

1994 Kentucky Small Grain Variety Trials

C.R. Tutt, D.A. Van Sanford,
W.L. Pearce and C.S. Swanson

In 1994, Kentucky farmers harvested 25.7 million bushels of soft red winter wheat produced on 450,000 acres. The average yield of 57 bu/a was up 9 bu/a from the yield of 1993. Barley yields were up 11 bu/a from 1993 levels.

Small grain performance tests were conducted in six of the seven agroclimatic regions of Kentucky (Fig. 1). Agricultural areas within each region are considered to have similar soil types and climatic conditions. Each region having a substantial acreage of a small grain commodity will have a trial conducted in that region for that commodity.

The objective of the Kentucky small grain variety trials is to evaluate varieties of barley and wheat that are commercially available or may soon be available to Kentucky farmers. New varieties are continually being developed by agricultural experiment stations and commercial firms. Annual evaluation of small grain varieties and selections provides seedsmen, farmers, and other agricultural workers with current information to help them select the varieties best adapted to their locality and individual requirements.

Since weather, soil and other environmental factors will alter varietal performance from one location to another, tests are grown in six locations (Fig. 1) in the state.

Experimental Methods

The plots were planted with a specially built multi-row cone seeder.

Table 1—Small Grain Harvested Acreage and Yields in Kentucky, 1992-1994.*

Crop	1994		1993		1992	
	Harvest 1000 A	Yield Bu/A	Harvest 1000 A	Yield Bu/A	Harvest 1000 A	Yield Bu/A
Wheat	450	57	470	48	420	55
Barley	14	75	16	64	16	66

* July 13, 1994, Kentucky Crop and Livestock Reporting Service.

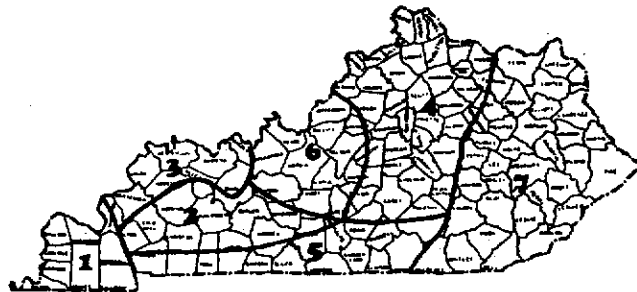


Figure 1—Agro-climatic regions of Kentucky small grain variety trials.

Region	1994 Location	Cooperator	Crop Tested
1. Purchase	Murray	Bobby Wilson	Wheat
2. Western Coal Field	Princeton (Sandstone soil)	Research and Education Center	Barley, Wheat
3. Ohio Valley	Owensboro	Bob Alvie	Wheat
4. Bluegrass	Lexington	Kentucky Agricultural Experiment Station	Barley, Wheat
5. Southern Tier	Elkton Princeton (Limestone soil)	Andy Gray Research and Education Center	Barley, Wheat Barley, Wheat
6. North Central	Hardinsburg	Gene David Shrewsbury	Wheat

Acknowledgement is made to the following individuals for their contributions to the bulletin: Ted Howard, Wayne Mattingly, Marvin Davidson and Carol Mackey, County Extension Agents for Agriculture, for assistance in locating test sites and collecting data; D. Hershman for disease ratings; S. Gentry, G. Goode, B. Zeng, and X. Yang for data collection; Mary Ann Kelley for text and table preparation.

Each plot consisted of six rows to form a plot 4 feet wide, which was later trimmed to 10 feet in length. Each variety was grown in four replications, and the data presented are the average response from the four replications of 40 square feet harvested with a small plot combine. Planting dates of all trials for the past 3 years are listed in Table 2.

In some instances, uncontrollable factors — such as excessive rainfall, winter killing, high winds, hail, grazing cattle, etc.—adversely affected an experiment so that the results were judged unreliable. When this occurred, results are not given for that location and year. Data averaged over a period of years gives a more accurate picture of varietal performance than does annual data.

