WINTER WHEAT

002 Missouri Crop Performance

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Special Report 542
Missouri Agricultural Experiment Station
College of Agriculture, Food, and Natural Resources
University of Missouri-Columbia
July 2002

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2002 MISSOURI WINTER WHEAT PERFORMANCE TESTS

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Introduction

The objective of the Missouri Winter Wheat Performance Tests is to provide wheat growers in Missouri with a reliable, unbiased, and 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 variety trials conducted throughout Missouri during the 2001-2002 cropping season. No hard red winter wheat tests were conducted in 2002.

Variety Testing Procedures

Locations

All entries were planted at seven Missouri locations (Figure 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.

Figure 1. Test locations for Missouri winter wheat performance tests conducted during 2002.

Entries and Seed Sources

Names of commercially available entries evaluated in 2002 and their seed sources are given in Table 1. Sixty-four soft red winter wheat varieties were tested comprised of 5 public, 12 public experimental, and 47 proprietary varieties. Public varieties adapted to Missouri growing conditions or recommended by the state of origin were entered in the 2002 variety tests under the sponsorship of the Missouri Seed Improvement Association. Seed lots of named public varieties were acquired from the foundation seed organization of the originating state or from the University of Missouri Foundation Seed Organization. Numbered entries preceded by a state designation (e.g. MO 980725, VA 98W-593) were provided by the foundation seed organization or the wheat breeder of the originating state; these are experimental lines not yet available for commercial production. Public experimental lines are tested in order to gain preliminary Missouri data on varieties that may become available for commercial production in Missouri 2003 or thereafter. Proprietary entries were submitted for testing on a fee basis by the developing company or sponsor. Condition of all seed lots (vigor, viability, seed treatment, etc.) was the responsibility of the company or organization submitting the entry for testing.

Experimental Design and Seeding Methods

Each soft red winter wheat experiment was planted using an 8 x 8 lattice design with four replications. Except for the Trenton location, all test plots consisted of a 15-foot, 6-row plot with 7-inch row spacing. At the Trenton location, test plots consisted of a 12-foot, 7-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 and ranged from 90 to 153 pounds per acre (Table 2). Seeding rates were not adjusted for germination. Except for the Trenton location, all entries were seeded into conventional seedbeds using a Hege 90™ plot drill equipped with six conventional double-disk openers. At the Trenton location, all entries were no-till seeded directly into soybean stubble using a plot drill equipped with Acraplant™ no-till openers.

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Cover photo: Wheat yield trials, Delta Center Lee Farm, Portageville, MO.

Table 1. Names and sources of commercial soft red winter wheat cultivars tested in Missouri during 2001-2002.

Variety	Source/Contact
Ernie†	Missouri Seed Improvement Assoc.
Kaskaskia†	3211 Lemone Industrial Blvd.
Roane†	Columbia, MO 65210-8245
Sisson†	(573) 449-0586
AR 839-27-1-3†	University of Arkansas
AR 839-25-8-2†	115 Plant Science Bldg.
ARLA 85411†	Fayetteville, AR 72701
	(501) 575-5725
GA 92485E15†	University of Georgia
	Dept. of Crop & Soil Science
	Griffin GA, 30223
	(770) 228-7321
KY 90C-054-6†	University of Kentucky
KY 90C-292-4-1†	Dept. of Agronomy
KY 91C-171-24†	Lexington, KY 40546-0091
	(606) 257-5811
MO 960903†	University of Missouri
MO 980525†	Dept. of Agronomy
MO 980725†	Columbia, MO 65211
	(573) 882-7708
OH 645†	The Ohio State University
	OARDC
	Wooster, OH 44691
	(330) 263-3944
VA 98W-593†	VPI State University
McCormick†	P.O. Box 78
	Mt. Holly, VA 22524
	(804) 472-3500
AgriPro Wheat Mitchell	AgriPro Wheat.
AgriPro Wheat Patton	Box 411, 520 East 1050 South
	Brookston, IN 47923
	(765) 563-3111
AgriPro Wheat Natchez	AgriPro Wheat
AgriPro Wheat SAVAGE	P.O. Box 2365
	Jonesboro, AR 72402
	(870) 935-3941
AGS 2000	AgSouth Genetics L.L.C.
	6830 Lisa Lane
	Dunwoody, GA 30338
	(770) 350-0011
Croplan Genetics 514W	Croplan Genetics
Croplan Genetics 554W	P.O. Box 146
	Blytheville, AR 72315
	(870) 762-1557
DK 1551	Delta King Seed Company
DK 7777	P.O. Box 970
DK 7900	McCrory, AR 72101
DK XTJ 9121	(870) 731-5484
DK XTJ 9216	
DK XTJ 9333	
DK XTJ 9410	
DG 4200	Delta Grow Seed
DG 4888	P.O. Box 219
DG 5300	England, Arkansas 72046
	(501) 842-2572
Dixie 900	Cache River Valley Seed
Dixie X9512	12470 Highway 226
Dixie X9611	Cash, AR 72421
	(870) 477-5427
EXCEL 101	Excel Brand Seed
EXCEL 201	P.O. Box 320
EXCEL 307	Camp Point, IL 62320
EXCEL 400-1	(800) 593-7708
FFR 510	FFR Seed
FFR 521	969 Cloverleaf Dr.
FFR 551	Southaven, MS 38671
FFR 556	(662) 349-9851
KTS Mack	Ken Tevis Seed Inc.
KTS Medallion	19588 Tevis Rd.
	Hughesville, MO 65334
	(660) 826-8523
LEWIS 864	Lewis Hybrids
	W. Maple St.
	Ursa, IL 62376
	(217) 964-2131
MFA Brand 766	MFA Incorporated
MFA Brand 1828	201 Ray Young Dr.
MFA Brand 2020	Columbia, MO 65201
	(573) 876-5285
MPG 7921	Midwest Premium Genetics
	P.O. Box 688
	Concordia, MO 64020
	(800) 622-1150
NK COKER 9025	Syngenta Seeds, Inc.
NK COKER 9152	P.O. Box 729
NK COKER 9474	Bay, AR 72411
NK COKER 9663	(870) 483-7691
Pioneer ® Variety 25R37	Pioneer Hi-Bred International Inc.
Pioneer ® Variety 25R44	5700 Merle Hay Rd.
Pioneer ® Variety 25R49	Johnson, IA 50131
Pioneer ® Variety 25R78	(515) 853-5800
USG 3209	UniSouth Genetics
USG 3650	2640-C Nolensville, Rd.
USG 3709	Nashville, TN 37211
	(800) 505-3133
WILLCROSS 730	WSDA
	P.O. Box 560
	Garden City, MO 64747
	(816) 862-6002

† Public winter wheat cultivars or experimental entries.

Table 2. Seed size of entries, adjusted seeding rates, and seed treatments of seed lots used for establishing soft red winter wheat entries during the fall of 2001. 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-Kernel weight	Seeds per pound	Adjusted seeding rate†	Seed treatment(s)
	-g-	-no/lb-	-lb/acre-	
AgriPro Wheat Mitchell	30.3	14,983	102	Raxil XT
AgriPro Wheat Natchez	39.6	11,465	134	Dividend Gaucho
AgriPro Wheat Patton	39.6	11,465	134	Raxil XT
AgriPro Wheat SAVAGE	29.9	15,184	101	Dividend Gaucho
AGS 2000	41.4	10,966	140	Vitavax Thiram
AR 839-25-8-2	28.6	15,874	97	None
AR 839-27-1-3	35.4	12,825	120	Raxil Thiram Reldan 4E
ARLA 85411	32.2	14,099	109	None
Croplan Genetics 514W	32.5	13,969	110	Vitavax 200
Croplan Genetics 554W	33.9	13,392	115	None
DG 4200	34.3	13,236	116	None
DG 4888	35.8	12,682	121	None
DG 5300	35.4	12,825	120	None
Dixie 900	33.0	13,758	112	Dividend XL
Dixie X9512	37.8	12,011	128	Dividend XL
Dixie X9611	34.1	13,314	115	Dividend XL
DK 1551	26.6	17,068	90	Dividend Cruiser
DK 7777	29.9	15,184	101	Dividend Cruiser
DK 7900	31.6	14,367	107	Dividend Cruiser
DK XTJ 9121	29.2	15,548	99	Dividend Cruiser
DK XTJ 9216	30.5	14,885	103	Dividend Cruiser
DK XTJ 9333	33.2	13,675	112	Dividend Cruiser
DK XTJ 9410	33.6	13,512	114	Dividend Cruiser
Ernie	36.8	12,337	124	Raxil Reldan Apron Gaucho
EXCEL 101	34.9	13,009	118	Raxil Thiram Gaucho
EXCEL 201	38.9	11,671	132	Raxil Thiram Gaucho
EXCEL 307	35.4	12,825	120	Raxil Thiram Gaucho
EXCEL 400-1	34.1	13,314	115	Raxil Thiram Gaucho
FFR 510	35.8	12,682	121	Vitavax 200
FFR 521	31.5	14,413	107	Vitavax 200
FFR 551	36.9	12,304	125	Vitavax 200
FFR 556	35.1	12,934	119	Vitavax 200
GA 92485E15	31.0	14,645	105	Dividend
Kaskaskia	32.4	14,012	110	Raxil XT Gaucho
KTS Mack	34.5	13,159	117	Raxil Thiram
KTS Medallion	36.5	12,438	123	Raxil Thiram
KY 90C-054-6	40.9	11,100	138	Dividend Apron Reldan
KY 90C-292-4-1	37.6	12,074	127	Dividend Apron Reldan
KY 91C-171-24	41.6	10,913	141	Dividend Apron Reldan
LEWIS 864	45.2	10,044	153	Gaucho
McCormick	34.4	13,198	116	Raxil Thiram Reldan
MFA Brand 766	35.5	12,789	120	Raxil XL Gaucho
MFA Brand 1828	31.3	14,505	106	Raxil XL Gaucho
MFA Brand 2020	34.0	13,353	115	Raxil XL Gaucho
MO 960903	37.3	12,172	126	Raxil Reldan Apron Gaucho
MO 980525	33.1	13,716	112	Raxil Reldan Apron Gaucho
MO 980725	33.0	13,758	112	Raxil Reldan Apron Gaucho
MPG 7921	34.3	13,236	116	Raxil XT
NK COKER 9025	35.4	12,825	120	Dividend XL
NK COKER 9152	33.4	13,593	113	Dividend XL
NK COKER 9474	29.7	15,286	100	Dividend XL
NK COKER 9663	30.3	14,983	102	Dividend XL
OH 645	32.5	13,969	110	Vitavax Captan 2020
Pioneer Variety 25R37	42.9	10,583	145	Dividend Apron XL
Pioneer Variety 25R44	35.2	12,898	119	Dividend Apron XL
Pioneer Variety 25R49	41.4	10,966	140	Dividend Apron XL
Pioneer Variety 25R78	39.3	11,552	133	Dividend Apron XL
Roane	31.6	14,367	107	Raxil XT Gaucho
Sisson	35.9	12,646	121	Raxil XT Gaucho
USG 3209	39.3	11,552	133	Raxil Thiram Lorsban
USG 3650	39.8	11,407	135	Raxil Thiram Lorsban
USG 3709	42.2	10,758	143	Raxil Thiram Lorsban
VA 98W-593	40.2	11,294	136	Raxil Thiram Reldan
WILLCROSS 730	34.6	13,121	117	Raxil XT

† Adjusted to 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 2001-2002. Fall nitrogen (N), phosphorus (P_2O_5), and potassium (K_2O) were pre-plant applied and incorporated.

