211	25.0	18,160	83	Raxil-Thiram+Reldan 4E
Lewis 8404	34.0	13,353	112	Dividend+Apron+Reldan 4E	Terral TV 8557	36.0	12,611	119	Vitavax 200
LG Seeds JMS 104	29.6	15,338	98	Raxil-Thiram	Terral TV 8768	32.3	14,056	107	Untreated
LG Seeds JMS 105	30.1	15,083	99	Raxil-Thiram	Wakefield	39.8	11,407	131	Raxil-Thiram+Reldan 4E
Madison	34.7	13,084	115	Raxil-Thiram+Reldan 4E	Willcross 723	26.0	17,462	86	Vitavax 200
Merschman Barbie IV	31.5	14,413	104	Raxil-Thiram	Willcross 788 (HBR 3020)	31.9	14,232	105	Vitavax 200
Merschman Genie VI	36.1	12,576	119	Raxil-Thiram	Willcross 795 (HBR 4010)	40.4	11,238	133	Vitavax 200
Merschman Julie IV	41.0	11,073	135	Raxil-Thiram	Willcross 798 (HBR 4020)	31.8	14,277	105	Vitavax 200
Merschman Katie IX	35.3	12,861	117	Raxil-Thiram					
Merschman Millie II	32.7	13,884	108	Raxil-Thiram					
MFA 1800 (MFA EXP 1800)	25.0	18,160	83	Raxil-Thiram	<u>Hard Red Winter Wheats</u>				
MFA Commander II	35.8	12,682	118	Raxil-Thiram	2137	38.5	11,792	127	Unknown
MFA Enterprise	29.1	15,601	96	Raxil-Thiram	Jagger	25.6	17,734	85	Untreated
MFA Fury	37.0	12,270	122	Raxil-Thiram	Karl 92	38.1	11,916	126	Unknown
MO94-173	34.0	13,353	112	Vitavax 200	Willcross 7010 (HBR 7010)	31.4	14,459	104	Vitavax 200
MO94-317	39.5	11,494	131	Vitavax 200					

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

standard bushel weight. In addition to yields obtained in 1997, two year averages (1996-97) are provided for both soft red and hard red winter wheat entries tested during previous cropping seasons. Three year averages (1995-97) also are provided for soft red winter wheat entries. 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 at crop maturity was rated at all test locations except Novelty in 1997. No lodging was observed at Novelty prior to harvest. 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 1997, major differences in winter survival among varieties were not noted at most locations. Substantial stand reductions during the winter at Portageville reflect poor soil drainage and waterlogging conditions rather than losses from subfreezing temperatures.

**Heading Date**

Heading was noted at Charleston, Columbia, Mount Vernon and Novelty 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**

Abnormally cool and dry weather during April, May and early June minimized the occurrence of wheat diseases during 1997. Few foliar disease problems were noted at the seven test locations. Late-season leaf rust (*Puccinia triticina*) did occur at most sites, but was not readily observed until most entries were near maturity. The incidence of leaf rust was recorded at the Trenton site during the hard dough stage (Feeke's GS 11.3) of kernel development (Tables 6 and 18).

**Statistical Analyses and Interpretation**

Data collected on all traits measured from the soft red winter wheats tested during 1997 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, an adjusted average of the remaining observations (least squares mean) 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

Table 3. Summary of agronomic practices used on wheat performance trials in Missouri during 1997. Fall nitrogen (N), phosphorus (P<sub>2</sub>O<sub>5</sub>) and potassium (K<sub>2</sub>O) were preplant applied and incorporated.

Location	Predominant Soil Type(s)	Previous Crop	1996 Planting Date	Fertility Management					1997 Harvest Date
				N			P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	
				Fall	Spring	Total			pounds per acre
<u>Northern</u>									
Columbia	Mexico silt loam	soybeans	Oct 2	35	90	125	42	28	Jul 3
Novelty	Putnam silt loam	soybeans	Oct 9	40	80	120	60	40	Jul 8
Trenton	Grundy silt loam	soybeans	Oct 16	36	90	126	-	-	Jul 10
<u>Southwest</u>									
Lamar	Parsons silt loam	soybeans	Oct 15	37	73	110	59	75	Jul 1
Mt. Vernon	Gerald silt loam	soybeans	Oct 15	40	80	120	40	40	Jun 30
<u>Southeast</u>									
Charleston <sup>1/</sup>	Sharkey silty clay loam	soybeans	Nov 4	18	96	114	46	60	Jun 23
Portageville	Tiptonville silt loam	soybeans	Nov 5	40	80	120	80	80	Jun 24

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

by each location and across all locations. The LSD is used to compare the performance of two specific varieties. 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.

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. 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. 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. Variety selection should be based on yield stability in a production environment over years and locations. Where a variety has been in the test for two or three years, combined analyses of the yield data over years are presented. 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.

### 1997 Test Conditions and Results

Field conditions that prevailed during 1997 were generally favorable for winter wheat growth and development, resulting in high yields and heavy test weights compared to those observed in Missouri for the past several years. Wet conditions and late maturation of spring planted rotation crops delayed planting at some locations. The delayed establishment and slow crop growth associated with the delayed planting and/or cool fall weather resulted in smaller plants and less foliage, reducing the opportunity for diseases such as powdery mildew (*Erysiphe graminis* f. sp. *tritici*), leaf blotch (*Mycosphaerella graminicola*), glume blotch (*Phaeosphaeria avenaria* f. sp. *triticea*) and/or tan spot (*Pyrenophora tritici-repentis*) to develop at most locations in the fall of 1996.

Winter survival ranged from 32 percent at Portageville to 96 percent at Mt. Vernon. Stand losses resulting from freezing injury and soil heaving were not as evident compared to conditions experienced the previous year, and were confined to the most northern locations of Novelty and Trenton. Substantial stand losses did occur at Portageville. Excessive rainfall during the winter months combined with poor field drainage resulted in water ponding across portions of the plot area for extended periods at the Portageville site. Much cooler and drier than normal weather from mid-April to early June occurred in all wheat growing regions of Missouri, encouraging spring tiller development. Conditions during the later half of this period were excellent for kernel development and extended the grain-filling period 7 to 10 days longer than normal throughout the state. Late-season development of leaf rust occurred at most locations, but all winter wheat entries had already achieved the hard dough stage of kernel development.

Favorable weather conditions that minimized foliar diseases and extended the grain-filling period, greatly enhanced yields compared to previous production seasons. The overall yield of the soft red winter wheats tested in 1997 was 71.1 bushels per acre (Table 5 and 14), the highest average yield attained by the Missouri Winter Wheat Performance Test program. This yield was 22.3 bushels more than the average yield of the previous year and 5.6 bushels more than the previous high yield observed in 1994 (Fig. 2). Average yields at the seven test locations varied from 57.7 bushels per acre at Novelty to 80.6 bushels per acre at Lamar (Table 14). Grain yields of the northern locations averaged 67.8 bushels per acre compared to 75.2 and 72.1 bushels per acre for the southeastern ('Bootheel') and southwestern regions, respectively (Table 13).

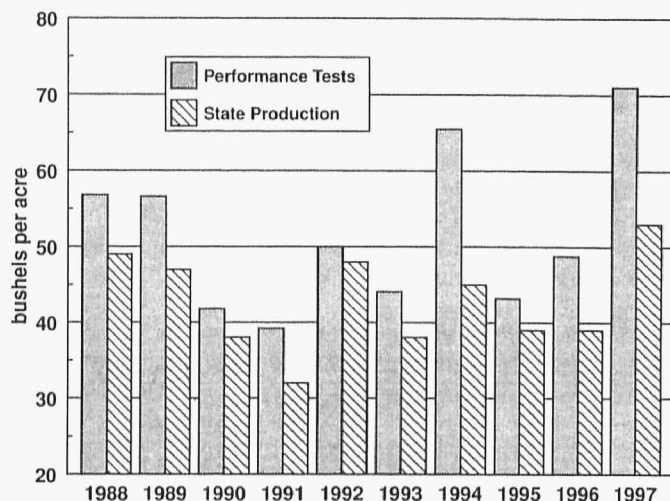


Fig. 2. Average yield of soft red winter wheats tested in the Missouri Winter Wheat Performance Test Program and average yield of commercial state production from 1988 to 1997.

For the second consecutive year, 'Pioneer Variety 2540' was the highest yielding soft red winter wheat tested, averaging 78.2 bushels per acre across all locations (Table 14). Two entries, 'Lewis 8404' and 'Pioneer Variety 25R26', averaged 78.1 bushels per acre across all seven locations. In addition to Lewis 8404 and Pioneer Variety 25R26, 13 additional private entries produced yields equal to those of Pioneer Variety 2540 including; 'NeCo S80' (77.7 bu/acre), 'Willcross 795' (76.8 bu/acre), 'Merschman Julie IV' (76.6 bu/acre), 'Pioneer Variety 2568' (76.2 bu/acre), 'Willcross 723' (75.8 bu/acre), 'AGRIPRO Elkhart' (75.6 bu/acre), 'DK 9027' (75.4 bu/acre), 'Merschman Katie IX' (75.3 bu/acre), 'AGRIPRO Shiloh' (75.0 bu/acre), 'Pioneer Variety 25R57' (74.9 bu/acre), 'Terra SR211' (74.8 bu/acre), 'AGRIPRO Clemens' (74.7 bu/acre) and 'FFR 539W' (74.6 bu/acre). The highest yielding public soft red winter wheat was 'Jackson', released by the Virginia Agricultural Experiment Station in 1993. Jackson averaged 70.4 bushels per acre. Pioneer Variety 2540 (71.0 bu/acre) and 'AGRIPRO Clemens' (58.7 bu/acre) have been the highest yielding varieties tested for the past 2 and 3 years, respectively (Table 5).

The four hard red winter wheats (plus 'Ernie' as a soft red winter wheat check entry) averaged 59.4 bushels per acre

across the three test locations in 1997 (Table 15 and 19). Location yields varied from 54.2 bushels per acre at Columbia to 68.5 bushels per acre at Trenton (Table 19). No yield differences were observed among the hard red winter wheats tested at Columbia or for yields averaged across the three test locations. Ernie (64.4 bu/a) and '2137' (58.6) were the highest yielding entries in the hard red winter wheat test at Mt. Vernon in 1997. Jagger (73.1 bu/a) and '2137' (73.0) were the highest yielding entries in the hard red winter wheat test at Trenton in 1997.

Environmental conditions that enhanced grain yields also promoted heavier grain test weights during 1997. Forty eight of the 64 soft red winter wheats tested in 1997 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 (Table 5). Test weights among the soft and hard red winter wheats averaged 58.8 and 58.9 pounds per bushel, respectively, in 1997 (Tables 5 and 15). Test weights in 1997 were nearly 3.5 pounds heavier than those measured in 1995 (Fig. 3), and 8 pounds heavier than the test weights reduced by scab in 1991. Mean test weight during 1997 varied from 58.4 pounds per bushel at Novelty (Table 7) to 59.8 pounds per bushel at Lamar (Table 11). For the second consecutive year, Coker 9474 produced the heaviest test weight at 61.9 pounds per bushel among the soft red winter wheats (Table 5). Hard red winter wheat test weights were heaviest and more consistent at Trenton (Table 18), where all four hard red winter wheats produced test weights exceeding 60 pounds per bushel.

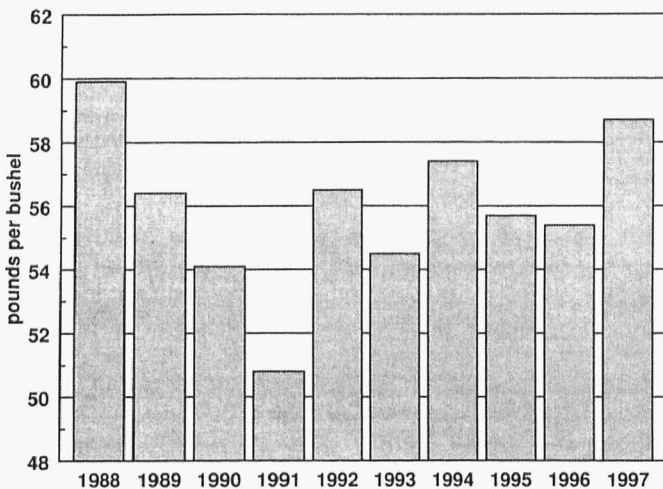


Fig. 3. Average test weight of soft red winter wheats tested from 1988 to 1997.