Results and Discussion

Since genetic expression of a variety is greatly influenced by environmental conditions, it is best to have several years' data from which to draw conclusions. Performance of a variety tested for only one year should not be compared with a 3-year average of another variety, since it is possible that results in one of the other years were extremely good or poor, and thus not comparable.

The yield of a variety is relative and should be compared with the yields of the other varieties in the same experiment and at the same location. Small

differences in yield of only a few bushels per acre between two varieties from an individual test should not be interpreted to indicate the superiority of one variety over another. However, if one variety consistently out-yields another over a period of several years, the chances are that the differences are real.

Lodging data are very difficult to interpret. A high-yielding variety should not necessarily be down-graded because of a high percentage of lodging for a given year at a given location. Local weather conditions, such as wind and rain, may cause a variety to lodge much more than it normally does. Variety trials normally have a greater degree of lodging than do farmer fields. It should also be emphasized that a variety reported to be 50% lodged does not imply that only 50% of the grain could be harvested. With good equipment, almost all of the grain can often be saved. Lodging data for a period of years should receive more consideration than annual lodging data since they will give a more accurate picture of varietal performance.

1994 Test Conditions

Favorable weather during October allowed timely seeding of the wheat and barley variety trials. A hard rain immediately following the planting of the Princeton sandstone tests led to very poor stands, and ultimately the wheat and barley trials at the location were discarded. At other locations, adequate moisture and mild temperatures prevailed so that stand establishment was good. Mild winter temperatures prevailed through December and into the first half of January. Record low temperatures were recorded throughout the state during the last half of January, but adequate snowcover protected the variety trials from significant cold injury. An extremely wet period in February and March was followed by a cool, dry spring with ideal conditions for small grain production. Disease pressure was minimal and lodging was negligible, resulting in high yields and test weights. The Princeton limestone (Table 8) and Lexington (Table 7) trials were treated with fungicides to

Table 2—Region, Location, Preceding Crop and Planting Dates of Kentucky Small Grain Trials, 1992-1994.

Region	Location	Preceding Crop	Preceding Crop	Planting Date			
				1994	1993	1992	
Purchase	Murray	1992-94	Corn	Wheat	10/13	10/20	10/18
Western Coal Field	Princeton (Sandstone soil)		Fallow	Barley	10/29	10/12	10/22
				Wheat	10/29	10/12	10/22
Ohio Valley	Hawesville Owensboro	1992-93	Corn	Wheat	10/26	10/14	10/21
		1994	Corn				
Bluegrass	Lexington		Fallow	Barley	10/12	10/14	10/16
				Wheat	10/21	10/16	10/16
Southern Tier	Elkton	1992-94	Corn	Barley	10/14	10/15	10/17
				Wheat	10/14	10/15	10/17
	Princeton (Limestone soil)		Fallow	Barley	10/28	10/13	10/24
				Wheat	10/28	10/13	10/24
North Central	Bardstown Hardinsburg	1992-93	Corn	Wheat	10/15	10/21	10/16
		1994	Corn				

control fungal diseases. Tests at all other locations were untreated.

Small Grain Varieties for 1995

Varieties eligible for certification include (1) varieties that may have potential for Kentucky and (2) older varieties that are still acceptable for production in Kentucky. The characteristics of the small grain varieties are summarized in Tables 3 and 11.

Soft Red Winter Wheat Varieties

Kentucky's climate and soils are well suited for the production of high quality soft red winter wheat. No single variety has all the desirable characteristics, but each has certain advantages. Yielding ability, straw strength, height, earliness, grain quality, and disease resistance are important in choosing a variety. Varietal performance is presented in Tables 4-9.

Winter Barley Varieties

Winter barleys are less winterhardy than winter wheat but more hardy than winter oats. The degree of winterhardiness, straw strength, and maturity are important characteristics when choosing a variety. Varietal performance data are presented in Tables 12-14A.