Location	Predominant soil type(s)	Previous crop	2001 Planting date	Fertility Management					2002 Harvest date
				N					
				Fall	Spring	Total	P_2O_5	K_2O	
				lb/acre					
Northern									
Columbia	Mexico silt loam	soybeans	October 8	40	72	112	35	47	July 1
Novelty	Putnam silt loam	soybeans	October 23	30	60	90	40	60	July 9
Trenton†	Grundy silt loam	soybeans	October 27	36	83 §	119	92	180	July 13
Southwest									
Lamar	Parsons silt loam	soybeans	October 19	27	80	107	69	90	June 27
Mt. Vernon	Gerald silt loam	soybeans	October 18	40	80	120	40	40	June 25
Southeast									
Charleston‡	Sharkey silty clay	corn	October 29	50	95 §	145	-	150	June 20
Portageville	Tiptonville silt loam	soybeans	October 30	40	80	120	-	-	June 17

† Entries were no-till seeded directly into soybean stubble using a plot drill equipped with Acraplant™ no-till openers.
‡ Management included a fall application of Sencor and a spring application of Tilt.
§ Spring N applications were split at Trenton and Charleston. At Trenton, 41.5 lb N were applied in February and again in March while at Charleston, 45 lb N were applied in February and 50 lb N were applied in March.

Agronomic Practices
Basic agronomic practices are given in Table 3 by location. Nitrogen was applied in split fall/spring applications. Except where indicated, 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's Soil Testing Laboratory located at Columbia or by a similar private soil testing facility. Planting dates were generally determined by the fly-free date for the given location. Management practices at Charleston differed from those of the other test locations. A fall application of Sencor was made, as well as a spring application of Tilt.

Description of Data Collected

Yield All rows of each test plot were trimmed 30 inches, measured for length, and harvested using a Kincaid™ experimental plot combine. Recorded grain yields were adjusted to 13% grain moisture on comparable plot areas and reported in bushels per acre based on a 60 pound standard bushel weight. In addition to yields obtained in 2002, two-year averages (2001-02) are provided for entries tested during the previous cropping season. Three-year averages (2000-02) are also provided for those entries that have been in the Missouri tests for three consecutive years.

Test Weight and Grain Moisture Content Test weight (pounds per bushel) and percent grain moisture content were determined 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. Plots were rated on a severity scale of 0 to 9 where 0=no lodging and 9=plants in the plot completely flat.

Winter Survival Percent winter survival was estimated for each plot after initial spring green-up (approximately Feeke's GS 6) at all locations. Reported values have been rounded to the nearest percent.

Heading Date Heading dates were recorded at Columbia, Portageville, 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 after January 1) for statistical purposes. The corresponding calendar dates are also presented.

Disease Ratings Septoria tritici blotch was rated at Portageville as percentage of canopy showing symptoms. Ratings may have been confounded with symptoms of barley yellow dwarf virus and bacterial streak. Leaf rust was rated at Portageville and stripe rust at Columbia. Both diseases were rated as the percentage of the flag leaf with pustules.

Statistical Analyses and Interpretation

Data collected on all traits measured during the 2001-2002 crop season are presented in Tables 5 through 14. Data presented for individual locations were analyzed using a lattice design. Regional, state-wide, and multi-year data result from analysis based on a randomized complete block design. 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. Mean comparisons were made using Fisher's protected least significant difference (LSD) at the 0.05 probability level (p=0.05). Coefficients of variation (CV%) were calculated from the analyses of variance of 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. Table 14 ranks soft red winter wheats 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. In choosing a variety, other characteristics such as test weight, heading date, and disease resistance should also be taken into consideration. Where disease data were not reported in a particular production environment, they can be evaluated from locations in which they were rated.

2002 Test Conditions

The tests were planted into good seedbeds with slightly below average to average moisture at all locations except Novelty where excessive moisture resulted in a poor seedbed. Fall stands at all locations were good. Winter temperatures were exceptionally mild with little snow cover at most locations. Temperatures were cooler in March through the first week in April, averaging 3-4 degrees below normal state-wide. After green-up, temperatures were recorded in the low teens and single digits, causing some freeze damage to the winter wheat crop. Precipitation in March and April varied from below average in the north to above average in south. May was the second wettest May on record with many locations reporting 150-200% of normal precipitation. Weather was dry at harvest.

Throughout the state, barley yellow dwarf viral pressure was heavy, reducing yields and test weights at most locations. Additionally, serological tests for wheat streak mosaic virus were positive from samples taken from the southeast and Columbia (personal communication, Laura Kabrick, Univ. of Missouri Plant Diagnostic Lab). In the southeast, soilborne mosaic virus, wheat streak mosaic virus, barley yellow dwarf virus, leaf rust, Septoria tritici blotch, and bacterial streak all affected yields at the Portageville location. In the southwest, viral pressure from wheat streak mosaic virus and barley yellow dwarf virus was evident. A late freeze also may have reduced yields at the Lamar location. In the northern region, rainfall during heading resulted in disease pressure from Fusarium head blight (scab) at Novelty, Trenton, and Columbia. Reductions in test weight due to scab were most evident at the Novelty. Stripe rust was significant at Columbia and may have effected yield and/or test weight of varieties that were highly susceptible.

2002 Test Results

The state-wide yield of soft red winter wheats tested in 2002 was 55.7 bushels per acre (Table 5), down 6.6 bushels per acre from the 2001 test average of 63.0 bu/acre. State-wide yields were down 15.3 bushels per acre from the record high yield (71.0 bu/acre) recorded in 1997. Average yields across the seven test locations ranged from 39.3 bushels per acre at Lamar to 75.0 bushels per acre at Trenton (Table 14). Average regional yields ranged from 41.7 bushels per acre in the southwestern region to 58.5 bushels per acre in the southeastern region and 63.2 bushels per acre in the northern region of the state (Table 13).

'MO 980725', an experimental line from the University of Missouri's wheat breeding program, was the highest yielding soft red winter wheat variety tested, averaging 64.3 bushels per acre across the state (Table 5). Five proprietary varieties including: 'Excel 400-1' (63.7 bu/acre), 'MFA Brand 2020' (63.0 bu/acre), 'Lewis 864' (62.2 bu/acre), 'MFA Brand 1828' (62.1 bu/acre), and 'MFA Brand 766' (61.5 bu/acre) did not differ significantly in yield from MO 980725. Two other University of Missouri experimental lines, 'MO 980525' (63.3 bu/acre) and 'MO 960903' (61.0 bu/acre) rounded out the top yield group. Release of both MO 980725 and MO 980525 is anticipated in the August of 2002.

Regional test weights varied significantly due to differential environmental conditions and disease pressure during the 2002 crop season. State-wide, the average test weight was 56.7 pounds per bushel (Table 5), down 1.3 pounds per bushel from the state-wide average (58.0 lb/bu) recorded 2001. Location averages ranged from a low of 54.0 lb/bu at Novelty (Table 7) where disease pressure from Fusarium head blight (scab) reduced test weights, to a high of 58.6 lb/bu at Columbia (Table 6). State-wide, 'VA 98W-593' had the heaviest test weight at 59.5 lb/bu (Table 5). 'Roane' (59.3 lb/bu) and 'Lewis 864' (58.9 lb/bu) did not differ significantly from VA 98W-593.

New Variety Descriptions

Brief descriptions of newly released varieties, for which the genetic identity is known, are derived from variety release statements provided by the originators and are included for information purposes only. The inclusion of this information in this publication does not imply endorsement or exclusion of any commercially available wheat variety by the Missouri Agricultural Experiment Station.

AgriPro Mitchell

AgriPro 'Mitchell' is a soft red winter wheat developed by AgriPro Wheat at Brookston, IN. Mitchell has very good test weight, medium maturity, and medium plant height. It is moderately resistant to glume blotch, soil borne mosaic virus, and rhizoctonia and is moderately susceptible to powdery mildew, Septoria tritici blotch, and leaf rust. Mitchell has very good milling and baking characteristics. It is primarily adapted to Missouri, Illinois, Indiana, and Ohio. Mitchell was tested for the first time in the Missouri Winter Wheat Performance Tests in 2002 where it yielded 53.6 bushels per acre state-wide (Table 5). It was at or slightly above the test average in both the northern and southeastern regions of the state (Table 13).

AgriPro SAVAGE

AgriPro SAVAGE is a soft red winter wheat developed by AgriPro Wheat at Jonesboro, AR. It is a medium short wheat with mid-season maturity and strong straw strength. It has exhibited very good test weight and is resistant to moderately resistant to soilborne mosaic virus and wheat spindle streak mosaic virus. It is moderately resistant to most recent races of leaf rust and stripe rust and is moderately susceptible to powdery mildew. AgriPro SAVAGE was tested for the first time in the Missouri Winter Wheat Performance Tests in 2002 where it yielded 59.1 bushels per acre state-wide with a test weight of 57.5 pounds per bushel (Table 5). In the Missouri bootheel, SAVAGE was in the top yield group for the region (Table 13).

McCormick

'McCormick' is a soft red winter wheat that was developed and released by the Virginia Polytechnic Institute and State University and the Virginia Agricultural Experiment Station. McCormick is a mid-season, high-yielding, short-stature, awnletted, wheat with good straw strength. It is resistant to powdery mildew, stripe rust, and soil borne mosaic virus. McCormick possesses *Lr*24 conferring resistance to leaf rust and the genes *Sr*6, *Sr*17, and *Sr*24 conferring resistance to stem rust. It is moderately resistant to Septoria tritici blotch, glume blotch, barley yellow dwarf virus, and wheat spindle streak mosaic virus. It is also moderately resistant to Fusarium head blight (scab). Milling and baking quality are superior to Roane. McCormick was tested in the Missouri Winter Wheat Performance Test in 2002 where it yielded 56.6 bushels per acre with a test weight of 58.7 pounds per bushel (Table 5). It was in the top yield group at the Charleston, MO location (Table 9).

NK COKER 9152

NK COKER '9152' (formerly tested in Missouri as NK BL 940582) was developed by Syngenta Seeds, Inc., at Bay, AR. It is an early maturing, tall soft red winter wheat that has good yield potential and high test weight compared to current NK COKER varieties. It is resistant to wheat spindle streak mosaic virus and to prevalent field races of leaf rust in the Mid-South and Southeast. It is moderately resistant to moderately susceptible to Septoria tritici blotch, and is susceptible to powdery mildew. Resistance to field infestations of Hessian fly in Plains, GA in both 1999 and 2000, has been expressed. The USDA-ARS, Crop Production and Pest Control Research Unit at West Lafayette, IN showed NK COKER 9152 to be susceptible to Hessian fly biotypes E, O, and L. This variety has acceptable milling and baking qualities. NK COKER 9152 is adapted to and will be marketed in the Mid-South and the Southern US. under the Syngenta Seeds TGN (Two Great Names) grower/dealer network. TGN dealers will produce and sell certified seed in the fall of 2002. NK COKER 9152 was first tested in the Missouri Winter Wheat Performance Tests in 2001 where it was tested as NK BL 940582. Statewide, NK COKER 9152 yielded at the test average (55.1 bu/acre) with a test weight of 56.2 pounds per bushel (Table 5). It appears to be well-adapted to the southeastern region of the state where it was in the top yield group, averaging 63.4 bushels per acre across 2 locations (Table 13).

Pioneer ® Variety 25R78

Pioneer ® Variety '25R78' (XW599, PVP 200100280) is a soft red winter wheat developed and released by Pioneer Hi-Bred International, Inc. 25R78 is an awned, early heading date variety, with short plant height and strong lodging resistance. It has shown outstanding yield potential and test weight across the soft wheat growing region. 25R78 has good leaf rust and powdery mildew resistance and is moderately susceptible to fungal leaf blights. It also has good winterhardiness and has moderate resistance to the soilborne viruses. 25R78 is protected under the Plant Variety Protection Act. More detailed information on 25R78 is available on request from Pioneer, a DuPont Company. 25R78 was tested in the Missouri Winter Wheat Performance trials for the first time in 2002 where it yielded 60.3 bushels per acre with a test weight of 57.7pounds per bushel (Table 5). It was the top yielding variety in the southeastern region of the state with an average yield across 2 locations of 68.4 bushels per acre (Table 13).

2002 Missouri Winter Wheat Crop Statistics

Projected Crop Statistics

Based on July 1st USDA forecast provided by the Missouri Agricultural Statistics Service, Missouri's wheat crop was harvested from 760 thousand acres, equaling the acres harvested in 2001 (Table 4). State-wide, yields are projected to average 44 bushels per acre, down 10 bushels per acre from the 2001 yield. Yield reductions were due primarily to heavy rain throughout the state in May and early June, increasing disease levels in many

parts of the state. District yields ranged from a low of 40 bu/acre projected in both the west-central and southwestern regions to a projected high of 51 bu/acre in the northeast. Total Missouri production is projected to be 33.44 million bushels, down19 percent from 2001.