## 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 provided. 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.

### AGRIPRO Foster Soft Red Winter Wheat

'AGRIPRO Foster' (KY85C-31-6, PI593689, CV-835, PVP 9700119) is a soft red winter wheat developed and released by the University of Kentucky in 1995. Exclusive marketing and distribution rights of Foster have been granted to Agripro Seeds, Inc. AGRIPRO Foster was derived from the cross 'KY83-60 / Tyler // KY83-75'. It is a white-chaffed, awnletted, mid-season variety that heads approximately 2 to 3 days earlier than 'Cardinal' soft red winter wheat under Missouri conditions. AGRIPRO Foster is considered resistant to powdery mildew, resistant to leaf blotch, moderately resistant to glume blotch, moderately resistance to the prevalent field races of leaf rust and moderately susceptible to the barley yellow dwarf virus. AGRIPRO Foster is susceptible to all Hessian fly (*Mayetiola destructor*) biotypes. The variety possesses good winterhardiness and excellent milling and baking qualities. In 1997, AGRIPRO Foster averaged 73.8 bushels per acre (Tables 5 and 14). Average test weight was 58.7 pounds per bushel. AGRIPRO Foster is protected under the Plant Variety Act, Public Law 91-577 and Title V of the Federal Seed Act. More detailed information on AGRIPRO Foster is available from Agripro Seeds, Inc., on request.

### NK Coker 9704 Soft Red Winter Wheat

'NK Coker 9704' (L910097) is an awnletted, white-chaffed soft red winter wheat developed by Novartis Seeds, Inc. (formerly Northrup King Co.) at Bay, Arkansas from the cross 'Coker 9803 / Coker 983'. NK Coker 9704 is an intermediate-height semi-dwarf variety with good straw strength. This variety is a mid-season maturity type compared to most other varieties grown in Missouri. NK Coker 9704 is resistant to the prevalent field races of leaf rust and powdery mildew that exist in the Mid-South region. It is moderately resistant to stem rust (*Puccinia graminis*), leaf blotch, glume blotch and soilborne mosaic virus. NK Coker 9704 is susceptible to all field biotypes of the Hessian fly. Winterhardiness should be adequate to permit production in Missouri as far north as I-44 during most years. NK Coker 9704 yielded 69.1 bushels per acre across all seven test locations in 1997 (Tables 5 and 14), an average performance compared to all other entries tested in Missouri this past year. Initial test weight performance of NK Coker 9704 (59.9 lb/bu) also was average compared to other soft red winter wheats tested in 1997. Novartis Seeds has applied for Plant Variety Protection of NK Coker 9704 under the Title V option, with commercial sale of seed only available as a class of certified seed through the company's TGN grower/dealer network. More detailed information on NK Coker 9704 is available from Norvartis Seeds upon request.

### Pioneer Variety 25R26 Soft Red Winter Wheat

'Pioneer Variety 25R26' (XW531, PVP 9700351) is a new proprietary soft red winter wheat developed by Pioneer Hi-Bred International, Inc. 25R26 is an awned, medium-late heading date variety, with medium plant height and very good straw lodging resistance. It has strong winter hardiness and is broadly adapted across most of the soft



**Table 4.** Estimated acreage, yield and production of winter wheat in Missouri by reporting district for 1997. Estimates are based on the July 1 USDA forecast provided by the Missouri Agricultural Statistics Service.

Reporting District	Acreage Planted ----- 1,000 acres -----	Acreage Harvested	Acreage Abandoned - % -	Estimated Yield - bu/acre -	Estimated Production - 1,000 bushels -
North-West	70	67	4	50	3,350
North-Central	114	109	4	52	5,700
North-East	155	148	5	51	7,500
West-Central	135	129	4	53	6,850
Central	135	129	4	53	6,850
East-Central	95	90	6	54	4,900
South-West	95	86	9	55	4,700
South-Central	11	8	27	44	350
South-East	290	274	6	54	14,920
<b>State</b>	<b>1,100</b>	<b>1,040</b>	<b>5</b>	<b>53</b>	<b>55,120</b>

wheat growing region. 25R26 has shown excellent resistance to leaf rust, soilborne mosaic virus, and spindle streak mosaic virus. 25R26 has good resistance to powdery mildew and moderate resistance to septoria leaf blotch, septoria glume blotch, and tan spot (*Pyrenophora tritici-repentis*). 25R26 is susceptible to stem rust, and while resistant to Hessian fly biotypes B and E, it is susceptible to Hessian fly biotype L. 25R26 averaged 78.1 bushels per acre across the seven test locations (Tables 5 and 14), placing it among the top yielding entries for 1997. Average test weight was 57.6 pounds per bushel. Application for Plant Variety Protection of 25R26 has been made. More detailed information on 25R26 is available from Pioneer Hi-Bred International upon request.

#### **Pioneer Variety 25R57 Soft Red Winter Wheat**

'Pioneer Variety 25R57' (XW548, PVP 9700352) soft red winter wheat was developed and released by Pioneer Hi-Bred International, Inc. 25R57 is a white chaffed, awnless, medium-early heading date variety, with medium-tall plant height, and very good straw lodging resistance. It has shown excellent yield potential and test weight across most of the soft wheat growing region. 25R57 has strong winter hardiness, but only moderate drought tolerance, which may limit its performance on light or sandy soils. 25R57 has shown excellent resistance to stem rust and very good powdery mildew resistance. 25R57 is resistant to leaf rust and moderately resistant to leaf blotch, glume blotch, and tan spot. 25R57 has intermediate resistance to soilborne mosaic virus and spindle streak virus. It is susceptible to the predominant field biotypes of Hessian fly. 25R57 has very good milling and baking qualities. 25R57 averaged 74.9 bushels per acre across the seven test locations (Tables 5 and 14), placing it among the top yielding entries for 1997. Average test weight was 58.8 pounds per bushel. Application for Plant Variety Protection of 25R57 has been made. More detailed information on 25R57 is available from Pioneer Hi-Bred International upon request.

#### **Pocahontas Soft Red Winter Wheat**

'Pocahontas' (VA93-52-60) is a white chaffed, awnletted soft red winter wheat developed and recently released by

the Virginia Polytechnical Institute and State University and the Virginia Agricultural Experiment Station. Pocahontas was derived from the cross 'Wheeler / C39 // Saluda', and was initially tested in Missouri as 'VA93-52-60' during the 1995-96 and 1996-97 cropping seasons. Pocahontas typically heads 2 to 3 days before 'Jackson' soft red winter wheat. Winterhardiness, plant height, and maturity of Pocahontas have been very similar to those of Jackson under Missouri conditions. Milling quality of Pocahontas is considered superior with satisfactory baking characteristics. Pocahontas is resistant to the prevalent field races of powdery mildew in the mid-Atlantic region, which should translate to superior resistance against this foliar disease in Missouri environments. It is moderately resistant to soilborne mosaic virus, leaf blotch and glume blotch, moderately susceptible to leaf rust and barley yellow dwarf; and susceptible to stem rust. Pocahontas is resistant to Hessian fly biotypes GP and E, but susceptible to Hessian fly biotype L. In 1997, Pocahontas produced average yield (68.2 bu/a) and test weight (58.2 lb/bu) compared to other soft red winter wheats tested in Missouri (Table 5). Requests for availability of foundation seed of Pocahontas should be directed to Mr. Bruce Beahm, Foundation Seed Farm, Mt. Holly, VA, (804) 472-3500.

## **1997 Missouri Winter Wheat Crop**

### **Projected Crop Statistics**

Favorable weather conditions resulted in high yields and heavy test weights for most commercial Missouri winter wheat farmers during 1997. Based on July 1 estimates, Missouri's 1997 wheat crop was harvested from approximately 1.04 million acres, a 20 percent reduction from the wheat acreage harvested in 1996 (Table 4). The statewide average yield projected by the Missouri Agricultural Statistical Service is a record 53 bushels per acre, 4 bushels per acre greater than the previous record level attained in 1988 (Fig. 2). Projected district average yields ranged from a high of 55 bu/acre for the South-West district to a low of 44 bu/acre in the South-Central district. Total projected production of the 1997 Missouri wheat crop

is 55.1 million bushels, over 4 million bushels more than 1996 production levels which represents an 8 percent increase in production over the previous year.

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### **Electronic Accessibility of Data**

Results of the 1997 Missouri Winter Wheat Performance Tests are now available in two 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 1997 Missouri Winter Wheat Performance Test results are available on the world wide web. World wide web access of this entire document is offered at '<http://www.psu.missouri.edu/pubs/sr506>'. Missouri Winter Wheat Performance Test reports from previous years, as well as wheat variety testing reports from many other states also are available at '<http://www.ext.missouri.edu/info/agron/wheat.html>'.

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Portageville, Missouri

Dr. Richard Crawford, Superintendent  
Southwest Research and Extension Center  
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Mr. John Poehlmann, Superintendent  
Bradford Agricultural Research Center  
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Mr. David Sheats, Farmer Cooperator  
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Mr. Randall Smoot, Superintendent  
Greenley Agricultural Research Center  
Novelty, Missouri

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Table 5. Performance of soft red winter wheats tested across seven locations in Missouri during 1997. Varieties listed alphabetically.

Variety	1/ Grain Yield			Test Weight	Grain Moisture	Plant Height	2/ Lodging	3/ Winter Survival	Heading Date	
	1997	1996-97	1995-97						Julian	Calendar
	----- bushels/acre -----			- lb/bu -	- % -	- inches -	0-9	- % -		
AGRIPRO Clemens	74.7*	65.2	58.7**	59.3	13.8	38	2	81	138	May 18
AGRIPRO Elkhart	75.6*	64.6	57.5*	61.1	12.5	37	1	82	135	May 15
AGRIPRO Foster	73.8	62.7		58.7	13.4	35	0	81	136	May 16
AGRIPRO Pontiac	64.8	58.7	53.2	59.1	12.8	36	1	78	138	May 18
AGRIPRO Shiloh	75.0*	64.1	56.6	58.6	12.6	35	2	82	137	May 17
Cardinal	67.6	59.9	54.0	57.5	13.6	37	1	79	139	May 19
DK 9027	75.4*			59.1	12.8	36	2	74	135	May 15
DK Tracker	67.5			57.9	13.0	37	1	76	136	May 16
EK 102	64.2			56.0	12.8	35	2	75	136	May 16
EK 114	66.5			57.6	12.8	35	1	77	136	May 16
Ernie	69.5	57.7	53.8	58.9	12.4	33	2	81	134	May 14
FFR 522W	71.4	56.5		59.8	13.4	35	2	77	134	May 14
FFR 525W	71.8	55.9	52.7	59.8	12.4	36	3	79	135	May 15
FFR 529W (FFR EX 529)	64.9			59.4	12.9	38	2	77	137	May 17
FFR 539W (FFR EX 539)	74.6*			58.2	12.8	37	1	77	136	May 16
FFR 558W	73.8	65.2	58.0*	60.0	13.5	37	1	75	137	May 17
FFR EX 333	70.8			56.5	12.6	35	1	77	136	May 16
FFR EX 356	72.4			58.3	13.0	37	2	77	136	May 16
G2500	62.8			60.8	12.5	32	1	76	137	May 17
Howell	64.1	60.9	53.2	60.6	14.2	38	1	73	139	May 19
Jackson	70.4	50.9	49.6	58.6	12.7	35	3	77	136	May 16
Lewis 8404	78.1*			59.2	13.1	36	1	76	135	May 15
LG Seeds JMS 104	69.3	62.8		59.9	14.7	39	1	77	137	May 17
LG Seeds JMS 105	72.3	61.9		58.8	13.7	36	1	75	137	May 17
Madison	69.5	57.9	53.6	57.4	12.6	36	2	78	135	May 15
Merschman Barbie IV	70.6	62.2	55.9	57.5	12.5	36	1	75	137	May 17
Merschman Genie VI	73.7	62.9	57.7*	59.1	13.1	37	2	77	135	May 15
Merschman Julie IV	76.6*	62.2		60.2	13.3	36	2	80	136	May 16
Merschman Katie IX	75.3*			58.6	13.0	37	1	82	136	May 16
Merschman Millie II	65.1	57.6		57.8	12.9	37	2	76	133	May 13
MFA 1800 (MFA EXP 1800)	71.3			58.4	12.7	35	1	74	136	May 16
MFA Commander II	72.0	60.1		59.5	13.5	36	1	81	135	May 15
MFA Enterprise	67.6	60.6	53.5	59.9	15.1	37	1	75	137	May 17
MFA Fury	71.8	58.7		58.2	12.5	37	2	78	136	May 16
MO94-173	67.0			60.6	13.3	38	2	73	135	May 15
MO94-317	70.9			58.1	12.9	36	1	76	136	May 16
NeCo S80	77.7*			59.3	12.8	36	2	73	135	May 15
NeCo S88	72.2	62.3		57.5	12.3	36	1	77	137	May 17