Certified Seed

Planting certified seed is one of the first steps in ensuring a good small grain crop. The extra cost of certified seed is justified in view of the high quality of seed obtained. Certified seed is seed which has been grown in such a way as to ensure the genetic identity and purity of a variety. Certified seed also helps to maintain freedom from weed and other crop seed and, in some cases, freedom from disease. The Kentucky Agricultural Experiment Station recommends that Kentucky-certified seed be used whenever possible for growing commercial crops of small grains.

TABLE 3 — CHARACTERISTICS OF WHEAT VARIETIES TESTED IN 1994.

VARIETY	PROTECTED	SOURCE	RELEASE DATE	YIELD (BU/AC)	TEST WEIGHT (LB/BU)	LODGING (%)	PLANT HEIGHT (IN.)	SURVIVAL (%)	HEADING DATE
FFR 555W	YES	SOUTHERN STATES COOP	1990	88.0	56.5	0.0	35.6	93.9	07 May
WAKEFIELD	YES	VIRGINIA	1990	87.1	57.3	0.4	39.3	96.7	09 May
BECKER	YES	OHIO	1994	86.1	55.1	0.0	36.2	95.9	09 May
2510	YES	PIONEER HI BRED INT.	1991	85.7	56.4	0.0	36.2	93.0	12 May
JACKSON	YES	VIRGINIA	1993	85.5	57.2	5.4	37.7	94.1	08 May
AGRIPRO CLEMENS	YES	AGRIPRO BIOSCIENCES	1994	85.3	57.1	3.0	40.8	97.4	10 May
VERNE	YES	KENTUCKY	1990	85.1	57.1	0.7	41.4	94.8	07 May
PATRIOT	YES	KENTUCKY AMERICAN SEED	1994	85.0	57.0	0.0	35.7	95.7	06 May
MADISON	YES	VIRGINIA	1990	84.6	57.5	0.2	38.3	92.0	05 May
2580	YES	PIONEER HI BRED INT.	1992	84.6	56.7	0.0	36.7	94.1	05 May
XW523	YES	PIONEER HI BRED INT.	1994	83.2	58.2	0.0	36.0	92.8	07 May
2684	YES	PIONEER HI BRED INT.	1994	82.4	58.6	0.4	36.0	94.1	04 May
TYLER	NO	VIRGINIA	1980	82.4	57.1	1.3	42.3	97.6	08 May
FFR EXP 525	YES	SOUTHERN STATES COOP	1994	82.2	57.5	2.2	37.5	94.8	06 May
XW522	YES	PIONEER HI BRED INT.	1994	81.4	58.7	0.0	30.6	95.0	06 May
AGRIPRO HICKORY	YES	AGRIPRO BIOSCIENCES	1994	81.3	57.9	0.0	37.4	91.5	05 May
FREEDOM	YES	OHIO	1991	80.8	56.1	0.9	38.6	93.5	08 May
AGRIPRO SAWYER	YES	AGRIPRO BIOSCIENCES	1991	80.3	55.6	1.3	37.1	94.1	06 May
2548	YES	PIONEER HI BRED INT.	1989	79.8	56.6	0.0	35.5	94.3	08 May
ERNIE	YES	MISSOURI	1994	78.8	56.6	0.7	33.6	96.1	04 May
FFR 568W	YES	SOUTHERN STATES COOP	1990	77.2	57.9	0.0	40.1	94.8	09 May
90W	YES	AGRA TECH	1994	76.8	58.8	1.1	38.0	95.7	08 May
CARDINAL	YES	OHIO	1986	76.7	57.5	0.4	41.3	90.0	11 May
SALUDA	NO	VIRGINIA	1983	76.6	58.3	0.9	34.7	94.3	07 May
GRANT	YES	INDIANA	1994	76.3	56.4	0.0	34.7	86.5	10 May
FFR EXP 392	YES	SOUTHERN STATES COOP	1994	75.9	57.7	0.0	37.0	90.9	09 May
HOWELL	YES	ILLINOIS	1990	75.3	59.1	0.7	41.4	95.2	11 May
FFR 511W	YES	SOUTHERN STATES COOP	1991	74.9	56.6	0.4	35.7	91.7	05 May
CLARK	YES	INDIANA	1988	71.3	56.8	0.0	37.0	91.3	04 May
CALDWELL	YES	INDIANA	1980	65.9	56.7	0.7	36.7	79.6	12 May
VIGORO 1915	YES	VIGORO SEEDS	1994	OWENSBORO TEST ONLY (TABLE 6)					
VIGORO 1185	YES	VIGORO SEEDS	1994	PRINCETON TEST ONLY (TABLE 8)					
VORIS 6040	YES	VORIS SEEDS	1994	LEXINGTON TEST ONLY (TABLE 7)					
VORIS 6044	YES	VORIS SEEDS	1994	LEXINGTON TEST ONLY (TABLE 7)					