Electronic Accessibility of Data

Results of the 2002 Missouri Winter Wheat Performance Tests are available on the University of Missouri's Agricultural Electronic Bulletin Board (AgEBB) web site. Complete soft red winter wheat variety test results can be found under crop performance testing at http://agebb.missouri.edu/cropperf/ . Call (573)882-4827 to contact AgEBB's staff concerning questions or problems related to the electronic accessibility of this data.

Acknowledgments

Special Report Number 452 is a contribution of the Department of Agronomy, University of Missouri Agricultural Experiment Station. The Missouri Winter Wheat Performance Test program is partially funded by Missouri wheat farmers through bag fees assessed on foundation seed. Publication costs were absorbed by the Small Grains Breeding Program at the University of Missouri.

Special recognition goes to the following individuals who provided their time, land, and additional resources in support of this program. Their many contributions are invaluable to the success of this effort:

Mr. Peter Brewer, Farmer Cooperator
Trenton, Missouri

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

Mr. Donny Deline, Farmer Cooperator
Charleston, Missouri

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

Mr. Tim Reinbott, Superintendent
Bradford Research and Extension Center
Columbia, Missouri

Mr. David Sheat, Farmer Cooperator
Lamar, Missouri

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

In addition, the authors would like to extend special thanks to Gene Danekas, State Statistician, Missouri Agricultural Statistics Service, for supplying Missouri wheat production statistics.

Finally, we would like to thank the following individuals for their contribution to this report: Laura Kabrick at the University of Missouri's Plant Diagnostic Laboratory assisted with virus identification in plant samples from various locations and Dr. Laura Sweets, Extension Plant Pathologist, Commercial Agriculture Program, University of Missouri supplied the no-till drill used for the Trenton location. We are also grateful for the help provided by Jackie Frerking, Josh Frerking, Huangjun Lu, and Colin Williams who were invaluable to both the harvest of the tests and to data collection. Without their help, the timely publication of this report would not have been possible.

Table 4. Acreage, yield, and production of winter wheat in Missouri by reporting district. Data were provided by the Missouri Agricultural Statistics Service.

	Acres planted		Acres harvested		Yield		Production	
Reporting	2001	2002	2001	2002†	2001	2002†	2001	2002†
	1,000 acres				bu/acre		1,000 bushels	
Northwest	21.5	31	18.0	25	44.8	46	807	1,150
North-central	51.1	60	44.7	47	50.3	46	2,248	2,160
Northeast	74.4	70	64.4	61	53.8	51	3,467	3,110
West-central	127.4	143	114.8	126	55.7	40	6,394	5,030
Central	89.1	114	74.2	91	51.7	44	3,838	4,000
East-central	53.5	66	45.1	56	50.6	42	2,283	2,350
Southwest	93.3	135	81.2	104	52.5	40	4,261	4,160
South-central	9.2	14	6.2	8	47.1	44	292	350
Southeast	380.5	307	311.4	242	56.0	46	17,450	11,130
State	900.0	940	760.0	760	54.0	44	41,040	33,440

† Estimates based on the July 1 forecast.

Table 5. Performance of soft red winter wheats tested across seven locations in Missouri during 2002.

Variety	Grain yield[†]			Test weight	Grain moisture	Winter survival	Plant height	Lodging[‡]	Heading date	
	2002	2001-02	2000-						Julian	Calendar
	bu/acre			- lb/bu -	%	%	in	0-9		
AgriPro Wheat Mitchell	53.6			56.6	12.1	85	38	2	129	May 10
AgriPro Wheat Natchez	56.2	58.3		56.6	12.2	86	40	3	131	May 12
AgriPro Wheat Patton	57.3	61.7	63.0	55.8	11.9	85	37	2	128	May 09
AgriPro Wheat SAVAGE	59.1			57.5	12.2	87	36	2	128	May 09
AGS 2000	54.1	59.6	**63.4***	56.9	11.9	82	36	2	128	May 09
AR 839-25-8-2	53.7			56.1	11.8	84	38	1	131	May 12
AR 839-27-1-3	55.0	58.3		56.8	12.0	85	40	1	134	May 15
ARLA 85411	45.1			57.2	12.0	81	35	1	129	May 10
Croplan Genetics 514W	54.2			55.3	11.9	85	36	2	128	May 09
Croplan Genetics 554W	57.0			55.3	11.9	85	36	1	130	May 11
DG 4200	57.6			57.0	12.2	86	39	2	129	May 10
DG 4888	54.5			56.7	12.2	83	40	2	130	May 11
DG 5300	49.4			54.9	12.0	82	37	2	130	May 11
Dixie 900	56.8	62.4		56.7	12.2	84	40	2	129	May 10
Dixie X9512	54.5			56.8	12.2	86	39	2	128	May 09
Dixie X9611	50.5			55.3	12.1	87	38	1	130	May 11
DK 1551	53.1	58.2		55.9	11.9	83	36	1	132	May 13
DK 7777 (DK XTJ 7777)[§]	58.7	60.8		57.9	12.7	83	40	2	130	May 11
DK 7900 (DK XTJ 7900)	57.7	61.0		56.5	12.1	86	40	2	129	May 10
DK XTJ 9121 (DK 9121)	56.3	60.3		56.2	11.6	85	37	1	129	May 10
DK XTJ 9216	52.7			56.2	12.2	83	39	3	130	May 11
DK XTJ 9333	59.6	62.0		57.1	12.1	83	42	2	130	May 11
DK XTJ 9410	58.6			56.9	12.4	88	41	2	128	May 09
Ernie	59.1	56.3	55.7	56.4	11.9	87	35	2	127	May 08
EXCEL 101	53.5			56.1	12.1	84	41	3	127	May 08
EXCEL 201	60.2			56.9	12.3	87	41	2	128	May 09
EXCEL 307	60.7	**63.6***		57.4	12.3	86	41	2	129	May 10
EXCEL 400-1	**63.7***	**65.3****	**65.3****	57.2	12.3	86	40	2	129	May 10
FFR 510	54.1	58.1		55.3	12.0	88	37	2	127	May 08
FFR 521	55.3			55.0	12.0	81	33	1	127	May 08
FFR 551	52.1	55.2		55.5	11.8	84	34	2	130	May 11
FFR 556	56.3			55.5	11.9	86	36	2	130	May 11
GA 92485E15	50.2			57.6	11.8	86	38	2	130	May 11
Kaskaskia	53.7	58.5	59.5	58.7	12.4	83	40	2	133	May 14

KTS Mack	50.6			55.4	12.1	85	39	1	130	May 11
KTS Medallion	54.2			57.3	11.9	86	35	1	128	May 09
KY 90C-054-6	54.8			55.6	11.8	88	38	2	131	May 12
KY 90C-292-4-1	54.5	57.7		56.7	11.9	86	36	1	129	May 10
KY 91C-171-24	48.7	54.6		57.8	12.3	86	37	1	130	May 11
LEWIS 864	**62.2***			**58.9***	12.3	80	41	2	133	May 14
McCormick	56.6			58.7	12.4	83	34	1	130	May 11
MFA Brand 766	**61.5***	**63.1***		57.7	11.8	86	36	2	127	May 08
MFA Brand 1828	**62.1***	**63.2***	63.0	56.9	12.3	87	41	2	129	May 10
MFA Brand 2020	**63.0***			57.3	12.4	87	40	2	128	May 09
MO 960903	**61.0***	61.8	**63.5***	56.8	12.2	86	42	2	128	May 09
MO 980525	**63.3***	**63.4***	63.0	58.2	12.5	86	41	2	134	May 15
MO 980725	**64.3****			58.3	12.5	85	40	3	129	May 10
MPG 7921	51.6	59.6	62.8	55.1	12.0	84	39	2	129	May 10
NK COKER 9025	48.9	53.7	56.9	54.8	12.1	86	35	2	131	May 12
NK COKER 9152 (NK BL 940582)	55.1	59.8		56.2	11.7	85	40	2	129	May 10
NK COKER 9474	47.4	54.0	53.9	58.6	12.1	83	34	1	129	May 10
NK COKER 9663	55.0	60.3	60.8	57.9	12.4	85	39	2	129	May 10
OH 645	51.6			57.2	12.0	84	39	1	131	May 12
Pioneer Variety 25R37	58.7	**64.7***		58.0	12.2	83	37	1	132	May 13
Pioneer Variety 25R44	56.3	60.4		57.3	12.2	83	36	1	131	May 12
Pioneer Variety 25R49	56.8	62.4		55.9	12.3	85	36	2	129	May 10
Pioneer Variety 25R78	60.3			57.7	12.2	87	35	1	128	May 09
Roane	60.4	61.8	**64.0***	**59.3***	12.3	82	36	2	132	May 13
Sisson	53.5	56.1	60.4	55.7	11.8	85	34	3	128	May 09
USG 3209	53.8	56.4	60.6	55.8	12.1	82	34	2	129	May 10
USG 3650	50.2			56.5	12.3	85	37	2	132	May 13
USG 3709	55.3	60.8	62.3	55.2	12.1	84	39	2	129	May 10
VA 98W-593	55.2			**59.5****	12.3	83	34	2	130	May 11
WILLCROSS 730	54.7	59.8	62.2	54.9	12.0	87	39	2	129	May 10
Average	55.7	59.8	61.2	56.7	12.1	84.7	37.9	1.8	129	May 10
LSD (0.05)	3.5	2.7	2.0	0.6	0.2	3.5	0.9	0.4	3.2	
CV%	12.1	12.3	10.5	1.9	2.9	7.8	4.8	38.3	3.1	
Location years	7	14	20	7	7	7	7	7	3	

** Indicates the highest yielding variety in the column.

* Indicates varieties that do not differ in yield from the highest yielding variety based on Fisher's protected LSD (p=0.05).

† Yields are based on 60 pound standard bushel weight adjusted to 13.0 percent moisture content of the grain. Three-year data were compiled without the 2000 Mt. Vernon location which was lost due to heavy viral pressure and persistent rainfall at harvest.

‡ Lodging rated on a 0 to 9 scale where 0 = no lodging and 9 = plants in the plot completely flat.

§ Number in parentheses is the experimental number under which the variety was tested in the 2001 Missouri Winter Wheat Performance Tests.

Table 6. Performance of soft red winter wheats tested near Columbia, Missouri during 2002.