NeCo S95	72.8	60.6		56.0	13.8	36	1	78	138	May 18
NeCo S98	65.0	61.6	53.6	59.8	15.3	36	1	73	138	May 18
NK Coker 9474	70.9	64.3	<b>57.0*</b>	61.9	13.0	34	0	76	135	May 15
NK Coker 9543	66.4	55.7	52.2	58.8	12.9	33	3	81	135	May 15
NK Coker 9663	73.9	62.6		59.8	13.9	37	2	78	136	May 16
NK Coker 9704 (L910097)	69.1			59.9	13.3	34	2	78	133	May 13
NK Coker 9803	66.2	46.9	46.9	59.9	13.2	34	2	77	134	May 14
Pioneer Variety 2540	<b>78.2**</b>	<b>71.0**</b>		59.2	13.5	35	1	73	138	May 18
Pioneer Variety 2568	<b>76.2*</b>	65.6		58.0	12.5	35	1	79	135	May 15
Pioneer Variety 2571	70.6	64.0	<b>57.9*</b>	58.2	12.9	35	1	76	134	May 14
Pioneer Variety 25R26	<b>78.1*</b>			57.6	12.7	34	1	76	139	May 19
Pioneer Variety 25R57	<b>74.9*</b>			58.8	12.8	36	1	77	136	May 16
Pocahontas (VA93-52-60)	68.2	51.3		58.2	12.5	36	2	79	134	May 14
Stine 470	73.4			58.1	12.8	35	1	76	135	May 15
Stine 480	72.7	62.4		58.7	13.1	36	1	76	136	May 16
Stine 481	69.6			57.4	12.3	36	1	73	137	May 17
Terra SR204	69.4	62.4	55.3	59.9	15.0	36	1	77	136	May 16
Terra SR205	70.9	60.7	55.2	57.7	12.5	36	1	73	137	May 17
Terra SR211	<b>74.8*</b>	62.6		58.8	12.8	36	1	71	135	May 15
Terral TV 8557	70.7			58.2	13.0	37	3	80	135	May 15
Terral TV 8768	66.4			59.6	13.4	37	2	76	136	May 16
Wakefield	66.1	52.0	49.0	57.4	13.3	37	1	81	137	May 17
Willcross 723	<b>75.8*</b>			59.0	12.7	36	2	75	135	May 15
Willcross 788 (HBR 3020)	71.7	61.8	<b>56.7*</b>	57.8	12.3	37	1	76	137	May 17
Willcross 795 (HBR 4010)	<b>76.8*</b>	62.9	<b>57.5*</b>	56.4	13.8	37	1	80	138	May 18
Willcross 798 (HBR 4020)	67.7	63.0	55.6	60.0	15.3	37	1	77	137	May 17
Average	71.0	60.5	54.6	58.8	13.1	36	1	77	136	May 16
LSD (p=0.05)	4.1	2.8	2.0	0.7	0.4	3.3	0.7	NS	NS	
CV%	11.1	12.3	12.0	2.3	5.2	21.1	125.9	34.4	5.5	
Location Years	7	14	21	7	7	7	6	7	4	

1/ Yields are based on 60 pound standard bushel 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, 1997.

\*\* 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 1997. Varieties listed alphabetically.

Variety	1/ Grain Yield			Test Weight	Grain Moisture	Plant Height	2/ Lodging	3/ Winter Survival	Heading Date	
	1997	1996-97	1995-97						Julian	Calendar
	----- bushels/acre-----			- lb/bu -	- % -	- inches -	0-9	- % -		
AGRIPRO Clemens	67.3	62.6	<b>60.3*</b>	58.5	13.3	42	5	96	142	May 22
AGRIPRO Elkhart	<b>79.9*</b>	59.8	52.2	61.7	12.1	40	4	96	138	May 18
AGRIPRO Foster	<b>78.2*</b>	59.8		59.1	12.7	37	1	96	139	May 19
AGRIPRO Pontiac	58.8	53.3	54.9	58.6	12.3	39	4	94	140	May 20
AGRIPRO Shiloh	73.3	63.7	<b>58.8*</b>	60.0	12.5	36	4	95	140	May 20
Cardinal	70.1	60.1	<b>59.6*</b>	56.8	12.5	40	3	96	141	May 21
DK 9027	<b>77.1*</b>			59.5	12.2	40	5	93	138	May 18
DK Tracker	61.9			57.4	13.3	40	2	96	139	May 19
EK 102	66.7			56.5	12.1	37	5	96	139	May 19
EK 114	72.9			58.6	12.3	37	3	95	139	May 19
Ernie	68.7	49.8	52.6	59.4	11.9	33	4	96	137	May 17
FFR 522W	67.4	46.0		57.9	12.8	36	4	95	137	May 17
FFR 525W	64.6	39.7	45.3	60.3	12.2	36	6	94	138	May 18
FFR 529W (FFR EX 529)	<b>79.8*</b>			57.3	12.1	36	3	93	139	May 19
FFR 539W (FFR EX 539)	74.4			58.5	12.6	40	4	95	140	May 20
FFR 558W	62.2			59.5	12.4	41	4	94	139	May 19
FFR EX 333	<b>82.5*</b>			61.2	12.7	38	3	93	139	May 19
FFR EX 356	74.8	59.6	56.7	59.9	12.7	40	1	97	140	May 20
G2500	64.0			60.3	12.3	35	4	96	141	May 21
Howell	56.9	58.1	55.2	59.8	14.4	43	4	93	143	May 23
Jackson	<b>75.4*</b>	44.5	48.8	59.0	12.3	37	6	94	139	May 19
Lewis 8404	<b>83.4*</b>			59.4	12.6	40	2	93	139	May 19
LG Seeds JMS 104	62.3	58.6		59.1	15.0	41	3	94	140	May 20
LG Seeds JMS 105	73.6	61.5		58.0	12.7	42	2	94	140	May 20
Madison	73.5	51.7	51.7	57.0	12.1	38	5	95	139	May 19
Merschman Barbie IV	71.8	63.2	<b>59.6*</b>	54.6	11.7	41	3	94	140	May 20
Merschman Genie VI	65.6	53.4	54.4	59.1	12.6	38	4	96	137	May 17
Merschman Julie IV	<b>83.5**</b>	60.4		61.2	12.6	38	4	95	139	May 19
Merschman Katie IX	73.3			56.3	12.7	41	4	95	140	May 20
Merschman Millie II	65.1	56.6		59.4	12.3	38	4	97	135	May 15
MFA 1800 (MFA EXP 1800)	67.4	58.7	56.7	59.6	14.8	40	3	96	140	May 20
MFA Commander II	69.3			58.8	12.3	36	3	93	140	May 20
MFA Enterprise	74.2	46.3		59.0	13.3	39	3	95	139	May 19
MFA Fury	73.3	57.1		58.8	12.1	38	6	96	139	May 19
MO94-173	67.9			62.0	12.6	41	3	91	138	May 18
MO94-317	71.1			58.8	12.8	39	3	97	139	May 19
NeCo S80	<b>81.6*</b>			60.2	12.1	40	5	93	137	May 17
NeCo S88	71.8	60.4		56.0	11.4	40	3	95	140	May 20

NeCo S95	<b>80.9*</b>	59.0		56.3	12.7	40	4	97	142	May 22
NeCo S98	57.2	59.8	53.4	58.3	15.1	41	4	95	141	May 21
NK Coker 9474	<b>75.5*</b>	<b>69.4*</b>	<b>64.0**</b>	62.8	12.5	36	1	96	139	May 19
NK Coker 9543	60.6	45.0	47.2	57.2	12.2	35	6	99	138	May 18
NK Coker 9663	<b>75.4*</b>	54.1		59.8	13.1	38	6	94	140	May 20
NK Coker 9704 (L910097)	70.9			60.6	12.5	34	5	95	136	May 16
NK Coker 9803	66.3	34.7	40.5	59.4	12.6	35	6	97	137	May 17
Pioneer Variety 2540	<b>82.2*</b>	<b>72.8**</b>		59.6	12.9	39	2	94	141	May 21
Pioneer Variety 2568	<b>82.0*</b>	64.8		59.7	12.8	38	3	95	138	May 18
Pioneer Variety 2571	70.4	62.9	<b>60.0*</b>	58.2	12.5	37	1	94	138	May 18
Pioneer Variety 25R26	<b>82.3*</b>			58.1	13.2	38	2	96	143	May 23
Pioneer Variety 25R57	<b>78.5*</b>			60.1	12.2	38	2	96	139	May 19
Pocahontas (VA93-52-60)	70.9	47.5		59.3	12.2	37	6	96	137	May 17
Stine 470	<b>77.6*</b>			58.2	12.1	39	3	94	138	May 18
Stine 480	<b>79.5*</b>	64.4		58.2	12.5	39	2	95	140	May 20
Stine 481	<b>78.1*</b>			56.8	11.5	40	2	93	140	May 20
Terra SR204	67.5	62.4	58.2	59.6	14.7	41	3	94	140	May 20
Terra SR205	<b>75.6*</b>	63.6	<b>59.2*</b>	56.8	11.6	40	2	92	140	May 20
Terra SR211	<b>76.5*</b>	57.5		58.2	12.1	39	4	90	138	May 18
Terral TV 8557	66.0			56.6	12.6	39	6	98	138	May 18
Terral TV 8768	61.8			60.1	12.6	40	3	94	139	May 19
Wakefield	68.4	40.6	44.6	56.4	12.4	40	4	96	140	May 20
Willcross 723	<b>79.7*</b>			59.2	11.8	39	5	94	137	May 17
Willcross 788 (HBR 3020)	<b>74.9*</b>	58.9	57.7	56.8	11.3	39	3	95	140	May 20
Willcross 795 (HBR 4010)	<b>81.7*</b>	60.4	<b>59.0*</b>	57.2	12.6	41	0	97	141	May 21
Willcross 798 (HBR 4020)	61.9	61.0	57.6	59.1	15.1	41	5	95	140	May 20
Average	72.0	56.6	54.7	58.7	12.6	39	4	95	139	May 19
LSD (p=0.05)	8.6	7.9	5.5	1.4	0.4	2.1	1.9	2.6	0.9	
CV%	8.9	14.1	12.5	1.7	2.3	4.1	48.4	2.1	0.5	

1/ Yields are based on 60 pound standard bushel 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, 1997.

\*\* 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 1997. Varieties listed alphabetically.