MEAN = 79.8 BU/A
 CV = 9.4%
 LSD(0.05) = 3.7 BU/A

The CV is a measure of experimental error. The lower the CV the more reliable the results.

The LSD (Least Significant Difference) is the minimum difference required for two varieties to be significantly different from one another.

Unauthorized propagation prohibited. Seed of these varieties must be sold by variety name only as a class of certified seed. This includes varieties for which protection has been applied and those for which protection has been granted.

TABLE 3a — AVERAGE PERFORMANCE OF WHEAT VARIETIES TESTED IN 1993-1994.

VARIETY	YIELD (BU/AC)	TEST WEIGHT (LB/BU)	LOGGING (%)	PLANT HEIGHT (IN.)	SURVIVAL (%)	HEADING DATE
FFR 555W	76.0	54.8	0.7	34.8	92.0	08 May
WAKEFIELD	74.4	55.9	2.6	38.2	93.8	09 May
2510	74.2	56.0	0.6	34.7	92.5	12 May
JACKSON	74.2	56.8	5.9	36.1	91.6	08 May
2684	73.4	58.1	1.6	35.0	92.4	04 May
MADISON	73.2	56.3	1.5	37.2	92.2	06 May
VERNE	72.6	56.5	1.3	40.6	92.5	08 May
2580	71.1	56.1	2.2	35.5	88.5	06 May
2548	68.5	55.6	1.9	34.0	90.1	09 May
FREEDOM	67.3	54.8	2.4	37.3	90.0	10 May
TYLER	67.3	55.7	1.5	41.2	91.8	10 May
AGRIPRO SAWYER	67.1	54.8	4.6	35.5	90.9	07 May
FFR 568W	65.6	56.7	1.1	38.0	91.9	10 May
FFR 511W	65.3	55.8	1.4	35.3	88.8	06 May
SALUDA	63.7	57.0	2.0	33.8	90.2	09 May
CLARK	63.4	56.1	0.8	35.7	89.8	05 May
CARDINAL	63.0	55.3	1.0	39.7	85.7	12 May
HOWELL	62.2	57.9	2.5	40.1	91.3	12 May
CALDWELL	54.4	54.7	1.0	35.9	77.6	10 May

TABLE 3b — AVERAGE PERFORMANCE OF WHEAT VARIETIES TESTED IN 92-94.