Variety	Grain yield[†]			Test weight	Grain moisture	Winter survival	Plant height	Lodgin	Heading date		Stripe rust[§]
	2002	2001-02	2000-02						Julian	Calendar	
	bu/acre			- lb/bu -	%	%	in	0-9			%
AgriPro Wheat Mitchell	49.9			59.3	11.5	89	38	1	128	May 09	0.0
AgriPro Wheat Natchez	47.5	63.8		58.0	11.5	89	38	2	128	May 09	0.0
AgriPro Wheat Patton	53.4	67.5	64.6	58.8	11.3	90	36	2	126	May 07	43.5
AgriPro Wheat SAVAGE	52.7			58.5	11.8	90	36	1	127	May 08	0.1
AGS 2000	42.9	64.5	66.4	58.5	11.3	86	35	1	125	May 06	2.1
AR 839-25-8-2	44.9			57.3	11.5	87	36	1	129	May 10	0.0
AR 839-27-1-3	50.4	62.8		58.3	11.3	88	38	1	131	May 12	0.0
ARLA 85411	35.8			59.2	11.3	88	34	1	127	May 08	0.0
Croplan Genetics 514W	51.8			58.2	11.5	87	36	2	125	May 06	49.3
Croplan Genetics 554W	58.2			56.8	11.3	90	34	1	128	May 09	0.8
DG 4200	44.6			58.0	11.3	89	37	2	128	May 09	0.0
DG 4888	44.1			58.6	11.3	86	40	1	127	May 08	0.0
DG 5300	38.1			55.9	11.5	83	35	1	128	May 09	0.0
Dixie 900	44.5	68.0		58.0	11.5	89	38	2	128	May 09	0.0
Dixie X9512	40.2			58.8	11.5	90	38	1	125	May 06	0.0
Dixie X9611	45.0			56.8	11.5	88	37	1	128	May 09	0.3
DK 1551	39.9	65.1		58.2	11.5	86	33	1	130	May 11	0.3
DK 7777 (DK XTJ 7777)[¶]	52.8	**71.2***		60.0	12.0	86	39	1	128	May 09	0.0
DK 7900 (DK XTJ 7900)	48.4	66.3		58.2	11.3	89	40	1	126	May 07	0.0
DK XTJ 9121 (DK 9121)	51.3	67.0		58.0	11.0	89	35	1	127	May 08	15.5
DK XTJ 9216	41.0			57.3	11.8	87	38	2	128	May 09	0.0
DK XTJ 9333	54.7	**70.4***		58.7	11.3	86	41	2	127	May 08	0.0
DK XTJ 9410	42.8			58.4	11.5	89	40	2	126	May 07	0.0
Ernie	48.4	62.7	58.9	58.6	11.3	90	34	2	125	May 06	56.0
EXCEL 101	47.9			58.4	11.5	85	40	2	126	May 07	0.0
EXCEL 201	49.7			58.7	11.5	89	40	2	126	May 07	0.0
EXCEL 307	49.7	68.4		58.5	11.5	91	40	2	127	May 08	0.0
EXCEL 400-1	56.8	**73.2***	**70.6***	58.6	11.5	90	41	2	126	May 07	0.0
FFR 510	51.1	66.3		57.9	11.5	91	37	2	125	May 06	52.9
FFR 521	47.3			58.7	11.5	87	33	1	124	May 05	0.3
FFR 551	43.9	61.4		57.1	11.5	86	32	1	127	May 08	60.8
FFR 556	56.6			56.8	11.5	85	36	1	128	May 09	1.6
GA 92485E15	43.3			59.8	11.5	88	37	1	125	May 06	14.5
Kaskaskia	42.9	63.1	63.1	60.1	11.8	87	37	2	133	May 14	0.0

KTS Mack	44.4			56.8	11.5	86	36	1	129	May 10	0.5
KTS Medallion	51.1			59.5	11.5	90	35	1	125	May 06	0.0
KY 90C-054-6	46.8			58.0	11.5	89	36	2	129	May 10	0.1
KY 90C-292-4-1	40.3	61.5		58.2	11.5	90	37	1	126	May 07	0.0
KY 91C-171-24	38.4	62.4		58.8	11.8	91	35	1	128	May 09	0.0
LEWIS 864	**62.1***			60.3	11.5	86	41	2	130	May 11	0.0
McCormick	46.4			60.2	11.3	87	33	1	127	May 08	0.0
MFA Brand 766	54.4	69.5		60.2	11.5	88	35	2	124	May 05	0.1
MFA Brand 1828	57.7	**72.6***	**71.2****	58.5	11.5	85	40	2	126	May 07	0.0
MFA Brand 2020	53.0			58.5	11.5	89	39	2	127	May 08	0.0
MO 960903	57.4	**70.8***	**70.0***	59.2	11.3	90	40	2	127	May 08	9.0
MO 980525	**65.2****	**74.4****	**69.5***	59.5	12.3	88	39	2	132	May 13	0.0
MO 980725	**61.4***			59.8	11.8	86	38	2	127	May 08	0.0
MPG 7921	47.4	69.4	**69.2***	58.2	11.8	90	38	1	129	May 10	1.3
NK COKER 9025	50.2	64.5	62.8	57.5	12.0	88	34	1	130	May 11	36.0
NK COKER 9152 (NK BL 940582)	45.4	63.3		57.8	11.3	86	38	2	127	May 08	0.1
NK COKER 9474	41.4	61.9	57.5	60.2	11.5	88	30	1	128	May 09	0.1
NK COKER 9663	53.5	**70.0***	**67.5***	58.8	11.8	87	36	2	126	May 07	0.0
OH 645	44.9			58.7	11.5	87	38	1	130	May 11	0.0
Pioneer Variety 25R37	51.7	**72.4***		59.1	11.5	90	34	1	128	May 09	0.0
Pioneer Variety 25R44	48.0	68.7		59.3	11.5	85	34	1	130	May 11	0.3
Pioneer Variety 25R49	46.8	**71.1***		58.5	12.0	88	35	1	127	May 08	0.0
Pioneer Variety 25R78	47.4			59.7	11.5	87	35	2	127	May 08	4.8
Roane	58.6	**72.1***	**70.2***	**60.8***	11.5	87	34	1	130	May 11	0.3
Sisson	44.0	62.9	66.0	56.8	11.5	84	33	2	126	May 07	66.8
USG 3209	49.2	68.5	66.6	58.2	11.5	84	33	1	126	May 07	0.0
USG 3650	41.9			59.0	11.5	86	34	1	128	May 09	0.0
USG 3709	52.0	**70.4***	**69.7***	58.3	11.3	89	39	2	128	May 09	3.5
VA 98W-593	47.0			**61.5****	11.5	89	32	1	129	May 10	0.3
WILLCROSS 730	48.6	68.3	67.0	58.2	11.8	90	39	2	127	May 08	11.8
Average	48.6	67.3	66.5	58.6	11.5	87.8	36.5	1.5	127	May 08	6.8
LSD (0.05)	5.7	4.5	3.7	0.9	0.4	4.4	1.6	0.5	1.6		12.4
CV%	8.1	6.8	7.0	1.0	2.5	3.5	3.0	21.2	0.9		131.1

** Indicates the highest yielding variety in the column.

* Indicates varieties that do not differ in yield from the highest yielding variety based on Fisher's protected LSD (p=0.05).

† Yields are based on 60 pound standard bushel weight adjusted to 13.0 percent moisture content of the grain.

‡ Lodging rated on a 0 to 9 scale where 0 = no lodging and 9 = plants in the plot completely flat.

§ Percent of flag leaf showing symptoms of stripe rust.

¶ Number in parentheses is the experimental number under which the variety was tested in the 2001 Missouri Winter Wheat Performance Tests.

Table 7. Performance of soft red winter wheats tested at Novelty, Missouri during 2002.

Variety	Grain yield†			Test weight	Grain moisture	Winter survival	Plant height	Lodging‡	Heading date	
	2002	2001-02	2000-02						Julian	Calendar
	bu/acre			- lb/bu -	%	%	in	0-9		
AgriPro Wheat Mitchell	71.1			55.6	12.1	79	42	2	140	May 21
AgriPro Wheat Natchez	64.4	58.8		54.5	11.6	78	44	3	146	May 27
AgriPro Wheat Patton	73.8	**65.6***	**73.8****	53.8	11.6	82	40	3	140	May 21
AgriPro Wheat SAVAGE	65.2			**56.3***	11.8	75	37	2	141	May 22
AGS 2000	56.9	52.5	61.4	53.4	11.5	67	40	1	142	May 23
AR 839-25-8-2	54.0			52.3	11.2	77	41	1	143	May 24
AR 839-27-1-3	57.2	50.2		53.6	11.4	79	44	1	145	May 26
ARLA 85411	57.1			54.1	11.0	79	41	1	143	May 24
Croplan Genetics 514W	62.7			51.8	11.2	75	37	3	140	May 21
Croplan Genetics 554W	66.0			52.8	11.5	77	39	2	143	May 24
DG 4200	**77.6***			54.5	12.0	76	42	2	141	May 22
DG 4888	69.8			54.2	12.0	76	43	3	144	May 25
DG 5300	63.4			53.3	11.5	74	42	2	142	May 23
Dixie 900	**75.8***	**66.7****		54.8	11.8	76	41	2	140	May 21
Dixie X9512	69.0			54.2	11.6	81	43	2	142	May 23
Dixie X9611	64.0			53.5	11.5	79	41	1	142	May 23
DK 1551	59.1	54.7		52.5	11.0	77	38	1	142	May 23
DK 7777 (DK XTJ 7777)§	65.0	56.8		55.3	12.0	76	43	2	143	May 24
DK 7900 (DK XTJ 7900)	74.4	59.2		53.9	11.4	77	43	2	141	May 22
DK XTJ 9121 (DK 9121)	68.2	**62.2***		54.5	10.9	74	39	2	140	May 21
DK XTJ 9216	69.5			53.3	11.6	72	42	4	141	May 22
DK XTJ 9333	70.2	57.0		54.3	11.9	73	45	2	142	May 23
DK XTJ 9410	**75.6***			55.1	12.1	83	44	3	139	May 20
Ernie	**76.8***	**64.1***	67.4	55.3	11.5	80	37	4	139	May 20
EXCEL 101	67.3			54.2	11.4	80	42	3	139	May 20
EXCEL 201	**76.3***			53.8	11.5	79	45	3	140	May 21
EXCEL 307	**80.4***	**65.9***		55.2	12.1	78	41	3	141	May 22
EXCEL 400-1	**77.1***	**64.3***	**72.6***	54.3	11.5	83	43	3	142	May 23
FFR 510	64.9	56.8		52.0	11.5	77	40	2	139	May 20
FFR 521	58.7			49.3	11.3	73	35	1	140	May 21
FFR 551	61.4	55.6		53.0	11.5	75	37	3	143	May 24
FFR 556	64.8			53.3	11.4	77	37	2	145	May 26
GA 92485E15	59.5			53.4	11.2	77	41	2	144	May 25
Kaskaskia	64.2	54.5	62.6	55.5	11.7	69	45	2	141	May 22

KTS Mack	63.9			53.4	11.8	81	42	1	142	May 23
KTS Medallion	68.3			53.8	11.4	78	37	1	140	May 21
KY 90C-054-6	61.0			52.6	11.0	81	44	2	143	May 24
KY 90C-292-4-1	68.3	55.8		54.4	11.4	81	40	2	142	May 23
KY 91C-171-24	60.0	48.3		**56.4***	12.0	78	39	1	143	May 24
LEWIS 864	64.9			**57.1****	11.7	59	44	2	145	May 26
McCormick	71.8			**57.0***	11.7	82	35	2	143	May 24
MFA Brand 766	72.4	**65.4***		55.8	11.3	80	36	4	140	May 21
MFA Brand 1828	73.9	**64.3***	**68.5***	53.6	11.8	81	42	3	140	May 21
MFA Brand 2020	**80.7****			54.6	11.6	77	42	3	139	May 20
MO 960903	65.5	56.0	64.6	54.1	11.6	77	43	2	141	May 22
MO 980525	67.6	**61.1***	66.9	55.3	12.0	78	43	3	144	May 25
MO 980725	**77.8***			55.6	12.3	80	42	3	141	May 22
MPG 7921	49.4	48.4	59.3	50.7	11.0	73	42	1	142	May 23
NK COKER 9025	58.3	49.0	58.6	51.6	11.7	79	40	2	142	May 23
NK COKER 9152 (NK BL 940582)	61.2	53.0		53.2	11.1	79	43	2	143	May 24
NK COKER 9474	67.7	58.6	67.2	**56.6***	11.9	78	39	2	141	May 22
NK COKER 9663	60.9	58.5	66.3	55.5	12.0	75	42	2	143	May 24
OH 645	57.8			53.9	11.8	76	42	1	144	May 25
Pioneer Variety 25R37	66.4	**61.1***		55.7	11.8	77	39	1	142	May 23
Pioneer Variety 25R44	60.8	56.3		54.0	11.5	71	39	1	144	May 25
Pioneer Variety 25R49	67.8	57.1		52.8	11.2	79	38	2	142	May 23
Pioneer Variety 25R78	70.2			54.5	11.5	78	37	1	140	May 21
Roane	70.6	**62.2***	68.0	**56.6***	11.8	73	38	3	143	May 24
Sisson	65.9	54.6	64.4	53.8	11.5	74	36	3	140	May 21
USG 3209	59.2	52.0	60.9	52.9	11.5	63	38	3	142	May 23
USG 3650	62.0			53.3	11.7	75	41	2	145	May 26
USG 3709	49.7	46.4	55.5	51.0	11.5	76	41	2	142	May 23
VA 98W-593	68.0			**56.7***	11.8	77	38	2	142	May 23
WILLCROSS 730	53.2	51.3	60.6	50.3	11.3	76	42	0	141	May 22
Average	66.0	57.3	64.6	54.0	11.6	76.6	40.6	2.1	142	May 23
LSD (0.05)	5.6	6.3	5.4	1.2	0.5	6.4	2.1	1.0	2.8	
CV%	5.7	11.1	10.4	1.5	3.0	5.7	3.5	31.2	1.4	

** Indicates the highest yielding variety in the column.

* Indicates varieties that do not differ in yield from the highest yielding variety based on Fisher's protected LSD (p=0.05).