Variety	1/			Test Weight	Grain Moisture	Plant Height	2/		
	1997	Grain Yield 1996-97	1995-97				Winter Survival	Heading Date	
	----- bushels/acre -----			- lb/bu -	- % -	- inches -	% -	Julian	Calendar
AGRIPRO Clemens	61.6	47.8	43.5*	58.1	15.2	31	89	149	May 29
AGRIPRO Elkhart	58.3	52.5*	45.9*	61.2	13.5	29	89	145	May 25
AGRIPRO Foster	59.5	51.3*		58.3	14.2	29	87	147	May 27
AGRIPRO Pontiac	49.4	47.8	43.1*	59.0	13.6	28	88	145	May 25
AGRIPRO Shiloh	61.6	50.8*	44.0*	59.1	13.9	29	91	148	May 28
Cardinal	49.6	38.6	37.6	55.2	13.9	30	90	149	May 29
DK 9027	68.3*			59.0	13.8	29	85	144	May 24
DK Tracker	53.0			57.1	13.9	29	85	147	May 27
EK 102	46.1			55.7	14.0	28	90	146	May 26
EK 114	44.7			56.9	13.8	29	88	146	May 26
Ernie	59.3	50.4*	47.0*	58.6	13.6	26	91	144	May 24
FFR 522W	45.9	30.2		58.9	14.4	26	86	145	May 25
FFR 525W	60.1	47.5	45.1*	59.7	13.6	29	85	146	May 26
FFR 529W (FFR EX 529)	57.5			58.8	13.6	31	89	144	May 24
FFR 539W (FFR EX 539)	61.7			59.3	14.3	30	90	145	May 25
FFR 558W	50.7	44.8	42.8	59.3	14.1	30	85	148	May 28
FFR EX 333	52.7			54.1	13.9	27	83	147	May 27
FFR EX 356	60.9			58.7	13.9	29	88	145	May 25
G2500	50.8			61.2	13.7	27	85	147	May 27
Howell	57.9	51.3*	45.1*	60.8	14.4	32	88	148	May 28
Jackson	56.9	39.5	40.8	59.3	13.7	29	84	147	May 27
Lewis 8404	71.3**			59.9	14.1	30	90	145	May 25
LG Seeds JMS 104	54.0	45.0		59.6	15.3	29	86	147	May 27
LG Seeds JMS 105	54.5	49.5		58.4	14.1	29	87	147	May 27
Madison	54.0	42.6	40.2	57.1	13.8	29	90	147	May 27
Merschman Barbie IV	61.8	53.1*	47.7*	57.1	13.3	29	88	147	May 27
Merschman Genie VI	61.9	49.1	44.3*	58.8	14.1	31	85	146	May 26
Merschman Julie IV	57.8	45.4		59.5	14.1	29	87	146	May 26
Merschman Katie IX	59.4			58.6	13.7	31	90	146	May 26
Merschman Millie II	51.0	44.6		57.5	14.0	30	86	143	May 23
MFA 1800 (MFA EXP 1800)	67.3*			59.1	13.8	29	85	146	May 26
MFA Commander II	54.2	45.2		58.5	14.4	30	88	147	May 27
MFA Enterprise	54.4	42.2	39.1	59.0	15.1	30	87	148	May 28
MFA Fury	61.8	47.6		58.8	13.8	32	89	147	May 27
MO94-173	59.4			60.1	14.1	32	86	143	May 23
MO94-317	58.6			57.4	14.0	30	87	147	May 27
NeCo S80	66.9*			60.3	13.9	28	85	144	May 24
NeCo S88	62.6*	54.4*		57.8	13.3	29	85	146	May 26



NeCo S95	54.2	42.0		54.4	14.2	29	87	148	May 28
NeCo S98	55.8	49.5	<b>43.4*</b>	59.6	15.3	29	89	148	May 28
NK Coker 9474	57.0	<b>50.9*</b>	<b>45.3*</b>	60.4	14.0	28	88	145	May 25
NK Coker 9543	56.8	44.8	<b>43.3*</b>	59.9	13.9	28	88	145	May 25
NK Coker 9663	62.1	<b>52.1*</b>		59.4	14.6	32	86	147	May 27
NK Coker 9704 (L910097)	52.3			57.5	14.7	26	86	144	May 24
NK Coker 9803	53.4	36.0	37.1	59.7	14.1	28	86	145	May 25
Pioneer Variety 2540	<b>67.1*</b>	<b>58.3**</b>		58.0	14.3	28	85	147	May 27
Pioneer Variety 2568	56.6	46.0		58.3	14.0	27	89	145	May 25
Pioneer Variety 2571	60.4	<b>52.2*</b>	<b>47.6*</b>	56.2	14.0	29	82	144	May 24
Pioneer Variety 25R26	<b>68.5*</b>			56.8	14.7	27	86	149	May 29
Pioneer Variety 25R57	60.0			58.0	14.0	30	89	146	May 26
Pocahontas (VA93-52-60)	50.8	31.8		57.2	13.8	26	91	144	May 24
Stine 470	<b>66.7*</b>			57.9	13.8	29	87	145	May 25
Stine 480	59.4	49.4		58.4	13.8	30	87	147	May 27
Stine 481	59.3			57.3	13.1	29	83	148	May 28
Terra SR204	51.8	45.3	41.4	58.7	15.3	29	90	147	May 27
Terra SR205	60.6	<b>52.3*</b>	<b>48.0*</b>	57.7	13.2	29	85	147	May 27
Terra SR211	<b>67.6*</b>	<b>52.1*</b>		59.4	13.8	28	79	144	May 24
Terral TV 8557	59.6			58.2	13.9	30	91	144	May 24
Terral TV 8768	44.1			56.6	14.0	29	84	147	May 27
Wakefield	39.5	31.5	34.6	57.4	14.2	30	86	149	May 29
Willcross 723	<b>68.7*</b>			58.5	13.8	29	86	144	May 24
Willcross 788 (HBR 3020)	<b>65.9*</b>	<b>57.0*</b>	<b>48.8**</b>	57.8	13.2	30	87	146	May 26
Willcross 795 (HBR 4010)	62.0	47.9	<b>44.9*</b>	56.4	14.2	31	89	148	May 28
Willcross 798 (HBR 4020)	54.5	<b>51.0*</b>	<b>45.4*</b>	59.8	15.4	29	91	148	May 28
Average	57.7	46.9	43.4	58.4	14.0	29	87.1	146	May 26
LSD (p=0.05)	8.7	8.4	5.7	1.7	0.4	2.9	4.5	1.2	
CV%	13.4	17.1	15.6	2.1	2.2	4.6	4.5	0.7	

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

2/ Derived from stand counts recorded during March, 1997.

\*\* 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 1997. Varieties listed alphabetically.

Variety	1/ Grain Yield			Test Weight	Grain Moisture	Plant Height	2/ Lodging	3/ Winter Survival	4/ Leaf Rust
	1997	1996-97	1995-97						
	----- bushels/acre -----			- lb/bu -	- % -	- inches -	0-9	- % -	0-9
AGRIPRO Clemens	74.6	<b>55.1*</b>	51.7	58.7	13.8	37	3	78	0.0
AGRIPRO Elkhart	<b>80.5*</b>	<b>57.7*</b>	<b>54.5*</b>	62.1	12.3	37	0	77	1.3
AGRIPRO Foster	66.4	46.4		57.4	13.5	33	1	84	1.0
AGRIPRO Pontiac	75.0	54.3	50.9	60.0	12.3	34	1	79	1.0
AGRIPRO Shiloh	<b>78.2*</b>	53.7	47.8	58.9	12.3	34	0	77	0.5
Cardinal	72.2	50.4	49.7	58.7	13.5	37	1	80	0.8
DK 9027	<b>77.2*</b>			59.3	12.5	35	0	75	0.5
DK Tracker	71.6			58.4	13.0	36	0	76	1.5
EK 102	71.2			<b>55.3</b>	12.5	34	0	79	1.0
EK 114	72.6			55.9	12.5	34	1	72	1.8
Ernie	67.4	48.7	51.7	57.7	12.5	31	1	77	2.5
FFR 522W	<b>77.2*</b>	49.7		60.7	13.3	35	2	76	0.3
FFR 525W	<b>82.1*</b>	49.9	50.7	60.2	12.0	37	5	78	0.5
FFR 529W (FFR EX 529)	75.5			60.8	12.3	37	0	79	0.3
FFR 539W (FFR EX 539)	<b>77.5*</b>			59.7	12.5	37	1	73	2.0
FFR 558W	75.6	<b>57.1*</b>	<b>54.5*</b>	60.2	13.3	36	0	70	1.8
FFR EX 333	63.9			54.2	11.8	33	0	74	5.3
FFR EX 356	76.2			57.8	12.3	37	2	72	1.0
G2500	66.6			61.4	12.5	30	0	75	0.8
Howell	68.8	51.9	49.9	61.3	14.5	39	0	76	3.5
Jackson	72.9	43.6	45.3	58.5	12.5	35	3	75	1.8
Lewis 8404	75.0			58.3	12.5	38	1	77	1.0
LG Seeds JMS 104	67.9	52.8		60.4	14.3	35	0	73	3.5
LG Seeds JMS 105	70.4	47.2		58.9	13.3	35	0	69	1.8
Madison	70.9	45.4	48.3	57.4	12.3	36	2	74	1.0
Merschman Barbie IV	70.6	47.0	47.5	56.9	12.3	34	0	72	1.3
Merschman Genie VI	<b>77.7*</b>	52.3	49.5	59.6	13.3	39	1	73	0.5
Merschman Julie IV	76.6	52.3		60.0	12.5	37	2	82	1.5
Merschman Katie IX	76.6			58.8	12.5	36	0	81	2.3
Merschman Millie II	72.4	48.5		60.0	12.5	38	2	77	2.8
MFA 1800 (MFA EXP 1800)	71.8			58.7	13.0	34	0	69	0.0
MFA Commander II	74.5	<b>58.5*</b>		60.1	12.8	35	0	78	3.3
MFA Enterprise	67.4	47.8	44.8	60.3	14.0	35	1	73	2.0
MFA Fury	71.5	41.9		58.1	12.0	39	2	75	6.3
MO94-173	72.6			61.2	12.5	39	1	71	3.8
MO94-317	73.3			58.1	12.8	36	0	69	1.5
NeCo S80	<b>81.3*</b>			59.7	12.5	34	0	70	1.0
NeCo S88	75.1	52.6		57.5	11.8	35	0	72	1.3

NeCo S95	75.9	50.0		55.0	13.5	37	0	76	0.5
NeCo S98	69.1	49.3	46.7	61.0	14.0	34	1	75	3.3
NK Coker 9474	71.4	52.2	50.5	62.9	12.3	32	0	79	0.5
NK Coker 9543	66.4	43.8	45.7	60.3	12.3	32	3	83	2.0
NK Coker 9663	74.1	52.1		59.2	14.0	41	2	78	0.0
NK Coker 9704 (L910097)	73.0			61.6	12.5	34	1	75	0.5
NK Coker 9803	70.4	38.4	42.4	61.2	13.0	33	1	77	0.3
Pioneer Variety 2540	<b>79.9*</b>	<b>57.6*</b>		58.7	13.3	33	0	73	0.8
Pioneer Variety 2568	<b>81.0*</b>	54.2		59.2	12.3	33	0	80	0.0
Pioneer Variety 2571	<b>82.2**</b>	<b>60.2**</b>	<b>56.4**</b>	60.2	12.5	33	0	76	0.0
Pioneer Variety 25R26	75.7			57.1	12.3	30	0	79	0.0
Pioneer Variety 25R57	<b>78.2*</b>			59.2	12.5	34	0	80	0.8
Pocahontas (VA93-52-60)	<b>78.9*</b>	44.1		59.0	12.3	33	1	79	1.5
Stine 470	72.2			58.3	12.3	35	0	78	3.0
Stine 480	74.1	52.1		58.7	12.8	36	0	79	2.5
Stine 481	71.5			57.0	11.8	35	0	75	1.3
Terra SR204	71.5	52.2	49.7	60.6	13.5	35	0	83	2.0
Terra SR205	69.3	47.0	47.8	56.3	12.3	35	0	65	1.8
Terra SR211	74.1	<b>55.6*</b>		59.3	12.8	34	1	68	0.8
Terral TV 8557	76.6			60.4	12.3	38	2	84	0.0
Terral TV 8768	74.4			61.3	13.0	38	2	76	0.3
Wakefield	65.0	41.7	43.6	57.4	14.0	37	0	77	1.0
Willcross 723	<b>81.3*</b>			60.2	12.3	34	0	76	1.0
Willcross 788 (HBR 3020)	72.7	48.1	46.0	58.1	12.3	35	0	77	1.0
Willcross 795 (HBR 4010)	73.3	50.9	51.4	55.2	13.3	36	0	83	0.8
Willcross 798 (HBR 4020)	68.7	53.2	50.0	60.7	13.8	34	0	77	2.3
Average	73.6	50.3	49.1	59.1	12.7	35	1	76	1.0
LSD (p=0.05)	5.0	5.1	3.9	0.9	0.5	1.4	0.7	3.6	0.9
CV%	4.6	10.3	9.9	1.2	3.3	3.2	80.5	3.5	51.3

1/ Yields are based on 60 pound standard bushel 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, 1997.