VARIETY	YIELD (BU/AC)	TEST WEIGHT (LB/BU)	LODGING (%)	PLANT HEIGHT (IN.)	SURVIVAL (%)	HEADING DATE
FFR 555W	71.2	54.2	2.1	34.5	85.7	08 May
2510	69.4	55.3	2.5	34.5	88.1	11 May
MADISON	68.9	56.0	5.1	36.7	86.0	05 May
WAKEFIELD	68.8	55.0	4.0	37.9	85.9	09 May
VERNE	66.8	55.5	1.0	39.8	84.5	08 May
2548	65.2	54.9	1.5	33.7	85.3	09 May
AGRIPRO SAWYER	63.1	54.5	7.1	35.6	86.3	07 May
FREEDOM	62.6	53.9	1.6	36.7	82.7	09 May
FFR 511W	62.0	55.2	1.1	35.1	84.1	05 May
TYLER	62.0	54.6	6.4	40.6	84.3	10 May
CLARK	60.9	55.6	0.5	35.9	86.5	04 May
FFR 568W	60.6	55.8	3.6	37.7	86.1	09 May
HOWELL	59.6	57.5	2.6	39.8	85.3	11 May
CARDINAL	59.0	54.6	0.9	39.7	78.3	11 May
SALUDA	57.2	55.5	1.5	33.1	79.8	09 May
CALDWELL	51.1	53.9	1.1	36.0	73.1	09 May

TABLE 4 — WHEAT PERFORMANCE TRIALS FOR PURCHASE REGION*, 1992-1994.

VARIETY	---YIELD (BU/AC)---		--TEST WT (LB/BU)--		----PCT LODGED----		---PCT SURVIVAL---		PLANT HEIGHT (IN) 1994	HEADING DATE 1994								
	1994	1993	1992	MEAN	1994	1993	1992	MEAN										
VERNE	92	65	71	76	56.3	56.6	56.9	56.6	0	0	0	0	100	99	98	99	42	30-Apr
TYLER	91	59	58	69	56.2	55.7	52.3	54.7	3	0	0	1	100	98	90	96	43	02-May
FFR 555W	91	61	70	74	55.5	54.8	56.7	55.7	0	0	0	0	99	100	94	98	35	28-Apr
WAKEFIELD	90	64	70	75	56.8	54.7	55.4	55.6	0	0	0	0	100	100	96	99	38	01-May
BECKER	90	65	78		54.0	52.6	53.3		0	0	0	0	100	100	100	100	36	02-May
2510	89	60	67	72	55.3	56.1	56.0	55.8	0	0	0	0	95	99	100	98	37	06-May
FFR EXP 525	89			89	58.4		58.4		8	0	0	3	96	100	96		37	27-Apr
MADISON	88	57	72	72	57.5	56.0	57.7	57.1	0	0	0	0	99	100	100	100	36	26-Apr
FREEDOM	87	55	66	69	54.9	54.0	55.5	54.8	4	0	0	1	99	98	90	95	38	29-Apr
XW523	87			87	57.2		57.2		0	0	0	0	96				36	30-Apr
JACKSON	85	65		75	56.2	56.3		56.3	31	0	10	0	100	100	100	100	39	01-May
AGRIPRO HICKORY	84			84	59.0		59.0		0	0	0	0	95				37	26-Apr
FFR EXP 392	84			84	58.3		58.3		0	0	0	0	94				37	02-May
2684	83	59	71	71	58.1	57.6		57.9	0	0	0	0	100	100	100	100	36	25-Apr
2580	83	55	69	69	55.0	55.1		55.1	0	0	0	0	95	100			37	27-Apr
ERNIE	83			83	56.7		56.7		4	1	0	1	99				32	26-Apr
XW522	83			83	57.4		57.4		0	0	0	0	100				30	26-Apr
2548	81	57	77	72	56.6	55.7	58.8	57.0	0	0	0	0	96	100	100	99	35	30-Apr
SALUDA	81	53	55	63	57.4	55.0	56.0	56.1	5	0	0	2	99	100	76	92	35	01-May
PATRIOT	81			81	55.3		55.3		0	0	0	0	100				36	28-Apr
CLARK	81	56	72	70	56.4	54.8	57.3	56.2	0	0	0	0	96	99	100	98	37	26-Apr
CARDINAL	81	54	75	70	57.9	54.3	56.0	56.1	0	0	0	0	96	98	91	95	41	02-May
90W	80			80	60.5		60.5		6	0	2	0	100				38	30-Apr
FFR 568W	79	50	70	66	56.5	55.4	59.5	57.1	0	0	0	0	98	100	100	99	38	01-May
AGRIPRO CLEMENS	77			77	55.8		55.8		15	0	5	0	100				40	03-May
AGRIPRO SAWYER	76	58	68	67	54.8	54.0	54.4	54.4	8	0	0	3	96	100	100	99	36	27-Apr
HOWELL	75	52	73	67	59.6	57.4	60.9	59.3	0	0	0	0	95	95	100	97	42	06-May
GRANT	75			75	54.5		54.5		0	0	0	0	89				34	03-May
FFR 511W	75	53	66	65	56.0	54.8	56.7	55.8	0	0	0	0	96	100	100	99	35	27-Apr
CALDWELL	68	46	57	57	54.4	55.7	54.6	54.9	0	0	0	0	84	93	85	87	37	03-May
MEAN	82	57	68	69	56.8	55.8	56.4	56.4	3	0	0	1	96	99	95	97	37	