† Yields are based on 60 pound standard bushel weight adjusted to 13.0 percent moisture content of the grain.

‡ Lodging rated on a 0 to 9 scale where 0 = no lodging and 9 = plants in the plot completely flat.

§ Number in parentheses is the experimental number under which the variety was tested in the 2001 Missouri Winter Wheat Performance Tests.

Table 8. Performance of soft red winter wheats tested near Trenton, Missouri during 2002.

Variety	Grain yield†			Test weight	Grain moisture	Winter survival	Plant height	Lodging†
	2002	2001-02	2000-02					
	bu/acre			- lb/bu -	%	%	in	0-9
AgriPro Wheat Mitchell	74.9			57.5	12.0	86	38	1
AgriPro Wheat Natchez	71.5	60.3		58.0	12.0	80	42	2
AgriPro Wheat Patton	**79.7***	**64.1***	**61.8***	57.0	11.8	79	37	2
AgriPro Wheat SAVAGE	76.0			59.0	12.0	85	36	1
AGS 2000	71.8	57.6	**61.3***	58.8	12.0	74	38	2
AR 839-25-8-2	68.9			57.8	11.5	72	40	1
AR 839-27-1-3	65.1	52.2		58.8	12.0	81	42	1
ARLA 85411	61.1			57.8	11.8	70	37	1
Croplan Genetics 514W	74.7			57.8	12.0	82	36	2
Croplan Genetics 554W	73.3			57.5	12.0	82	36	1
DG 4200	**83.5***			58.0	12.0	84	40	2
DG 4888	75.8			58.0	12.3	84	41	2
DG 5300	69.7			57.3	12.0	79	39	2
Dixie 900	**81.6***	**65.5***		57.0	12.0	80	39	2
Dixie X9512	**79.3***			57.5	12.0	85	39	2
Dixie X9611	74.8			57.5	11.7	78	39	1
DK 1551	74.0	56.4		59.0	12.0	86	38	2
DK 7777 (DK XTJ 7777)§	71.2	56.4		58.8	12.0	84	39	1
DK 7900 (DK XTJ 7900)	**78.0***	58.7		57.5	12.0	85	40	2
DK XTJ 9121 (DK 9121)	**80.3***	61.7		57.3	11.5	82	38	1
DK XTJ 9216	66.1			58.0	12.0	79	38	2
DK XTJ 9333	73.1	58.4		58.0	11.7	82	42	1
DK XTJ 9410	**83.5***			58.3	12.0	86	42	2
Ernie	**77.6***	61.9	56.7	57.8	11.8	83	36	2
EXCEL 101	74.2			58.0	12.0	83	40	2
EXCEL 201	**79.6***			57.5	11.8	86	39	2
EXCEL 307	76.6	62.0		58.8	12.0	80	40	2
EXCEL 400-1	**84.1****	**69.3****	**64.8****	58.3	12.2	79	41	2
FFR 510	71.6	53.6		57.3	12.0	85	35	2
FFR 521	65.9			54.8	11.8	76	33	1
FFR 551	73.4	53.3		57.3	11.5	83	35	2
FFR 556	76.2			57.8	12.0	81	35	1
GA 92485E15	74.7			**60.3***	12.0	79	39	1
Kaskaskia	75.1	62.4	57.7	**60.0***	12.2	78	41	1

KTS Mack	74.6			57.0	12.0	84	39	1
KTS Medallion	70.5			58.3	12.0	86	34	1
KY 90C-054-6	**78.4***			57.5	12.0	83	42	2
KY 90C-292-4-1	**77.4***	58.2		59.5	12.0.	83	36	1
KY 91C-171-24	66.8	47.5		**59.8***	12.0	85	37	1
LEWIS 864	**80.7***			**60.5***	12.0	80	41	1
McCormick	75.1			59.5	12.0	79	33	1
MFA Brand 766	72.5	59.4		59.5	12.0	80	34	2
MFA Brand 1828	**79.9***	**63.6***	**61.0***	58.5	12.3	84	41	2
MFA Brand 2020	**77.4***			58.0	12.0	86	40	2
MO 960903	75.5	60.2	**60.5***	57.8	12.0	84	42	2
MO 980525	71.3	59.5	59.1	59.0	12.5	79	40	1
MO 980725	**81.9***			59.0	12.2	82	40	2
MPG 7921	72.5	60.2	**61.0***	57.0	11.8	82	38	1
NK COKER 9025	67.7	48.9	52.1	56.5	11.8	81	36	1
NK COKER 9152 (NK BL 940582)	76.0	61.1		58.8	11.5	79	42	2
NK COKER 9474	75.6	59.2	52.4	**61.0****	12.0	74	36	1
NK COKER 9663	72.8	58.8	56.5	59.0	12.3	79	42	2
OH 645	74.5			58.3	12.0	79	40	1
Pioneer Variety 25R37	70.6	57.3		58.5	12.0	73	36	1
Pioneer Variety 25R44	**80.8***	59.9		59.5	12.0	78	36	1
Pioneer Variety 25R49	**80.0***	60.7		57.0	12.0	80	35	1
Pioneer Variety 25R78	**80.3***			**60.5***	12.0	85	36	2
Roane	**78.4***	61.4	**60.7***	**61.0****	12.0	81	35	2
Sisson	70.4	53.6	57.0	56.5	11.8	83	34	2
USG 3209	74.3	56.8	59.8	57.5	12.0	81	36	2
USG 3650	75.4			57.8	11.8	80	38	1
USG 3709	73.7	55.6	56.6	56.5	12.0	77	40	1
VA 98W-593	**79.4***			**60.0***	12.2	78	35	1
WILLCROSS 730	76.2	56.2	58.4	56.0	12.0	81	40	1
Average	75.0	58.6	58.7	58.2	12.0	80.9	38.2	1.5
LSD (0.05)	7.1	6.0	4.7	1.3	0.4	9.0	1.6	0.6
CV%	6.8	10.4	10.0	1.6	2.5	7.6	2.9	31.5

** Indicates the highest yielding variety in the column.

* Indicates varieties that do not differ in yield from the highest yielding variety based on Fisher's protected LSD (p=0.05).

† Yields are based on 60 pound standard bushel weight adjusted to 13.0 percent moisture content of the grain.

‡ Lodging rated on a 0 to 9 scale where 0 = no lodging and 9 = plants in the plot completely flat.

§ Number in parentheses is the experimental number under which the variety was tested in the 2001 Missouri Winter Wheat Performance Tests.

Table 9. Performance of soft red winter wheats tested at Charleston†, Missouri during 2002.

Variety	Grain yield‡			Test weight	Grain moisture	Winter survival	Plant height	Lodging§
	2002	2001-02	2000-02					
	---------- bu/acre ----------			- lb/bu -	%	%	in	0-9
AgriPro Wheat Mitchell	62.2			58.3	11.0	93	40	3
AgriPro Wheat Natchez	61.6	67.2		58.2	11.3	93	41	2
AgriPro Wheat Patton	**67.6***	**80.6***	**84.1****	57.0	10.5	84	39	2
AgriPro Wheat SAVAGE	64.9			57.5	11.0	96	36	2
AGS 2000	61.6	69.5	74.6	56.4	11.0	89	37	3
AR 839-25-8-2	55.8			56.8	11.0	87	37	1
AR 839-27-1-3	60.6	72.8		58.3	11.0	88	41	1
ARLA 85411	50.6			57.5	10.8	92	36	2
Croplan Genetics 514W	53.0			53.0	10.8	89	37	2
Croplan Genetics 554W	61.7			56.0	11.0	92	36	2
DG 4200	60.6			58.2	11.5	91	41	2
DG 4888	65.7			58.3	11.0	87	42	2
DG 5300	62.4			55.7	11.0	84	39	2
Dixie 900	62.2	74.6		57.3	11.0	89	41	2
Dixie X9512	62.6			58.0	11.0	90	40	2
Dixie X9611	61.4			57.5	10.8	92	40	1
DK 1551	63.9	**79.3***		57.4	11.0	86	36	1
DK 7777 (DK XTJ 7777)¶	64.6	74.3		59.5	11.5	88	40	2
DK 7900 (DK XTJ 7900)	**67.9***	**79.6***		58.3	11.0	90	41	2
DK XTJ 9121 (DK 9121)	63.8	**79.0***		58.3	10.0	94	38	2
DK XTJ 9216	60.8			58.0	11.0	87	40	2
DK XTJ 9333	**70.0***	**77.4***		58.5	10.8	89	43	2
DK XTJ 9410	**67.2***			58.3	11.0	91	41	2
Ernie	64.1	61.4	63.0	56.2	11.0	91	34	2
EXCEL 101	56.4			56.0	10.3	87	41	3
EXCEL 201	**68.9***			57.8	11.3	90	40	2
EXCEL 307	65.8	**79.2***		59.0	11.0	91	42	2
EXCEL 400-1	**74.3****	**80.9***	**79.9***	58.7	11.0	93	42	2
FFR 510	54.1	71.5		53.0	10.5	95	37	3
FFR 521	58.4			53.8	10.8	84	33	1
FFR 551	54.7	64.7		55.0	11.0	90	36	4
FFR 556	59.0			56.2	10.8	93	36	3
GA 92485E15	55.6			57.8	11.0	90	38	2
Kaskaskia	54.3	69.6	72.8	**60.0***	11.0	90	41	2

KTS Mack	56.6			56.0	11.0	88	41	1
KTS Medallion	57.4			58.3	11.0	90	37	1
KY 90C-054-6	64.9			56.7	11.0	93	38	3
KY 90C-292-4-1	**66.0***	**76.6***		57.2	11.0	89	37	1
KY 91C-171-24	58.6	73.0		59.2	11.0	93	40	2
LEWIS 864	65.6			**59.7***	11.0	89	41	1
McCormick	**66.1***			**60.0***	11.3	93	34	1
MFA Brand 766	65.5	69.6		57.5	11.0	89	36	2
MFA Brand 1828	**68.2***	**78.9***	77.1	58.3	11.0	93	42	2
MFA Brand 2020	**73.0***			58.8	11.0	91	42	2
MO 960903	**67.8***	**78.0***	**80.9***	57.5	11.0	91	43	3
MO 980525	**70.5***	**81.4***	76.6	**59.8***	11.0	93	43	2
MO 980725	57.4			**59.7***	11.3	88	40	2
MPG 7921	56.3	**78.9***	**81.4***	55.2	10.7	87	41	2
NK COKER 9025	49.3	71.2	70.1	55.8	10.8	91	37	3
NK COKER 9152 (NK BL 940582)	**66.7***	**77.2***		55.8	10.3	93	41	2
NK COKER 9474	49.7	64.3	63.2	**60.0***	11.0	91	35	1
NK COKER 9663	61.3	72.8	74.3	58.5	11.0	90	38	2
OH 645	56.9			58.8	11.0	93	41	2
Pioneer Variety 25R37	**66.3***	**84.5****		**60.0***	11.0	91	38	1
Pioneer Variety 25R44	59.6	73.4		58.3	11.0	93	37	2
Pioneer Variety 25R49	60.9	**76.9***		55.7	11.0	90	37	2
Pioneer Variety 25R78	**72.7***			58.0	11.0	92	37	1
Roane	61.0	74.0	**78.6***	**60.8****	11.0	85	37	1
Sisson	48.4	69.1	75.4	55.0	10.8	89	34	3
USG 3209	57.8	75.1	**78.5***	56.2	11.0	87	34	3
USG 3650	59.1			57.0	11.2	92	39	2
USG 3709	**66.1***	**79.3***	**78.5***	55.9	11.0	88	41	2
VA 98W-593	**66.3***			**60.7***	11.5	93	36	2
WILLCROSS 730	63.2	**77.9***	**78.8***	54.8	10.7	92	39	2
Average	61.8	74.7	75.8	57.5	11.0	90.2	38.7	2.0
LSD (0.05)	8.3	8.1	6.9	1.2	0.4	7.2	2.1	0.9
CV%	9.2	11.1	11.3	1.5	2.9	5.5	3.7	30.3

** Indicates the highest yielding variety in the column.

* Indicates varieties that do not differ in yield from the highest yielding variety based on Fisher's protected LSD (p=0.05).