4/ Incidence of leaf rust (*Puccinia triticina* Eriks.) rated from 0 to 9 representing none to total involvement of the foliage during the hard dough stage (Feeke's GS 11.3) 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).

Table 9. Performance of soft red winter wheats tested at Charleston, Missouri during 1997. Varieties listed alphabetically.

Variety	1/ Grain Yield			Test Weight	Grain Moisture	Plant Height	2/ Lodging	3/ Winter Survival	Heading Date	
	1997	1996-97	1995-97						Julian	Calendar
	-----bushels/acre -----			- lb/bu -	- % -	- inches -	0-9	- % -		
AGRIPRO Clemens	90.1*	78.7*	66.3*	60.4	14.2	43	1	87	132	May 12
AGRIPRO Elkhart	85.5*	78.2*	66.2*	63.1	11.8	40	0	83	129	May 9
AGRIPRO Foster	78.5	76.8*		58.7	13.7	38	0	84	129	May 9
AGRIPRO Pontiac	82.5*	75.7*	62.7	59.6	13.0	42	1	81	133	May 13
AGRIPRO Shiloh	78.9	71.2	61.4	59.9	12.1	38	1	87	130	May 10
Cardinal	76.6	76.6*	63.2	56.1	14.5	42	0	87	131	May 11
DK 9027	79.8			59.6	12.3	39	0	69	129	May 9
DK Tracker	79.2			58.7	12.6	40	0	77	129	May 9
EK 102	62.1			52.7	12.2	39	3	71	130	May 10
EK 114	65.4			57.5	12.1	38	1	78	131	May 11
Ernie	84.4*	76.3*	64.1	58.9	11.5	36	1	86	128	May 8
FFR 522W	79.2	72.9		60.5	12.4	38	1	83	128	May 8
FFR 525W	75.5	72.0	60.6	59.7	11.6	39	1	81	129	May 9
FFR 529W (FFR EX 529)	68.5			58.6	12.8	45	4	81	132	May 12
FFR 539W (FFR EX 539)	82.6*			60.7	13.1	40	1	78	130	May 10
FFR 558W	79.1	75.5*	65.1*	59.3	14.5	40	1	79	130	May 10
FFR EX 333	78.3			56.6	12.9	36	1	77	130	May 10
FFR EX 356	79.5			58.3	13.1	40	1	76	129	May 9
G2500	68.3			60.8	11.5	33	1	77	131	May 11
Howell	64.6	68.9	58.6	60.3	15.5	41	0	71	133	May 13
Jackson	79.3	70.9	64.9*	57.8	12.0	39	3	81	130	May 10
Lewis 8404	91.0**			60.2	12.3	39	0	81	128	May 8
LG Seeds JMS 104	88.2*	79.1*		58.1	15.9	42	0	78	130	May 10
LG Seeds JMS 105	82.1*	73.4*		57.8	15.3	41	0	79	130	May 10
Madison	77.7	68.7	62.0	57.7	11.6	38	1	83	128	May 8
Merschman Barbie IV	81.3*	74.1*	62.2	58.9	11.6	39	0	78	130	May 10
Merschman Genie VI	89.4*	80.9**	70.1**	60.3	12.7	42	1	80	129	May 9
Merschman Julie IV	80.5*	72.2		60.5	13.1	40	0	82	129	May 9
Merschman Katie IX	88.4*			59.7	12.7	40	0	84	128	May 8
Merschman Millie II	71.2	71.2		58.5	12.3	41	1	76	127	May 7
MFA 1800 (MFA EXP 1800)	75.8			58.9	12.3	38	0	73	128	May 8
MFA Commander II	86.6*	78.8*		60.2	13.5	40	0	86	127	May 7
MFA Enterprise	83.6*	77.4*	64.4	57.7	18.7	42	1	82	129	May 9
MFA Fury	78.5	71.9		56.9	11.8	40	1	79	129	May 9
MO94-173	73.3			60.1	13.1	42	3	80	128	May 8
MO94-317	75.4			59.8	12.3	37	0	74	130	May 10
NeCo S80	84.2*			59.3	12.3	38	0	75	130	May 10
NeCo S88	82.4*	76.9*		57.8	11.7	40	0	82	130	May 10

NeCo S95	<b>82.6*</b>	<b>75.0*</b>		55.6	16.1	40	1	81	132	May 12
NeCo S98	73.5	72.2	59.4	57.9	19.5	39	1	64	130	May 10
NK Coker 9474	77.0	<b>73.5*</b>	62.8	62.7	12.6	36	0	80	129	May 9
NK Coker 9543	75.6	72.6	64.0	58.1	12.6	38	1	82	129	May 9
NK Coker 9663	<b>88.9*</b>	<b>80.3*</b>		60.1	15.1	43	1	83	130	May 10
NK Coker 9704 (L910097)	77.8			60.2	13.4	37	1	81	127	May 7
NK Coker 9803	75.4	67.5	59.2	60.2	13.4	35	1	73	128	May 8
Pioneer Variety 2540	<b>81.4*</b>	<b>80.3*</b>		58.7	15.4	38	0	63	133	May 13
Pioneer Variety 2568	78.0	<b>79.3*</b>		55.9	11.2	38	0	84	128	May 8
Pioneer Variety 2571	<b>81.7*</b>	<b>74.3*</b>	63.8	58.3	12.9	38	0	80	128	May 8
Pioneer Variety 25R26	<b>84.2*</b>			58.2	11.6	36	0	80	131	May 11
Pioneer Variety 25R57	<b>84.9*</b>			60.3	12.4	39	0	79	130	May 10
Pocahontas (VA93-52-60)	70.6	65.3		54.5	11.1	36	2	81	129	May 9
Stine 470	74.6			57.7	11.8	39	1	74	127	May 7
Stine 480	80.4	<b>76.5*</b>		58.6	13.0	39	0	79	129	May 9
Stine 481	78.7			56.8	11.7	40	0	76	131	May 11
Terra SR204	<b>80.7*</b>	<b>76.1*</b>	<b>65.4*</b>	58.5	18.0	39	0	78	129	May 9
Terra SR205	79.1	72.5	63.0	58.7	12.0	39	0	78	130	May 10
Terra SR211	<b>80.7*</b>	71.9		59.5	12.2	39	0	67	130	May 10
Terral TV 8557	<b>82.6*</b>			58.2	13.1	42	1	83	128	May 8
Terral TV 8768	78.0			60.5	14.1	41	0	78	129	May 9
Wakefield	79.1	70.1	60.0	56.6	13.2	40	1	87	130	May 10
Willcross 723	<b>85.1*</b>			59.2	12.4	39	0	77	130	May 10
Willcross 788 (HBR 3020)	<b>83.4*</b>	<b>77.3*</b>	<b>67.7*</b>	58.2	11.6	40	0	79	130	May 10
Willcross 795 (HBR 4010)	79.4	<b>76.5*</b>	<b>65.0*</b>	53.5	17.1	41	0	82	132	May 12
Willcross 798 (HBR 4020)	75.1	71.5	62.1	57.5	19.3	40	1	79	129	May 9
Average	79.3	74.4	63.4	58.7	13.3	39	1	79	130	May 10
LSD (p=0.05)	10.5	7.5	5.5	2.3	2.1	2.0	1.4	10.8	1.6	
CV%	10.2	10.2	10.8	3.1	11.6	4.1	152.4	10.6	1.0	

1/ Yields are based on 60 pound standard bushel 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, 1997.

\*\* 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 1997. Varieties listed alphabetically.

Variety	1/ Grain Yield			Test Weight	Grain Moisture	Plant Height	2/ Lodging	3/ Winter Survival
	1997	1996-97	1995-97					
	----- bushels/acre-----			- lb/bu -	- % -	- inches -	0-9	- % -
AGRIPRO Clemens	74.9*	73.1	68.4*	60.3	11.4	36	2	43
AGRIPRO Elkhart	82.6*	74.3	67.0*	60.7	10.5	36	1	49
AGRIPRO Foster	66.9	64.4		57.8	11.0	31	0	35
AGRIPRO Pontiac	71.4	67.5	61.2	59.1	10.8	37	1	36
AGRIPRO Shiloh	70.4	71.0	66.8*	57.0	10.0	34	1	33
Cardinal	71.0	64.4	58.9	58.1	11.4	37	0	36
DK 9027	68.5			56.8	10.5	35	0	27
DK Tracker	73.7*			56.3	10.2	34	0	31
EK 102	68.6			53.9	10.1	35	1	32
EK 114	68.8			54.9	10.2	35	3	32
Ernie	63.0	59.9	54.0	59.1	10.7	30	3	42
FFR 522W	77.5*	69.2		59.7	11.0	34	2	35
FFR 525W	72.6	68.5	62.6	59.0	10.4	35	2	36
FFR 529W (FFR EX 529)	68.4			59.8	10.9	38	1	30
FFR 539W (FFR EX 539)	77.8*			60.3	11.2	35	2	28
FFR 558W	82.5*	76.3*	68.4*	59.7	11.2	36	1	30
FFR EX 333	75.9*			56.9	10.2	35	1	45
FFR EX 356	76.0*			56.4	10.7	34	3	39
G2500	60.4			60.2	10.3	28	1	30
Howell	69.7	67.7	58.5	60.8	11.0	37	1	28
Jackson	63.2	58.2	56.5	55.9	10.2	33	1	32
Lewis 8404	68.9			57.3	10.8	33	1	26
LG Seeds JMS 104	71.6	71.6		61.0	11.8	35	1	30
LG Seeds JMS 105	73.8*	74.2		58.3	11.0	34	1	31
Madison	64.6	69.9	62.3	56.8	10.4	33	3	33
Merschman Barbie IV	69.8	69.6	64.5*	56.9	10.2	34	1	29
Merschman Genie VI	71.0	70.6	67.2*	58.4	10.8	35	1	25
Merschman Julie IV	71.5	72.3		60.0	11.0	33	2	36
Merschman Katie IX	73.3			59.1	10.8	35	1	49
Merschman Millie II	63.2	64.9		58.2	10.9	34	2	28
MFA 1800 (MFA EXP 1800)	67.1			56.9	10.1	34	0	26
MFA Commander II	67.6	70.3		59.1	11.1	32	1	46
MFA Enterprise	71.9	66.4	60.6	59.4	11.7	36	1	29
MFA Fury	68.5	62.5		57.1	10.3	33	1	33
MO94-173	57.2			59.4	11.0	38	3	28
MO94-317	73.4			55.7	10.1	36	0	37
NeCo S80	64.6			57.1	10.2	33	0	20
NeCo S88	68.5	67.5		56.2	10.2	35	1	28