CV = 6.7%
LSD(0.05) = 6.4 BU/A

* LOCATION: Calloway County

TABLE 5 -- WHEAT PERFORMANCE TRIALS FOR WESTERN COAL FIELD REGION*, 1991-1993.

VARIETY	---YIELD (BU/AC)---		---TEST WT (LB/BU)---		---PCT LODGED---		---PCT SURVIVAL---		PLANT HEIGHT 1993	HEADING DATE 1993
	1993	1992	1991	MEAN	1993	1992	1991	MEAN		
2684	52	52	56.2	56.2	0	0	0	88	30	06-May
COKER 9803	51	32	55.0	50.9	0	0	0	86	30	05-May
2580	46	46	51.3	51.3	0	0	73	73	29	07-May
2510	46	52	51.9	53.8	0	0	0	88	28	13-May
BECKER	41	11	51.7	45.5	0	0	0	28	31	07-May
VERNE	43	44	54.6	55.5	0	0	0	80	33	10-May
FFR 568W	43	42	54.2	55.8	0	0	0	84	32	10-May
FFR 555W	43	60	48.9	55.8	0	0	0	83	29	08-May
JACKSON	43	43	53.1	53.1	0	0	0	76	29	11-May
FFR 511W	42	43	52.2	55.2	0	0	0	79	30	07-May
MADISON	41	53	53.7	55.7	0	0	0	84	32	07-May
2548	41	48	51.2	50.2	0	0	0	74	27	10-May
WAKEFIELD	40	56	53.9	54.3	0	0	0	80	32	11-May
COKER 9543	39	36	52.5	54.2	0	0	0	68	28	06-May
FREEDOM	38	44	49.4	53.1	0	0	0	81	30	11-May
HOWELL	37	42	54.6	56.4	0	0	0	85	36	11-May
COKER 9474	35	35	52.8	52.8	0	0	0	73	26	07-May
SALUDA	35	19	55.0	42.4	0	0	0	75	28	11-May
AGRIPRO SAWYER	33	41	51.2	53.1	0	0	0	78	28	08-May
CLARK	31	50	51.9	55.2	0	0	0	81	29	06-May
CALDWELL	30	22	52.2	52.4	0	0	0	63	30	10-May
TYLER	28	47	49.4	53.7	0	0	0	69	35	12-May
CARDINAL	27	36	50.5	53.6	0	0	0	65	33	17-May
MEAN	39	42	52.5	53.4	0	0	0	78	30	

CV = 15.3%

LSD(0.05) = 8.4 BU/A

* LOCATION: Princeton, sandstone soil

The 1994 test was discarded due to poor stands in the fall.

TABLE 6 — WHEAT PERFORMANCE TRIALS FOR OHIO VALLEY REGION*, 1992-1994.