† Management included a fall application of Sencor and a spring application of Tilt.

‡ Yields are based on 60 pound standard bushel weight adjusted to 13.0 percent moisture content of the grain.

§ Lodging rated on a 0 to 9 scale where 0 = no lodging and 9 = plants in the plot completely flat.

¶ Number in parentheses is the experimental number under which the variety was tested in the 2001 Missouri Winter Wheat Performance Tests.

Table 10. Performance of soft red winter wheats tested at Portageville, Missouri during 2002.

Variety	Grain yield[†]			Test	Grain	Winter	Plant		Heading date		Leaf	
	2002	2001-02	2000-02	weight	moisture	survival	height	Lodging[‡]	Julian	Calendar	rust[§]	Septoria[§]
	---------- bu/acre ----------			lb/bu	%	%	in	0-9			%	%
AgriPro Wheat Mitchell	57.4			55.3	11.8	79	36	2	118	April 29	7.2	71.0
AgriPro Wheat Natchez	**60.6***	55.8		55.8	12.0	86	36	2	119	April 30	1.3	54.8
AgriPro Wheat Patton	50.8	52.5	51.8	54.0	11.0	81	35	2	118	April 29	3.5	58.9
AgriPro Wheat SAVAGE	**62.3***			56.5	11.8	86	35	2	116	April 27	5.7	43.6
AGS 2000	**60.7***	56.9	**58.2***	57.3	11.8	86	35	2	118	April 29	2.2	51.2
AR 839-25-8-2	**59.5***			55.3	11.0	84	34	1	119	April 30	2.8	40.6
AR 839-27-1-3	57.5	**59.9***		56.8	11.3	84	37	2	124	May 05	2.1	42.6
ARLA 85411	50.6			56.8	11.3	79	33	1	118	April 29	2.2	65.4
Croplan Genetics 514W	47.2			54.0	11.3	83	35	2	117	April 28	6.4	84.6
Croplan Genetics 554W	57.8			54.8	11.0	85	34	1	117	April 28	14.8	75.0
DG 4200	51.1			56.3	12.0	84	37	2	119	April 30	4.2	57.4
DG 4888	53.1			55.5	12.0	84	37	2	119	April 30	2.6	66.6
DG 5300	55.7			54.5	11.5	81	34	2	121	May 02	6.4	52.1
Dixie 900	52.6	53.5		56.0	12.0	84	38	2	119	April 30	3.1	49.1
Dixie X9512	50.6			55.8	12.0	85	37	2	117	April 28	4.9	68.3
Dixie X9611	52.8			54.3	11.5	87	36	2	119	April 30	0.7	47.3
DK 1551	53.8	55.3		54.8	11.0	76	32	1	122	May 03	6.6	63.2
DK 7777 (DK XTJ 7777)[¶]	56.3	54.1		57.0	12.0	80	38	2	119	April 30	8.8	66.2
DK 7900 (DK XTJ 7900)	52.5	48.9		56.0	11.8	83	38	2	119	April 30	6.0	57.3
DK XTJ 9121 (DK 9121)	53.7	53.6		56.3	11.5	86	35	2	119	April 30	0.6	50.6
DK XTJ 9216	51.2			55.0	11.8	87	36	2	121	May 02	1.9	51.5
DK XTJ 9333	51.0	52.0		56.8	12.0	82	38	2	121	May 02	2.3	49.8
DK XTJ 9410	55.3			56.0	12.0	85	40	2	117	April 28	1.7	59.1
Ernie	47.6	43.8	41.8	54.0	11.5	87	31	3	116	April 27	16.3	68.6
EXCEL 101	46.9			55.3	11.8	86	39	3	117	April 28	6.7	68.7
EXCEL 201	53.5			56.3	12.0	86	36	2	117	April 28	2.7	58.8
EXCEL 307	56.4	54.8		56.8	12.0	83	39	2	118	April 29	1.7	44.1
EXCEL 400-1	55.6	53.4	52.1	56.5	12.0	80	36	2	119	April 30	2.9	47.9
FFR 510	47.9	54.5		54.8	11.3	84	35	2	117	April 28	5.8	73.7
FFR 521	50.8			55.3	11.5	87	32	1	118	April 29	6.0	47.4
FFR 551	52.4	53.3		55.5	11.5	85	31	2	119	April 30	9.8	54.7
FFR 556	56.9			54.8	11.5	88	33	1	117	April 28	10.9	64.9
GA 92485E15	52.4			57.0	11.5	84	35	2	120	May 01	2.5	63.1
Kaskaskia	55.5	52.0	50.7	**58.3***	12.0	85	38	3	124	May 05	2.0	44.6

KTS Mack	55.6			55.3	11.8	88	37	1	121	May 02	1.6	58.9
KTS Medallion	49.3			56.5	11.3	83	33	1	118	April 29	2.3	45.8
KY 90C-054-6	**60.2***			55.3	11.3	85	34	2	122	May 03	4.3	58.9
KY 90C-292-4-1	49.8	51.1		55.5	11.0	83	30	2	120	May 01	15.7	69.0
KY 91C-171-24	**63.2***	**62.1***		56.8	11.8	80	36	2	118	April 29	14.8	56.2
LEWIS 864	49.3			**59.0****	12.0	84	37	2	125	May 06	1.5	38.2
McCormick	56.4			57.5	12.0	78	32	1	119	April 30	2.3	42.9
MFA Brand 766	**59.4***	**57.6***		55.0	11.0	81	35	3	116	April 27	8.7	59.1
MFA Brand 1828	55.4	51.9	50.4	56.0	12.0	86	39	2	119	April 30	2.3	56.9
MFA Brand 2020	55.2			56.8	12.0	83	36	2	118	April 29	4.2	51.8
MO 960903	**60.9***	55.3	52.2	56.5	12.0	88	38	3	115	April 26	1.4	40.4
MO 980525	52.4	50.6	52.3	**58.5***	12.0	89	39	2	127	May 08	1.4	41.4
MO 980725	**61.3***			57.5	12.3	83	39	2	119	April 30	11.3	53.5
MPG 7921	56.2	56.7	**58.4***	54.3	11.5	83	36	2	117	April 28	15.0	79.5
NK COKER 9025	55.4	52.6	55.4	55.5	12.0	84	32	1	121	May 02	6.2	52.0
NK COKER 9152 (NK BL 940582)	**61.6***	**59.3***		54.8	11.0	87	38	2	117	April 28	1.5	57.0
NK COKER 9474	43.5	46.8	44.8	**58.3***	11.5	81	33	2	120	May 01	0.8	53.9
NK COKER 9663	57.6	52.4	51.6	57.0	12.3	88	36	2	118	April 29	0.8	45.8
OH 645	54.3			56.0	11.5	80	38	1	120	May 01	12.0	70.5
Pioneer Variety 25R37	**63.7***	**63.4****		**58.0***	12.0	78	36	1	120	May 01	5.9	46.3
Pioneer Variety 25R44	**64.6****	**60.8***		56.8	11.8	85	34	2	120	May 01	3.4	44.9
Pioneer Variety 25R49	**63.2***	**63.0***		56.0	12.0	86	34	2	119	April 30	3.6	56.1
Pioneer Variety 25R78	**63.1***			56.5	11.8	86	33	1	118	April 29	9.2	56.5
Roane	**61.8***	55.5	**57.1***	**58.8***	11.8	83	35	2	122	May 03	2.6	39.0
Sisson	53.5	53.4	53.6	56.0	11.8	83	32	2	118	April 29	14.1	68.6
USG 3209	50.2	48.5	53.3	55.3	12.0	85	30	2	119	April 30	4.2	52.6
USG 3650	46.9			55.3	11.8	83	34	2	122	May 03	10.4	70.0
USG 3709	**59.8***	**61.8***	**60.5****	54.0	11.5	87	37	2	117	April 28	10.4	70.6
VA 98W-593	51.8			**59.0****	12.0	85	30	1	120	May 01	0.6	52.7
WILLCROSS 730	59.0	**58.5***	**59.1***	54.0	11.0	84	36	2	117	April 28	18.3	70.4
Average	55.1	54.7	53.1	56.0	11.7	83.9	35.3	1.9	119	April 30	5.6	56.6
LSD (0.05)	5.4	6.3	5.0	1.1	0.5	6.3	2.7	0.7	1.4		5.8	15.8
CV%	6.7	11.6	11.6	1.4	3.0	5.0	5.3	24.9	0.8		71.5	19.1

** Indicates the highest yielding variety in the column.

* Indicates varieties that do not differ in yield from the highest yielding variety based on Fisher's protected LSD (p=0.05).

† Yields are based on 60 pound standard bushel weight adjusted to 13.0 percent moisture content of the grain.

‡ Lodging rated on a 0 to 9 scale where 0 = no lodging and 9 = plants in the plot completely flat.

§ Percent of canopy showing symptoms of stripe rust or Septoria tritici blotch. Septoria data may have been confounded by barley yellow dwarf virus symptoms.

¶ Number in parentheses is the experimental number under which the variety was tested in the 2001 Missouri Winter Wheat Performance Tests.

Table 11. Performance of soft red winter wheats tested at Lamar, Missouri during 2002.

Variety	Grain yield[†]			Test weight	Grain moisture	Winter survival	Plant height	Lodging[‡]
	2002	2001-02	2000-02					
	bu/acre			- lb/bu -	%	%	in	0-9
AgriPro Wheat Mitchell	27.0			57.8	11.6	91	40	1
AgriPro Wheat Natchez	38.4	44.4		56.5	11.5	91	41	3
AgriPro Wheat Patton	38.1	51.5	50.5	57.9	11.4	91	39	2
AgriPro Wheat SAVAGE	41.5			58.5	11.8	92	38	1
AGS 2000	32.4	53.2	**58.7****	57.7	11.5	93	37	2
AR 839-25-8-2	41.8			58.1	11.2	91	38	1
AR 839-27-1-3	46.5	**55.4***		57.4	11.5	88	40	1
ARLA 85411	22.4			57.5	11.8	88	35	1
Croplan Genetics 514W	40.1			56.6	11.6	92	40	2
Croplan Genetics 554W	45.1			56.1	11.4	90	38	1
DG 4200	39.4			57.4	11.7	89	42	1
DG 4888	34.4			57.3	11.7	89	42	1
DG 5300	23.8			55.5	11.4	87	40	1
Dixie 900	35.4	52.8		57.3	11.8	89	42	1
Dixie X9512	37.9			57.8	11.8	91	42	1
Dixie X9611	26.7			55.6	11.5	90	39	1
DK 1551	33.9	44.5		56.7	11.5	88	39	1
DK 7777 (DK XTJ 7777)[§]	50.8	**56.2***		59.1	12.1	87	42	2
DK 7900 (DK XTJ 7900)	44.8	**61.3****		57.6	11.6	91	41	1
DK XTJ 9121 (DK 9121)	36.3	47.9		56.6	10.9	91	40	1
DK XTJ 9216	31.8			57.4	11.6	89	41	2
DK XTJ 9333	47.5	**56.3***		57.6	11.4	90	44	1
DK XTJ 9410	45.7			57.9	11.8	93	41	2
Ernie	46.0	49.3	49.0	57.6	11.6	91	38	1
EXCEL 101	45.3			58.3	11.7	88	44	3
EXCEL 201	49.0			58.7	11.8	91	43	2
EXCEL 307	49.5	**60.5***		57.9	11.8	90	43	2
EXCEL 400-1	50.8	**60.4***	**58.3***	58.4	11.9	90	41	2
FFR 510	42.4	50.7		57.2	11.7	92	40	2
FFR 521	49.5			57.6	11.8	92	36	1
FFR 551	45.1	46.5		56.4	11.3	90	35	2
FFR 556	45.5			56.7	11.3	88	38	1
GA 92485E15	22.6			58.1	11.2	88	38	2
Kaskaskia	39.6	53.8	53.6	**59.6***	11.9	85	40	2