NeCo S95	<b>77.6*</b>	69.9		55.5	10.4	35	1	31
NeCo S98	70.0	71.5	<b>64.8*</b>	60.0	12.0	35	1	24
NK Coker 9474	72.0	73.9	<b>65.3*</b>	61.6	10.8	34	1	31
NK Coker 9543	66.5	66.9	61.4	57.3	10.5	30	2	30
NK Coker 9663	66.5	66.1		59.0	11.3	35	3	31
NK Coker 9704 (L910097)	<b>73.6*</b>			60.0	10.8	32	2	35
NK Coker 9803	63.0	56.2	55.9	58.3	10.6	30	2	30
Pioneer Variety 2540	<b>79.7*</b>	<b>85.3**</b>		59.7	10.4	35	1	24
Pioneer Variety 2568	<b>76.4*</b>	<b>79.9*</b>		57.1	10.2	34	1	35
Pioneer Variety 2571	70.8	71.5	<b>66.8*</b>	57.5	10.3	33	1	32
Pioneer Variety 25R26	<b>79.9*</b>			57.4	10.0	30	0	37
Pioneer Variety 25R57	<b>78.3*</b>			57.8	10.5	35	1	34
Pocahontas (VA93-52-60)	70.0	64.0		57.7	10.3	33	2	39
Stine 470	66.4			56.5	10.6	33	2	33
Stine 480	71.9	70.1		58.2	10.7	32	1	35
Stine 481	68.3			57.2	10.4	35	1	29
Terra SR204	<b>74.8*</b>	74.7	<b>67.4*</b>	60.4	11.9	34	1	32
Terra SR205	<b>74.2*</b>	65.4	60.8	56.8	10.5	35	1	30
Terra SR211	68.6	70.4		57.0	10.2	34	1	22
Terral TV 8557	70.1			57.7	11.0	34	3	34
Terral TV 8768	65.1			58.3	11.0	35	1	27
Wakefield	<b>73.7*</b>	65.7	58.8	56.7	10.7	35	2	44
Willcross 723	67.8			56.8	10.3	34	0	25
Willcross 788 (HBR 3020)	67.7	69.6	<b>66.7*</b>	56.6	10.2	33	1	26
Willcross 795 (HBR 4010)	<b>85.4**</b>	<b>78.3*</b>	<b>70.4**</b>	56.4	10.5	36	1	36
Willcross 798 (HBR 4020)	<b>81.1*</b>	<b>77.0*</b>	<b>68.1*</b>	61.3	12.1	37	2	24
Average	71.1	69.5	63.3	58.1	10.7	34	1	32
LSD (p=0.05)	11.8	9.6	6.6	1.5	0.4	2.8	1.2	9.9
CV%	17.6	14.0	12.9	2.0	2.7	6.8	71.7	40.7

1/ Yields are based on 60 pound standard bushel 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, 1997.

\*\* 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 1997. Varieties listed alphabetically.

Variety	1/ Grain Yield			Test Weight	Grain Moisture	Plant Height	2/ Lodging	3/ Winter Survival
	1997	1996-97	1995-97					
	----- bushels/acre-----			- lb/bu -	- % -	- inches -	0-9	- % -
AGRIPRO Clemens	90.2*	72.2*	63.4**	59.7	14.0	38	1	93
AGRIPRO Elkhart	71.9	63.8	55.7	60.4	13.0	37	0	92
AGRIPRO Foster	90.0*	70.8*		59.7	13.7	39	0	94
AGRIPRO Pontiac	66.3	58.7	53.9	59.8	13.0	37	1	87
AGRIPRO Shiloh	88.5*	74.1**	62.2*	59.0	12.6	38	1	94
Cardinal	75.8	65.8	56.7	59.3	14.2	36	0	93
DK 9027	87.0*			60.0	13.4	37	1	89
DK Tracker	90.9**			59.3	13.3	40	0	96
EK 102	78.6			59.1	13.4	36	1	93
EK 114	75.8			58.9	13.3	39	0	90
Ernie	73.1	60.0	55.9	58.8	12.8	40	1	93
FFR 522W	79.1	61.7		60.6	13.8	39	1	89
FFR 525W	78.5	61.6	56.0	59.7	12.9	35	1	93
FFR 529W (FFR EX 529)	64.1			59.8	13.1	38	0	87
FFR 539W (FFR EX 539)	83.6			59.8	14.0	39	1	89
FFR 558W	77.0	71.8*	61.0*	60.5	13.2	38	0	93
FFR EX 333	85.7*			58.8	13.1	41	1	94
FFR EX 356	81.8			59.9	13.4	38	1	88
G2500	70.6			61.2	12.9	39	1	90
Howell	68.6	65.2	54.1	60.4	14.0	38	1	83
Jackson	85.2*	60.0	52.2	60.0	13.4	38	2	92
Lewis 8404	86.2*			59.7	13.8	39	0	92
LG Seeds JMS 104	77.0	66.1		61.5	14.7	38	0	90
LG Seeds JMS 105	80.3	67.1		59.9	13.4	37	0	92
Madison	89.4*	67.4*	59.1*	59.1	13.1	38	0	94
Merschman Barbie IV	81.4	68.2*	58.1	58.8	12.9	36	0	94
Merschman Genie VI	85.7*	70.0*	61.2*	59.1	13.5	37	1	96
Merschman Julie IV	82.0	67.1		60.2	13.9	37	1	93
Merschman Katie IX	83.8*			59.8	13.5	38	0	92
Merschman Millie II	77.9	63.9		60.1	13.4	38	1	96
MFA 1800 (MFA EXP 1800)	81.8			58.8	12.8	36	0	90
MFA Commander II	80.2	67.5*		60.2	13.8	38	0	94
MFA Enterprise	75.1	66.9	56.0	61.7	14.7	38	0	89
MFA Fury	88.6*	70.5*		59.1	13.3	38	1	96
MO94-173	79.0			60.7	13.9	37	0	91
MO94-317	87.9*			59.2	13.5	39	1	95
NeCo S80	85.7*			59.9	13.3	38	1	89
NeCo S88	81.7	68.0*		58.8	12.7	38	0	91



NeCo S95	80.2	65.2		57.5	13.6	37	0	91
NeCo S98	74.8	66.7	55.4	61.5	15.1	37	0	92
NK Coker 9474	71.6	64.9	56.2	62.0	13.7	38	0	88
NK Coker 9543	81.2	64.2	56.6	60.8	14.0	38	3	94
NK Coker 9663	80.2	66.1		60.1	13.9	37	2	92
NK Coker 9704 (L910097)	77.7			61.2	13.5	38	2	94
NK Coker 9803	74.8	54.4	50.2	61.1	13.5	39	2	95
Pioneer Variety 2540	<b>87.9*</b>	<b>74.0*</b>		59.1	13.3	37	0	91
Pioneer Variety 2568	<b>90.5*</b>	<b>72.4*</b>		58.6	12.9	38	0	93
Pioneer Variety 2571	72.1	64.7	56.8	59.3	13.1	38	0	87
Pioneer Variety 25R26	<b>85.2*</b>			58.3	12.9	39	0	88
Pioneer Variety 25R57	82.1			59.1	13.2	38	0	91
Pocahontas (VA93-52-60)	73.0	55.7		60.1	13.2	37	0	91
Stine 470	<b>89.4*</b>			59.2	13.6	38	1	92
Stine 480	80.0	63.5		59.6	13.3	40	0	93
Stine 481	80.1			58.7	13.0	37	0	86
Terra SR204	77.5	62.7	52.7	61.1	14.7	38	0	93
Terra SR205	81.4	64.4	56.2	58.8	13.0	36	0	90
Terra SR211	82.9	<b>69.8*</b>		59.7	13.4	39	1	85
Terral TV 8557	<b>87.0*</b>			60.0	13.7	39	2	97
Terral TV 8768	77.5			61.5	13.9	38	1	92
Wakefield	<b>86.1*</b>	65.0	57.6	58.9	13.6	38	0	96
Willcross 723	82.5			59.9	13.2	38	0	89
Willcross 788 (HBR 3020)	80.1	63.5	56.9	59.0	12.9	41	0	95
Willcross 795 (HBR 4010)	<b>85.0*</b>	<b>67.4*</b>	<b>60.0*</b>	57.3	13.5	38	0	94
Willcross 798 (HBR 4020)	73.1	65.8	55.0	61.3	15.0	38	0	90
Average	80.6	65.8	56.8	59.8	13.5	38	0.5	92
LSD (p=0.05)	7.2	6.9	5.2	0.5	0.3	5.7	0.7	4.3
CV%	8.1	10.7	11.5	0.7	1.7	10.8	119.3	4.1

1/ Yields are based on 60 pound standard bushel 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, 1997.

\*\* 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 1997. Varieties listed alphabetically.

Variety	1/ Grain Yield			Test Weight	Grain Moisture	Plant Height	2/ Lodging	3/ Winter Survival	Heading Date	
	1997	1996-97	1995-97						Julian	Calendar
	-----bushels/acre -----			- lb/bu -	- % -	- inches -	0-9	- % -		
AGRIPRO Clemens	59.7	64.6*	55.9*	59.0	15.3	37	4	98	131	May 11
AGRIPRO Elkhart	69.4*	64.5*	59.8**	59.2	14.6	37	2	98	128	May 8
AGRIPRO Foster	71.3*	68.1*		59.6	15.0	39	1	98	130	May 10
AGRIPRO Pontiac	51.8	52.2	45.2	57.7	15.2	38	2	96	131	May 11
AGRIPRO Shiloh	66.3	62.8*	53.8	56.7	14.9	37	4	96	131	May 11
Cardinal	61.3	60.5	50.9	58.9	15.2	36	2	96	133	May 13
DK 9027	74.5*			59.5	15.3	37	4	94	129	May 9
DK Tracker	49.1			58.6	14.7	38	1	97	128	May 8
EK 102	68.6*			59.5	15.6	37	2	97	129	May 9
EK 114	63.3			59.3	15.6	38	2	95	129	May 9
Ernie	69.7*	57.6	51.1	59.1	14.4	37	2	97	125	May 5
FFR 522W	75.3*	63.5*		60.3	16.4	38	3	98	127	May 7
FFR 525W	64.1	51.0	48.0	60.2	14.1	39	5	98	128	May 8
FFR 529W (FFR EX 529)	59.0			59.0	15.0	39	3	96	131	May 11
FFR 539W (FFR EX 539)	70.9*			60.8	15.3	38	3	96	129	May 9
FFR 558W	71.0*	68.6**	56.2*	59.6	15.8	39	1	98	130	May 10
FFR EX 333	64.0			57.9	14.7	38	2	95	128	May 8
FFR EX 356	59.5			58.3	15.0	40	4	95	130	May 10
G2500	58.9			60.5	14.8	35	3	96	129	May 9
Howell	58.0	62.2	50.4	61.2	15.8	37	2	94	132	May 12
Jackson	57.7	38.4	38.1	59.7	14.4	36	6	98	129	May 9
Lewis 8404	72.4*			60.4	15.4	36	2	95	129	May 9
LG Seeds JMS 104	63.1	64.0*		60.1	16.3	42	2	97	131	May 11
LG Seeds JMS 105	63.6	59.2		59.6	16.5	38	2	96	131	May 11
Madison	59.8	57.3	50.3	56.8	14.4	39	4	98	128	May 8
Merschman Barbie IV	63.1	58.9	51.1	58.6	15.7	37	2	95	131	May 11
Merschman Genie VI	59.5	62.3	55.9*	59.2	14.9	37	4	97	128	May 8
Merschman Julie IV	74.9*	63.2*		60.9	15.6	38	3	99	128	May 8
Merschman Katie IX	66.4			58.9	15.1	37	2	97	129	May 9
Merschman Millie II	58.1	52.2		59.1	14.6	39	3	95	126	May 6
MFA 1800 (MFA EXP 1800)	68.4			58.1	14.7	38	2	93	130	May 10
MFA Commander II	61.8	51.9		59.3	15.4	38	2	95	128	May 8
MFA Enterprise	64.3	62.5	51.8	61.3	16.6	38	1	94	131	May 11
MFA Fury	64.4	57.7		58.3	14.6	39	4	97	129	May 9
MO94-173	65.7			61.0	15.2	37	3	94	128	May 8
MO94-317	53.0			58.3	14.9	37	1	96	128	May 8
NeCo S80	71.4*			58.0	15.2	38	5	96	128	May 8
NeCo S88	57.0	55.2		58.3	14.8	38	2	95	130	May 10