KTS Mack	28.2			56.2	11.7	91	40	1
KTS Medallion	37.4			58.2	11.5	90	38	1
KY 90C-054-6	40.9			57.1	11.6	93	39	2
KY 90C-292-4-1	38.5	47.5		57.2	11.5	90	40	2
KY 91C-171-24	26.1	43.6		58.8	11.9	90	37	2
LEWIS 864	**54.5***			**59.3***	11.9	87	42	2
McCormick	38.6			**60.0***	11.7	88	37	1
MFA Brand 766	45.6	**59.7***		**59.3***	11.6	89	40	2
MFA Brand 1828	53.2	**57.9***	**56.6***	58.5	11.9	92	42	2
MFA Brand 2020	50.1			58.5	11.8	89	43	2
MO 960903	49.9	**57.8***	**58.5***	56.6	12.4	91	45	2
MO 980525	**59.6****	**57.2***	**55.9***	58.7	12.1	90	43	2
MO 980725	**54.2***			**59.8***	12.1	90	42	2
MPG 7921	37.5	52.2	**55.2***	57.7	11.7	92	39	2
NK COKER 9025	32.1	47.8	52.3	56.7	11.5	92	36	2
NK COKER 9152 (NK BL 940582)	34.7	49.8		57.1	11.0	89	39	2
NK COKER 9474	18.1	37.5	41.0	58.3	11.6	92	36	1
NK COKER 9663	22.7	45.1	46.1	57.5	11.7	91	39	1
OH 645	33.7			**59.3***	11.4	90	39	1
Pioneer Variety 25R37	42.2	54.2		58.5	11.7	88	39	1
Pioneer Variety 25R44	39.7	49.5		58.8	11.7	87	36	1
Pioneer Variety 25R49	40.1	53.7		58.6	11.6	89	36	1
Pioneer Variety 25R78	38.3			58.0	11.6	93	36	1
Roane	41.7	53.4	**56.0***	**59.5***	11.6	88	38	2
Sisson	36.1	45.0	50.0	57.3	11.5	89	37	3
USG 3209	38.5	41.9	50.6	56.7	11.4	91	38	2
USG 3650	32.5			57.8	11.8	89	38	1
USG 3709	43.6	**57.3***	**57.8***	57.4	11.7	93	41	2
VA 98W-593	30.0			**60.4****	11.7	90	35	1
WILLCROSS 730	37.1	54.0	**56.1***	58.4	11.5	91	40	2
Average	39.3	51.7	53.3	57.8	11.6	89.9	39.4	1.6
LSD (0.05)	5.8	6.8	4.9	1.2	0.4	4.0	2.5	0.6
CV%	10.1	13.3	11.5	1.4	2.3	3.1	4.5	26.5

** Indicates the highest yielding variety in the column.

* Indicates varieties that do not differ in yield from the highest yielding variety based on Fisher's protected LSD (p=0.05).

† Yields are based on 60 pound standard bushel weight adjusted to 13.0 percent moisture content of the grain.

‡ Lodging rated on a 0 to 9 scale where 0 = no lodging and 9 = plants in the plot completely flat.

§ Number in parentheses is the experimental number under which the variety was tested in the 2001 Missouri Winter Wheat Performance Tests.

Table 12. Performance of soft red winter wheats tested at Mt. Vernon, Missouri during 2002.

Variety	Grain yield[†] 2002	Grain yield[†] 2001-2002[‡]	Test weight	Grain moisture	Winter survival	Plant height	Lodging[§]
	bu/acre		- lb/bu -	%	%	in	0-9
AgriPro Wheat Mitchell	35.1		53.1	15.8	82	36	2
AgriPro Wheat Natchez	49.1	57.7	55.9	15.6	84	39	3
AgriPro Wheat Patton	34.2	50.0	52.0	15.7	81	34	3
AgriPro Wheat SAVAGE	51.7		56.1	15.7	86	36	2
AGS 2000	51.3	**62.9***	56.5	14.5	86	33	3
AR 839-25-8-2	51.8		55.7	15.6	86	36	1
AR 839-27-1-3	48.1	55.0	55.0	15.6	81	36	1
ARLA 85411	36.1		**57.5***	15.7	78	33	1
Croplan Genetics 514W	50.2		55.5	15.4	84	35	3
Croplan Genetics 554W	38.3		53.1	15.4	82	33	2
DG 4200	47.7		56.2	15.3	85	38	2
DG 4888	39.1		55.3	15.4	83	37	2
DG 5300	33.2		52.8	15.1	82	34	2
Dixie 900	42.0	55.8	56.0	15.6	82	37	2
Dixie X9512	45.0		56.1	15.8	86	37	2
Dixie X9611	27.5		52.4	16.0	84	35	1
DK 1551	41.3	52.1	52.4	15.5	86	37	2
DK 7777 (DK XTJ 7777)[¶]	51.5	56.5	55.9	17.1	88	40	2
DK 7900 (DK XTJ 7900)	41.6	53.4	54.5	15.6	87	40	2
DK XTJ 9121 (DK 9121)	41.8	50.7	53.2	14.9	79	36	2
DK XTJ 9216	47.1		54.6	15.6	76	39	3
DK XTJ 9333	51.2	**62.8***	55.9	16.0	80	42	2
DK XTJ 9410	41.0		54.9	16.3	84	40	2
Ernie	50.4	51.2	56.3	15.2	86	37	3
EXCEL 101	37.2		53.0	16.0	84	42	3
EXCEL 201	48.4		56.0	16.3	86	41	2
EXCEL 307	46.4	54.6	55.1	15.7	85	41	2
EXCEL 400-1	46.2	55.6	55.4	16.3	83	40	2
FFR 510	47.2	53.3	55.4	15.9	85	36	3
FFR 521	**54.9***		55.6	15.7	82	33	1
FFR 551	42.2	51.5	55.2	15.1	83	33	2
FFR 556	37.5		52.9	15.1	85	34	2
GA 92485E15	41.5		56.7	14.5	90	34	3
Kaskaskia	42.8	54.2	57.3	16.4	79	37	2

KTS Mack	28.5		52.8	15.5	86	35	1
KTS Medallion	46.0		56.4	15.6	85	34	2
KY 90C-054-6	33.6		51.8	15.1	86	35	3
KY 90C-292-4-1	42.1	52.9	55.3	15.2	83	35	1
KY 91C-171-24	31.8	45.4	55.7	15.9	82	35	1
LEWIS 864	**58.4****		**57.8***	15.9	79	42	2
McCormick	40.7		56.1	15.8	85	31	1
MFA Brand 766	**58.2***	**60.4***	57.3	14.9	88	38	2
MFA Brand 1828	48.4	53.3	55.2	15.8	87	41	2
MFA Brand 2020	50.6		55.5	16.2	85	40	3
MO 960903	52.9	54.5	56.4	15.8	81	41	2
MO 980525	**56.1***	**59.6***	56.5	15.8	84	40	2
MO 980725	52.5		57.0	15.2	85	40	4
MPG 7921	42.5	51.7	53.4	16.1	81	37	2
NK COKER 9025	27.1	41.8	50.1	15.0	86	32	3
NK COKER 9152 (NK BL 940582)	47.2	54.6	55.9	15.5	81	38	2
NK COKER 9474	37.1	49.6	56.9	15.1	81	31	2
NK COKER 9663	**55.6***	**64.4****	**58.8****	15.5	86	37	2
OH 645	41.3		55.8	16.0	79	37	2
Pioneer Variety 25R37	51.3	**59.8***	57.2	15.4	80	37	1
Pioneer Variety 25R44	41.3	53.9	54.9	15.6	83	34	2
Pioneer Variety 25R49	39.1	54.0	53.6	16.0	82	35	3
Pioneer Variety 25R78	46.4		56.7	16.0	87	35	1
Roane	**54.6***	54.1	57.3	15.9	87	37	2
Sisson	47.6	53.9	55.2	14.9	87	34	4
USG 3209	43.1	51.9	54.4	15.8	81	32	3
USG 3650	31.9		55.4	16.2	81	35	1
USG 3709	45.0	54.9	53.4	16.1	88	36	2
VA 98W-593	44.2		**58.8****	15.3	80	32	2
WILLCROSS 730	43.8	52.3	53.0	15.9	86	36	3
Average	44.2	54.3	55.2	15.6	83.6	36.4	2.2
LSD (0.05)	5.4	6.2	1.4	1.0	6.8	2.1	1.2
CV%	8.4	11.5	1.8	4.3	5.4	3.8	35.7

** Indicates the highest yielding variety in the column.

* Indicates varieties that do not differ in yield from the highest yielding variety based on Fisher's protected LSD (p=0.05).

† Yields are based on 60 pound standard bushel weight adjusted to 13.0 percent moisture content of the grain.

‡ Three-year data at Mt. Vernon are unavailable. No data were collected for the 2000 crop season at this location due to heavy viral pressure and persistent rainfall at harvest.

§ Lodging rated on a 0 to 9 scale where 0 = no lodging and 9 = plants in the plot completely flat.

¶ Number in parentheses is the experimental number under which the variety was tested in the 2001 Missouri Winter Wheat Performance Tests.

Table 13. Grain yields[†] 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 2002.

Variety	Northern region			Southeastern region			Southwestern region[‡]			State Average
	2002	2001-02	2000-02	2002	2001-02	2000-02	2002	2001-02	2000-02	2002
	bushels/acre									
AgriPro Wheat Mitchell	65.3			59.3			30.2			53.6
AgriPro Wheat Natchez	61.0	61.0		61.7	61.5		43.6	51.0		56.2
AgriPro Wheat Patton	68.9	**65.7***	**66.7***	60.3	66.5	**67.9***	37.0	50.8	50.3	57.3
AgriPro Wheat SAVAGE	64.5			**63.3***			46.7			59.1
AGS 2000	56.9	58.2	63.0	61.9	63.2	**66.4***	42.2	**58.0***	**60.4****	54.1
AR 839-25-8-2	56.2			56.9			46.7			53.7
AR 839-27-1-3	57.6	55.1		58.4	66.3		47.8	**55.2***		55.0
ARLA 85411	51.5			50.3			30.4			45.1
Croplan Genetics 514W	63.1			49.9			45.0			54.2
Croplan Genetics 554W	65.9			59.1			41.7			57.0
DG 4200	69.0			54.9			43.1			57.6
DG 4888	63.6			59.8			35.5			54.5
DG 5300	56.6			59.2			28.6			49.4
Dixie 900	67.8	**66.7***		58.0	64.0		39.0	54.3		56.8
Dixie X9512	63.0			54.7			41.5			54.5
Dixie X9611	60.8			58.6			26.9			50.5
DK 1551	57.9	58.7		60.4	67.3		38.6	48.3		53.1
DK 7777 (DK XTJ 7777)[§]	63.3	61.4		59.5	64.2		50.9	**56.3***		58.7
DK 7900 (DK XTJ 7900)	66.2	61.4		59.8	64.2		42.9	**57.4***		57.7
DK XTJ 9121 (DK 9121)	67.0	63.6		58.1	66.3		38.5	49.3		56.3
DK XTJ 9216	58.6			57.4			39.2			52.7
DK XTJ 9333	65.8	61.9		59.5	64.7		50.2	**59.6***		59.6
DK XTJ 9410	67.6			59.6			44.0			58.6
Ernie	68.0	62.9	61.0	56.2	52.6	52.4	48.7	50.2	49.9	59.1
EXCEL 101	62.9			51.9			41.0			53.5
EXCEL 201	68.2			61.0			47.1			60.2
EXCEL 307	68.6	**65.4***		60.5	67.0		49.1	**57.6***		60.7
EXCEL 400-1	**72.7***	**68.9****	**69.3****	**65.4***	67.2	**66.0***	48.4	**58.0***	**57.2***	**63.7***
FFR 510	62.1	58.9		51.1	63.0		45.0	52.0		54.1
FFR 521	58.1			54.8			51.6			55.3
FFR 551	60.2	56.8		52.3	59.0		39.7	49.0		52.1
FFR 556	65.8			57.0			41.5			56.3
GA 92485E15	59.0			54.6			32.5			50.2
Kaskaskia	60.9	60.0	61.1	55.2	60.8	61.8	41.4	54.0	53.8	53.7