NeCo S95	59.9	61.1		57.8	16.5	35	1	97	132	May 12
NeCo S98	56.9	60.5	51.5	59.7	16.5	36	1	98	131	May 11
NK Coker 9474	64.6	<b>63.5*</b>	53.8	60.3	15.1	37	0	94	128	May 8
NK Coker 9543	58.2	51.3	46.7	58.2	14.6	36	6	100	127	May 7
NK Coker 9663	<b>70.4*</b>	<b>65.8*</b>		60.1	15.5	37	4	97	128	May 8
NK Coker 9704 (L910097)	60.0			59.6	15.3	37	4	97	126	May 6
NK Coker 9803	55.7	39.8	41.9	58.8	15.1	37	4	98	127	May 7
Pioneer Variety 2540	64.1	<b>67.4*</b>		59.5	14.7	35	3	96	130	May 10
Pioneer Variety 2568	66.2	59.9		57.8	14.7	39	2	97	127	May 7
Pioneer Variety 2571	60.3	60.6	53.1	57.1	14.6	37	2	96	127	May 7
Pioneer Variety 25R26	<b>77.5**</b>			58.3	14.6	37	2	95	131	May 11
Pioneer Variety 25R57	<b>72.8*</b>			57.8	14.8	38	2	97	129	May 9
Pocahontas (VA93-52-60)	63.4	48.3		59.0	14.9	37	1	96	127	May 7
Stine 470	<b>75.8*</b>			58.9	15.3	36	2	96	128	May 8
Stine 480	62.5	59.4		58.7	15.5	38	2	96	130	May 10
Stine 481	54.9			58.1	14.7	37	2	94	131	May 11
Terra SR204	65.6	61.4	50.8	60.3	16.5	37	2	97	130	May 10
Terra SR205	60.6	58.3	50.9	58.8	14.8	38	2	93	130	May 10
Terra SR211	<b>68.8*</b>	59.7		58.5	15.3	37	4	93	129	May 9
Terral TV 8557	56.2			56.2	14.4	38	7	98	128	May 8
Terral TV 8768	57.6			58.9	15.1	35	4	96	129	May 9
Wakefield	63.2	46.6	42.7	58.2	15.0	37	3	97	130	May 10
Willcross 723	66.7			58.6	14.9	36	5	97	128	May 8
Willcross 788 (HBR 3020)	61.0	57.9	52.5	58.6	14.8	39	3	97	131	May 11
Willcross 795 (HBR 4010)	57.6	57.1	50.8	58.6	15.1	35	1	96	131	May 11
Willcross 798 (HBR 4020)	56.5	60.1	49.9	60.5	16.3	38	1	98	131	May 11
<b>Average</b>	<b>63.5</b>	<b>58.5</b>	<b>50.5</b>	<b>59.0</b>	<b>15.2</b>	<b>37</b>	<b>3</b>	<b>96</b>	<b>129</b>	<b>May 9</b>
LSD (p=0.05)	8.9	5.9	4.4	1.5	0.8	7.0	1.3	2.5	0.9	
CV%	10.5	10.3	10.8	1.8	4.0	13.3	37.5	2.2	0.5	

1/ Yields are based on 60 pound standard bushel 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, 1997.

\*\* 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<sup>1/</sup> 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 1997. Varieties listed alphabetically.

Variety	Northern Region			Southeastern Region			Southwestern Region			1997 State Average
	1997	1996-97	1995-97	1997	1996-97	1995-97	1997	1996-97	1995-97	
	----- bushels/acre -----									
AGRIPRO Clemens	67.7	55.5	52.1*	85.4*	75.9	67.4*	74.7*	68.4*	59.7**	74.7*
AGRIPRO Elkhart	73.2*	56.9	51.0	84.4*	76.3	66.6*	70.4	64.1	57.8*	75.6*
AGRIPRO Foster	70.2	52.6		71.4	70.6		81.7*	69.4*		73.8
AGRIPRO Pontiac	61.1	52.0	49.8	78.4	71.6	61.9	56.7	55.5	49.5	64.8
AGRIPRO Shiloh	72.1*	56.3	50.4	74.9	71.1	64.1	79.5*	68.4*	58.0*	75.0*
Cardinal	62.5	50.2	49.3	72.0	70.5	61.1	71.0	63.2	53.8	67.6
DK 9027	74.4*			70.5			81.8*			75.4*
DK Tracker	61.4			74.9			69.3			67.5
EK 102	61.9			57.8			74.2*			64.2
EK 114	63.2			68.1			69.7			66.5
Ernie	64.8	49.6	50.5	73.4	68.1	59.0	72.4	58.8	53.5	69.5
FFR 522W	63.3	42.5		78.0	71.0		77.0*	62.7		71.4
FFR 525W	70.2	45.6	47.1	75.4	70.3	61.6	70.5	56.3	52.0	71.8
FFR 529W (FFR EX 529)	65.1			67.0			62.5			64.9
FFR 539W (FFR EX 539)	73.5*			84.7*			75.9*			74.6*
FFR 558W	68.0	54.2	51.6	81.7*	75.9	66.7*	74.4*	70.2*	58.6*	73.8
FFR EX 333	64.8			76.3			74.1*			70.8
FFR EX 356	71.7			75.7			70.3			72.4
G2500	60.6			64.6			64.2			62.8
Howell	60.6	53.9	50.2	68.9	68.3	58.5	64.5	63.7	52.2	64.1
Jackson	68.8	42.7	45.1	71.4	64.5	60.7	71.7	49.2	45.2	70.4
Lewis 8404	75.5*			79.4			80.9*			78.1*
LG Seeds JMS 104	62.2	52.4		80.9*	75.3		68.2	65.0		69.3
LG Seeds JMS 105	65.9	52.9		81.1*	73.8		72.9*	63.1		72.3
Madison	66.2	46.8	46.9	71.2	69.3	62.2	72.8*	62.4	54.7	69.5
Merschman Barbie IV	65.0	54.5	51.7	77.2	71.8	63.4	72.5*	63.6	54.6	70.6
Merschman Genie VI	69.3	51.7	49.5	81.4*	75.8	68.6**	72.5*	66.2*	58.6*	73.7
Merschman Julie IV	73.2*	53.0		79.1	72.3		79.2*	65.1		76.6*
Merschman Katie IX	70.5			82.5*			75.2*			75.3*
Merschman Millie II	62.2	50.1		66.7	68.0		67.8	58.1		65.1
MFA 1800 (MFA EXP 1800)	69.6			71.4			73.8*			71.3
MFA Commander II	67.5	49.8		79.5	74.5		71.4	59.7		72.0
MFA Enterprise	62.1	49.9	47.1	73.6	71.9	62.5	70.0	64.7	53.9	67.6
MFA Fury	68.6	48.9		71.0	67.2		77.4*	64.1		71.8
MO94-173	66.5			62.8			71.8			67.0
MO94-317	68.3			75.8			69.9			70.9
NeCo S80	75.7*			80.3*			78.1*			77.7*
NeCo S88	70.3	55.9		75.4	72.2		71.8	61.6		72.2

NeCo S95	69.8	50.7		79.4	72.4		70.6	63.0		72.8
NeCo S98	59.4	53.0	48.0	71.8	71.8	62.1	66.8	63.6	53.4	65.0
NK Coker 9474	67.4	57.8	<b>53.5*</b>	78.4	73.7	64.0	68.6	64.2	55.0	70.9
NK Coker 9543	62.2	44.5	45.4	69.7	69.7	62.7	69.4	57.7	51.7	66.4
NK Coker 9663	70.9	52.8		76.3	73.2		<b>76.0*</b>	65.9		73.9
NK Coker 9704 (L910097)	64.7			75.0			70.0			69.1
NK Coker 9803	64.2	36.4	40.1	69.5	61.8	57.5	65.9	47.1	46.1	66.2
Pioneer Variety 2540	<b>75.3*</b>	<b>63.1**</b>		<b>82.9*</b>	<b>82.8**</b>		<b>77.8*</b>	<b>70.7**</b>		<b>78.2**</b>
Pioneer Variety 2568	<b>73.6*</b>	55.4		77.5	<b>79.6*</b>		<b>79.0*</b>	66.1		<b>76.2*</b>
Pioneer Variety 2571	68.9	58.7	<b>54.9**</b>	77.8	72.9	<b>65.3*</b>	65.9	62.7	55.0	70.6
Pioneer Variety 25R26	<b>75.3*</b>			79.5			<b>80.8*</b>			<b>78.1*</b>
Pioneer Variety 25R57	<b>72.3*</b>			77.3			<b>76.5*</b>			<b>74.9*</b>
Pocahontas (VA93-52-60)	65.3	41.5		72.9	64.6		67.8	52.0		68.2
Stine 470	71.0			68.1			<b>82.3**</b>			73.4
Stine 480	<b>72.9*</b>	55.5		75.4	73.3		69.7	61.5		72.7
Stine 481	69.7			71.4			67.5			69.6
Terra SR204	63.6	53.7	50.0	78.2	75.4	<b>66.4*</b>	69.3	62.1	51.8	69.4
Terra SR205	68.9	54.4	51.8	74.1	69.0	61.9	70.7	61.4	53.5	70.9
Terra SR211	<b>72.1*</b>	55.2		77.2	71.1		<b>76.3*</b>	64.8		<b>74.8*</b>
Terral TV 8557	68.3			74.3			70.7			70.7
Terral TV 8768	61.2			72.0			68.6			66.4
Wakefield	56.9	38.2	41.1	74.7	67.9	59.4	71.2	55.8	50.2	66.1
Willcross 723	<b>77.0**</b>			75.2			<b>74.6*</b>			<b>75.8*</b>
Willcross 788 (HBR 3020)	<b>71.8*</b>	54.5	50.9	73.8	73.4	<b>67.2*</b>	69.4	60.7	54.7	71.7
Willcross 795 (HBR 4010)	<b>73.4*</b>	53.3	<b>52.0*</b>	<b>87.3**</b>	<b>77.4*</b>	<b>67.7*</b>	71.4	62.3	55.4	<b>76.8*</b>
Willcross 798 (HBR 4020)	62.6	55.2	51.1	79.0	74.3	<b>65.1*</b>	64.1	62.9	52.5	67.7
Average	67.8	51.5	49.2	75.2	72.0	63.3	72.1	62.1	53.6	4.1
LSD (p=0.05)	5.2	4.1	2.9	7.3	6.0	4.3	9.8	4.5	3.4	11.1
CV%	9.5	13.9	12.6	15.2	12.1	11.9	16.6	10.5	11.2	11.1

1/ Yields are based on 60 pound standard bushel 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<sup>1/</sup> for soft red winter wheats tested at seven locations in Missouri during 1997. Varieties listed by descending state average.

Variety	Northern Region			Southeastern Region		Southwestern Region		1997 State Average
	Columbia	Novelty	Trenton	Charleston	Portageville	Lamar	Mt. Vernon	
	----- bushels/acre -----							
Pioneer Variety 2540	82.2*	67.1*	79.9*	81.4*	79.7*	87.9*	64.1	78.2**
Lewis 8404	83.4*	71.3**	75.0	91.0**	68.9	86.2*	72.4*	78.1*
Pioneer Variety 25R26	82.3*	68.5*	75.7	84.2*	79.9*	85.2*	77.5**	78.1*
NeCo S80	81.6*	66.9*	81.3*	84.2*	64.6	85.7*	71.4*	77.7*
Willcross 795 (HBR 4010)	81.7*	62.0	73.3	79.4	85.4**	85.0*	57.6	76.8*
Merschman Julie IV	83.5**	57.8	76.6	80.5*	71.5	82.0	74.9*	76.6*
Pioneer Variety 2568	82.0*	56.6	81.0*	78.0	76.4*	90.5*	66.2	76.2*
Willcross 723	79.7*	68.7*	81.3*	85.1*	67.8	82.5	66.7	75.8*
AGRIPRO Elkhart	79.9*	58.3	80.5*	85.5*	82.6*	71.9	69.4*	75.6*
DK 9027	77.1*	68.3*	77.2*	79.8	68.5	87.0*	74.5*	75.4*
Merschman Katie IX	73.3	59.4	76.6	88.4*	73.3	83.8*	66.4	75.3*
AGRIPRO Shiloh	73.3	61.6	78.2*	78.9	70.4	88.5*	66.3	75.0*
Pioneer Variety 25R57	78.5*	60.0	78.2*	84.9*	78.3*	82.1	72.8*	74.9*
Terra SR211	76.5*	67.6*	74.1	80.7*	68.6	82.9	68.8*	74.8*
AGRIPRO Clemens	67.3	61.6	74.6	90.1*	74.9*	90.2*	59.7	74.7*
FFR 539W (FFR EX 539)	74.4	61.7	77.5*	82.6*	77.8*	83.6	70.9*	74.6*
NK Coker 9663	75.4*	62.1	74.1	88.9*	66.5	80.2	70.4*	73.9
AGRIPRO Foster	78.2*	59.5	66.4	78.5	66.9	90.0*	71.3*	73.8
FFR 558W	62.2	50.7	75.6	79.1	82.5*	77.0	71.0*	73.8
Merschman Genie VI	65.6	61.9	77.7*	89.4*	71.0	85.7*	59.5	73.7
Stine 470	77.6*	66.7*	72.2	74.6	66.4	89.4*	75.8*	73.4
NeCo S95	80.9*	54.2	75.9	82.6*	77.6*	80.2	59.9	72.8
Stine 480	79.5*	59.4	74.1	80.4	71.9	80.0	62.5	72.7
FFR EX 356	74.8	60.9	76.2	79.5	76.0*	81.8	59.5	72.4
LG Seeds JMS 105	73.6	54.5	70.4	82.1*	73.8*	80.3	63.6	72.3
NeCo S88	71.8	62.6*	75.1	82.4*	68.5	81.7	57.0	72.2
MFA Commander II	69.3	54.2	74.5	86.6*	67.6	80.2	61.8	72.0
FFR 525W	64.6	60.1	82.1*	75.5	72.6	78.5	64.1	71.8
MFA Fury	73.3	61.8	71.5	78.5	68.5	88.6*	64.4	71.8
Willcross 788 (HBR 3020)	74.9*	65.9*	72.7	83.4*	67.7	80.1	61.0	71.7
FFR 522W	67.4	45.9	77.2*	79.2	77.5*	79.1	75.3*	71.4
MFA 1800 (MFA EXP 1800)	67.4	67.3*	71.8	75.8	67.1	81.8	68.4	71.3
MO94-317	71.1	58.6	73.3	75.4	73.4	87.9*	53.0	70.9
NK Coker 9474	75.5*	57.0	71.4	77.0	72.0	71.6	64.6	70.9
Terra SR205	75.6*	60.6	69.3	79.1	74.2*	81.4	60.6	70.9
FFR EX 333	82.5*	52.7	63.9	78.3	75.9*	85.7*	64.0	70.8
Terral TV 8557	66.0	59.6	76.6	82.6*	70.1	87.0*	56.2	70.7
Merschman Barbie IV	71.8	61.8	70.6	81.3*	69.8	81.4	63.1	70.6

Pioneer Variety 2571	70.4	60.4	<b>82.2**</b>	<b>81.7*</b>	70.8	72.1	60.3	70.6
Jackson	<b>75.4*</b>	56.9	72.9	79.3	63.2	<b>85.2*</b>	57.7	70.4
Stine 481	<b>78.1*</b>	59.3	71.5	78.7	68.3	80.1	54.9	69.6
Ernie	68.7	59.3	67.4	<b>84.4*</b>	63.0	73.1	<b>69.7*</b>	69.5
Madison	73.5	54.0	70.9	77.7	64.6	<b>89.4*</b>	59.8	69.5
Terra SR204	67.5	51.8	71.5	<b>80.7*</b>	<b>74.8*</b>	77.5	65.6	69.4
LG Seeds JMS 104	62.3	54.0	67.9	<b>88.2*</b>	71.6	77.0	63.1	69.3
NK Coker 9704 (L910097)	70.9	52.3	73.0	77.8	<b>73.6*</b>	77.7	60.0	69.1
Pocahontas (VA93-52-60)	70.9	50.8	<b>78.9*</b>	70.6	70.0	73.0	63.4	68.2
Willcross 798 (HBR 4020)	61.9	54.5	68.7	75.1	<b>81.1*</b>	73.1	56.5	67.7
Cardinal	70.1	49.6	72.2	76.6	71.0	75.8	61.3	67.6
MFA Enterprise	74.2	54.4	67.4	<b>83.6*</b>	71.9	75.1	64.3	67.6
DK Tracker	61.9	53.0	71.6	79.2	<b>73.7*</b>	<b>90.9**</b>	49.1	67.5
MO94-173	67.9	59.4	72.6	73.3	57.2	79.0	65.7	67.0
EK 114	72.9	44.7	72.6	65.4	68.8	75.8	63.3	66.5
NK Coker 9543	60.6	56.8	66.4	75.6	66.5	81.2	58.2	66.4
Terral TV 8768	61.8	44.1	74.4	78.0	65.1	77.5	57.6	66.4
NK Coker 9803	66.3	53.4	70.4	75.4	63.0	74.8	55.7	66.2
Wakefield	68.4	39.5	65.0	79.1	<b>73.7*</b>	<b>86.1*</b>	63.2	66.1
Merschman Millie II	65.1	51.0	72.4	71.2	63.2	77.9	58.1	65.1
NeCo S98	57.2	55.8	69.1	73.5	70.0	74.8	56.9	65.0
FFR 529W (FFR EX 529)	<b>79.8*</b>	57.5	75.5	68.5	68.4	64.1	59.0	64.9
AGRIPRO Pontiac	58.8	49.4	75.0	<b>82.5*</b>	71.4	66.3	51.8	64.8
EK 102	66.7	46.1	71.2	62.1	68.6	78.6	<b>68.6*</b>	64.2
Howell	56.9	57.9	68.8	64.6	69.7	68.6	58.0	64.1
G2500	64.0	50.8	66.6	68.3	60.4	70.6	58.9	62.8
Average	72.0	57.7	73.6	79.3	71.1	80.6	63.5	71.0
LSD (p=0.05)	8.6	8.7	5.0	10.5	11.8	7.2	8.9	4.1
CV%	8.9	13.4	4.6	10.2	17.6	8.1	10.5	11.1

1/ Yields are based on 60 pound standard bushel 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 15. Performance of hard red winter wheats averaged across Columbia, Mount Vernon and Trenton locations in Missouri during 1997. Varieties listed alphabetically.

Variety	1/ Grain Yield		Test Weight	Grain Moisture	Plant Height	2/ Winter		3/ Heading Date	
	1997	1996-97				Lodging	Survival	Julian	Calendar
	---- bu/ac -----		-lb/bu-	-%-	-inches-	0-9	-%-		
2137	61.2	<b>57.8**</b>	59.3	13.4	35	3	94	136	May 16
Ernie, soft check	62.4		57.5	12.6	32	4	95	132	May 12
Jagger	61.1	43.9	58.5	13.0	33	4	94	131	May 11
Karl 92	59.3	<b>54.3*</b>	59.3	12.7	32	4	96	131	May 11
Willcross 7010 (HBR 7010)	52.9	44.1	59.8	12.9	34	4	93	132	May 12
Average	59.4	50.0	58.9	12.9	33	3	94	132	May 12
LSD (p=0.05)	NS	3.6	NS	NS	1.3	NS	NS	NS	
CV%	16.7	12.6	3.8	6.6	5.7	77.8	6.4	4.3	

1/ Yields are based on 60 pound standard bushel 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, 1997.

\*\* 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 for the trait within that column.

Table 16. Performance of hard red winter wheats tested at Columbia, Missouri during 1997. Varieties listed alphabetically.

Variety	1/ Grain Yield		Test Weight	Grain Moisture	Plant Height	2/ Winter		3/ Heading Date	
	1997	1996-97				Lodging	Survival	Julian	Calendar
	---- bu/ac -----		-lb/bu-	-%-	-inches-	0-9	-%-		
2137	51.9	<b>52.7*</b>	55.7	14.1	38	4	99	140	May 20
Ernie, soft check	58.0		56.6	13.3	34	7	99	137	May 17
Jagger	51.9	35.8	55.3	13.7	33	6	100	136	May 16
Karl 92	63.0	<b>57.3**</b>	57.2	12.9	33	7	100	136	May 16
Willcross 7010 (HBR 7010)	46.3	38.4	56.8	13.6	37	6	99	138	May 18
Average	54.2	46.1	56.3	13.5	35	6	99	137	May 17
LSD (p=0.05)	NS	8.6	1.1	0.5	0.5	NS	1.1	0.8	
CV%	16.6	17.8	1.7	2.9	1.2	37.5	0.9	0.5	

1/ Yields are based on 60 pound standard bushel 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, 1997.

\*\* 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 for the trait within that column.



Table 17. Performance of hard red winter wheats tested at Mount Vernon, Missouri during 1997. Varieties listed alphabetically.

Variety	1/ Grain Yield		Test Weight	Grain Moisture	Plant Height	2/ Winter		3/ Heading Date	
	1997	1996-97				Lodging	Survival	Julian	Calendar
	----	bu/ac	-----	-lb/bu-	-%-	-inches-	0-9	-%-	
2137	<b>58.6*</b>	<b>63.9**</b>	60.5	14.0	34	4	98	131	May 11
Ernie, soft check	<b>64.4**</b>		58.2	13.2	32	2	98	126	May 6
Jagger	58.4	47.3	59.4	13.6	34	3	97	126	May 6
Karl 92	48.1	54.1	59.7	13.1	32	4	100	125	May 5
Willcross 7010 (HBR 7010)	47.7	47.2	60.1	13.1	35	4	95	127	May 7
Average	55.4	53.1	59.6	13.4	33	3	98	127	May 7
LSD (p=0.05)	5.9	4.6	0.9	0.5	NS	NS	2.1	1.0	
CV%	8.7	8.2	1.2	2.9	4.8	31.8	1.7	0.6	

1/ Yields are based on 60 pound standard bushel 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, 1997.

\*\* 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 for the trait within that column.

Table 18. Performance of hard red winter wheats tested at Trenton, Missouri during 1997. Varieties listed alphabetically.

Variety	1/ Grain Yield		Test Weight	Grain Moisture	Plant Height	2/ Winter		3/ Leaf	4/ Rust
	1997	1996-97				Lodging	Survival	Leaf	Rust
	-----	bu/ac	-----	-lb/bu-	-%-	-inches-	0-9	-%-	0-9
2137	<b>73.0*</b>	<b>56.6**</b>	61.6	12.1	34	0	85	2	
Ernie, soft check	64.8		57.6	11.5	32	2	88	3	
Jagger	<b>73.1**</b>	48.5	60.8	11.8	32	1	87	1	
Karl 92	66.7	<b>51.7*</b>	60.9	12.0	33	1	89	7	
Willcross 7010 (HBR 7010)	64.9	46.8	62.5	11.8	31	0	86	1	
Average	68.5	50.9	60.7	11.8	32	1	87	3	
LSD (p=0.05)	4.8	6.0	0.5	0.1	1.2	0.4	2.5	0.6	
CV%	5.7	11.2	0.7	0.6	3.0	35.1	2.4	18.6	

1/ Yields are based on 60 pound standard bushel 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, 1997.

4/ Incidence of leaf rust (*Puccinia triticina* Eriks.) rated from 0 to 9 representing none to total involvement of the foliage during the hard dough stage (Feeke's GS 11.3) 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).

Table 19. Grain yield<sup>1/</sup> for hard red winter wheats tested at three locations in Missouri during 1997. Varieties listed by descending state average.

Variety	Columbia	Mt. Vernon	Trenton	1997 State Average
	----- bushels per acre -----			
Ernie, soft check	58.0	<b>64.4**</b>	64.8	62.4
2137	51.9	<b>58.6*</b>	<b>73.0*</b>	61.2
Jagger	51.9	58.4	<b>73.1**</b>	61.1
Karl 92	63.0	48.1	66.7	59.3
Willcross 7010 (HBR 7010)	46.3	47.7	64.9	52.9
Average	54.2	55.4	68.5	59.4
LSD (p=0.05)	NS	5.9	4.8	NS
CV%	16.6	8.7	5.7	16.7

1/ Yields are based on 60 pound standard bushel 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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