KTS Mack	61.2			56.8			28.6			50.6
KTS Medallion	63.4			53.5			41.0			54.2
KY 90C-054-6	61.5			**62.6***			36.8			54.8
KY 90C-292-4-1	61.5	58.5		58.4	63.8		40.1	50.2		54.5
KY 91C-171-24	55.0	52.7		59.1	67.6		29.0	44.5		48.7
LEWIS 864	**69.3***			58.0			**55.9***			**62.2***
McCormick	63.7			62.1			40.5			56.6
MFA Brand 766	66.4	64.8		**63.0***	63.6		**52.9***	**60.0****		**61.5***
MFA Brand 1828	**70.2***	**66.8***	**66.9***	61.6	65.4	63.7	50.4	**55.6***	55.3	**62.1***
MFA Brand 2020	**70.3***			**64.3***			50.7			**63.0***
MO 960903	66.1	62.3	65.0	**63.4***	66.6	**66.5***	50.9	**56.1***	**56.9***	**61.0***
MO 980525	68.2	65.0	65.1	61.1	66.0	64.5	**58.1****	**58.4***	**57.4***	**63.3***
MO 980725	**74.0****			59.6			**54.4***			**64.3****
MPG 7921	55.7	59.3	63.2	57.1	67.8	**69.9****	40.0	51.9	53.8	51.6
NK COKER 9025	58.4	54.1	57.9	53.1	61.9	62.8	30.4	44.8	48.1	48.9
NK COKER 9152 (NK BL 940582)	60.1	59.1		**63.4***	68.2		39.3	52.2		55.1
NK COKER 9474	61.6	59.9	59.1	46.3	55.6	54.0	27.1	43.5	44.4	47.4
NK COKER 9663	61.8	62.4	63.4	60.8	62.6	62.9	39.0	**54.8***	53.4	55.0
OH 645	59.3			54.6			37.0			51.6
Pioneer Variety 25R37	63.0	63.6		**65.5***	**74.0****		45.4	**57.0***		58.7
Pioneer Variety 25R44	63.6	61.6		60.7	67.1		40.8	51.7		56.3
Pioneer Variety 25R49	64.7	63.0		62.2	**69.9***		39.5	53.8		56.8
Pioneer Variety 25R78	66.3			**68.4****			43.0			60.3
Roane	69.0	**65.2***	**66.3***	60.4	64.7	**67.8***	47.4	53.8	55.2	60.4
Sisson	60.7	57.0	62.5	54.2	61.2	64.5	42.0	49.4	51.6	53.5
USG 3209	61.9	59.1	62.4	54.2	61.8	**65.9***	41.2	46.9	51.1	53.8
USG 3650	59.9			53.6			32.3			50.2
USG 3709	58.5	57.5	60.6	**62.5***	**70.6***	**69.5***	43.4	**56.1***	**56.6***	55.3
VA 98W-593	65.0			58.6			36.9			55.2
WILLCROSS 730	59.2	58.6	62.0	61.6	68.2	**68.9***	40.9	53.1	54.6	54.7
Average	63.2	61.1	63.3	58.5	64.7	64.4	41.7	53.0	53.5	55.7
LSD (0.05)	4.8	3.7	3.3	6.1	5.6	4.9	5.8	5.5	3.8	3.5
CV%	9.4	10.5	11.2	10.7	12.5	13.4	14.1	15.5	11.4	12.1
Location years	3	6	9	2	4	6	2	4	5	7

** Indicates the highest yielding variety in the column.

* Indicates varieties that do not differ in yield from the highest yielding variety based on Fisher's protected LSD (p=0.05).

† Yields are based on 60 pound standard bushel weight adjusted to 13.0 percent moisture content of the grain.

‡ Three-year data reflect mean data for 5 location years. The 2000 Mt. Vernon location was not harvested due to heavy viral pressure and persistent rainfall at harvest.

§ Number in parentheses is the experimental number under which the variety was tested in the 2001 Missouri Winter Wheat Performance Tests.

Table14. Grain yield[†] for soft red winter wheats tested at seven locations in Missouri during 2002. Varieties are listed in descending order of state average yield.

Variety	Northern region			Southeastern region		Southwestern region		State average
	Columbia	Novelty	Trenton	Charleston[‡]	Portageville	Lamar	Mt. Vernon	2002
	bushels/acre							
MO 980725	**61.4***	**77.8***	**81.9***	57.4	**61.3***	**54.2***	52.5	**64.3****
EXCEL 400-1	56.8	**77.1***	**84.1****	**74.3****	55.6	50.8	46.2	**63.7***
MO 980525	**65.2****	67.6	71.3	**70.5***	52.4	**59.6****	**56.1***	**63.3***
MFA Brand 2020	53.0	**80.7****	**77.4***	**73.0***	55.2	50.1	50.6	**63.0***
LEWIS 864	**62.1***	64.9	**80.7***	65.6	49.3	**54.5***	**58.4****	**62.2***
MFA Brand 1828	57.7	73.9	**79.9***	**68.2***	55.4	53.2	48.4	**62.1***
MFA Brand 766	54.4	72.4	72.5	65.5	**59.4***	45.6	**58.2***	**61.5***
MO 960903	57.4	65.5	75.5	**67.8***	**60.9***	49.9	52.9	**61.0***
EXCEL 307	49.7	**80.4***	76.6	65.8	56.4	49.5	46.4	60.7
Roane	58.6	70.6	**78.4***	61.0	**61.8***	41.7	**54.6***	60.4
Pioneer Variety 25R78	47.4	70.2	**80.3***	**72.7***	**63.1***	38.3	46.4	60.3
EXCEL 201	49.7	**76.3***	**79.6***	**68.9***	53.5	49.0	48.4	60.2
DK XTJ 9333	54.7	70.2	73.1	**70.0***	51.0	47.5	51.2	59.6
Ernie	48.4	**76.8***	**77.6***	64.1	47.6	46.0	50.4	59.1
AgriPro Wheat SAVAGE	52.7	65.2	76.0	64.9	**62.3***	41.5	51.7	59.1
Pioneer Variety 25R37	51.7	66.4	70.6	**66.3***	**63.7***	42.2	51.3	58.7
DK 7777 (DK XTJ 7777)[§]	52.8	65.0	71.2	64.6	56.3	50.8	51.5	58.7
DK XTJ 9410	42.8	**75.6***	**83.5***	**67.2***	55.3	45.7	41.0	58.6
DK 7900 (DK XTJ 7900)	48.4	74.4	**78.0***	**67.9***	52.5	44.8	41.6	57.7
DG 4200	44.6	**77.6***	**83.5***	60.6	51.1	39.4	47.7	57.6
AgriPro Wheat Patton	53.4	73.8	**79.7***	**67.6***	50.8	38.1	34.2	57.3
Croplan Genetics 554W	58.2	66.0	73.3	61.7	57.8	45.1	38.3	57.0
Dixie 900	44.5	**75.8***	**81.6***	62.2	52.6	35.4	42.0	56.8
Pioneer Variety 25R49	46.8	67.8	**80.0***	60.9	**63.2***	40.1	39.1	56.8
McCormick	46.4	71.8	75.1	**66.1***	56.4	38.6	40.7	56.6
FFR 556	56.6	64.8	76.2	59.0	56.9	45.5	37.5	56.3
DK XTJ 9121 (DK 9121)	51.3	68.2	**80.3***	63.8	53.7	36.3	41.8	56.3
Pioneer Variety 25R44	48.0	60.8	**80.8***	59.6	**64.6****	39.7	41.3	56.3
AgriPro Wheat Natchez	47.5	64.4	71.5	61.6	**60.6***	38.4	49.1	56.2
FFR 521	47.3	58.7	65.9	58.4	50.8	49.5	**54.9***	55.3
USG 3709	52.0	49.7	73.7	**66.1***	**59.8***	43.6	45.0	55.3
VA 98W-593	47.0	68.0	**79.4***	**66.3***	51.8	30.0	44.2	55.2
NK COKER 9152 (NK BL 940582)	45.4	61.2	76.0	**66.7***	**61.6***	34.7	47.2	55.1
NK COKER 9663	53.5	60.9	72.8	61.3	57.6	22.7	**55.6***	55.0

AR 839-27-1-3	50.4	57.2	65.1	60.6	57.5	46.5	48.1	55.0
KY 90C-054-6	46.8	61.0	**78.4***	64.9	**60.2***	40.9	33.6	54.8
WILLCROSS 730	48.6	53.2	76.2	63.2	59.0	37.1	43.8	54.7
KY 90C-292-4-1	40.3	68.3	**77.4***	**66.0***	49.8	38.5	42.1	54.5
Dixie X9512	40.2	69.0	**79.3***	62.6	50.6	37.9	45.0	54.5
DG 4888	44.1	69.8	75.8	65.7	53.1	34.4	39.1	54.5
Croplan Genetics 514W	51.8	62.7	74.7	53.0	47.2	40.1	50.2	54.2
KTS Medallion	51.1	68.3	70.5	57.4	49.3	37.4	46.0	54.2
FFR 510	51.1	64.9	71.6	54.1	47.9	42.4	47.2	54.1
AGS 2000	42.9	56.9	71.8	61.6	**60.7***	32.4	51.3	54.1
USG 3209	49.2	59.2	74.3	57.8	50.2	38.5	43.1	53.8
Kaskaskia	42.9	64.2	75.1	54.3	55.5	39.6	42.8	53.7
AR 839-25-8-2	44.9	54.0	68.9	55.8	**59.5***	41.8	51.8	53.7
AgriPro Wheat Mitchell	49.9	71.1	74.9	62.2	57.4	27.0	35.1	53.6
EXCEL 101	47.9	67.3	74.2	56.4	46.9	45.3	37.2	53.5
Sisson	44.0	65.9	70.4	48.4	53.5	36.1	47.6	53.5
DK 1551	39.9	59.1	74.0	63.9	53.8	33.9	41.3	53.1
DK XTJ 9216	41.0	69.5	66.1	60.8	51.2	31.8	47.1	52.7
FFR 551	43.9	61.4	73.4	54.7	52.4	45.1	42.2	52.1
MPG 7921	47.4	49.4	72.5	56.3	56.2	37.5	42.5	51.6
OH 645	44.9	57.8	74.5	56.9	54.3	33.7	41.3	51.6
KTS Mack	44.4	63.9	74.6	56.6	55.6	28.2	28.5	50.6
Dixie X9611	45.0	64.0	74.8	61.4	52.8	26.7	27.5	50.5
GA 92485E15	43.3	59.5	74.7	55.6	52.4	22.6	41.5	50.2
USG 3650	41.9	62.0	75.4	59.1	46.9	32.5	31.9	50.2
DG 5300	38.1	63.4	69.7	62.4	55.7	23.8	33.2	49.4
NK COKER 9025	50.2	58.3	67.7	49.3	55.4	32.1	27.1	48.9
KY 91C-171-24	38.4	60.0	66.8	58.6	**63.2***	26.1	31.8	48.7
NK COKER 9474	41.4	67.7	75.6	49.7	43.5	18.1	37.1	47.4
ARLA 85411	35.8	57.1	61.1	50.6	50.6	22.4	36.1	45.1
Average	48.6	66.0	75.0	61.8	55.1	39.3	44.2	55.7
LSD (0.05)	5.7	5.6	7.1	8.3	5.4	5.8	5.4	3.5
CV%	8.2	5.7	6.8	9.2	6.7	10.1	8.4	12.1

** Indicates the highest yielding variety in the column.

* Indicates varieties that do not differ in yield from the highest yielding variety based on Fisher's protected LSD (p=0.05).

† Yields are based on 60 pound standard bushel weight adjusted to 13.0 percent moisture content of the grain.

‡ Management included a fall application of Sencor and a spring application of Tilt.

§ Number in parentheses is the experimental number under which the variety was tested in the 2001 Missouri Winter Wheat Performance Tests.

SR542 **Printed with soy ink on recycled paper** **New 8/02/5M**