VARIETY	---YIELD (BU/AC)---		--TEST WT (LB/BU)--		----PCT LODGED----		---PCT SURVIVAL---		PLANT HEIGHT (IN)	HEADING DATE	
	1994	1993	1992	MEAN	1994	1993	1992	MEAN			1994
AGRIPRO CLEMENS	92	64	92	55.1	0	0	0	94	94	39	11-May
2580	88	64	76	54.8	0	0	0	94	96	37	09-May
BECKER	88	56	72	53.0	0	0	0	91	90	35	13-May
AGRIPRO SAWYER	86	65	70	53.7	0	9	0	91	93	37	10-May
PATRIOT	86	86	86	52.0	0	0	0	93	93	35	10-May
2548	84	60	68	54.6	0	5	0	91	95	35	12-May
FREEDOM	84	55	65	55.6	0	14	0	84	90	39	13-May
JACKSON	82	68	75	54.0	0	9	3	88	93	36	10-May
CARDINAL	80	57	49	55.4	0	0	0	75	84	43	13-May
FFR 555W	80	71	74	53.8	0	0	0	86	93	34	11-May
AGRIPRO HICKORY	80	80	80	55.8	0	0	0	79	79	38	08-May
FFR 568W	79	56	61	56.4	0	6	0	93	94	41	14-May
MADISON	79	71	59	55.4	0	6	0	86	90	38	08-May
WAKEFIELD	79	72	64	55.1	0	8	0	94	91	39	13-May
VERNE	78	68	50	54.5	0	3	0	86	91	41	11-May
HOWELL	78	59	56	58.2	0	9	0	93	95	42	13-May
XW522	77	77	77	55.8	0	0	0	88	88	30	09-May
2510	76	61	63	53.3	0	0	0	89	95	35	18-May
2684	76	72	74	54.2	3	8	0	84	92	35	08-May
XW523	76	76	76	55.9	0	0	0	86	86	35	09-May
FFR EXP 525	76	76	76	53.3	0	0	0	90	90	36	10-May
ERNIE	75	75	75	53.2	0	0	0	90	90	33	08-May
TYLER	73	66	65	55.3	0	4	0	94	98	42	13-May
FFR EXP 392	71	71	71	55.5	0	0	0	84	84	35	13-May
GRANT	71	71	71	55.2	0	0	0	71	71	32	15-May
90W	71	71	71	55.6	0	0	0	95	95	38	12-May
SALUDA	70	62	50	55.6	0	9	0	86	100	34	12-May
FFR 511W	68	62	60	52.8	0	4	0	80	100	35	08-May
CALDWELL	59	49	48	56.5	0	5	0	60	91	35	12-May
CLARK	59	69	43	53.2	0	0	0	81	100	36	10-May
VIGORO 1915	59	59	59	55.6	0	0	0	90	90	36	16-May
MEAN	76	64	56	54.7	0	4	0	88	99	88	36

CV = 13.1%
LSD(0.05) = 11.4 BU/A
* LOCATION: Daviess County

TABLE 7 — WHEAT PERFORMANCE TRIALS FOR BLUEGRASS REGION*, 1991, 1993, 1994.

VARIETY	--YIELD (BU/AC)--		--TEST WT (LB/BU)--		---PCT LODGED---		---PCT SURVIVAL---		PLANT HEIGHT (IN)	HEADING DATE
	1994	1993	1994	1993	1994	1993	1994	1993		
FFR 555W	80	98	59.5	58.1	0	9	100	100	36	13-May
WAKEFIELD	77	85	59.4	58.9	0	21	100	98	40	13-May
2510	77	98	58.7	60.2	0	8	100	100	36	15-May
2684	76	87	61.2	59.4	0	10	100	99	37	11-May
PATRIOT	76	76	58.8	58.8	0	0	100	100	36	11-May
BECKER	75	87	56.8	58.6	0	16	100	100	36	11-May
AGRIPRO SAWYER	75	83	57.1	57.6	0	28	100	99	37	15-May
2580	75	90	58.7	59.6	0	28	100	94	37	12-May
MADISON	75	83	58.1	58.8	1	11	100	99	36	12-May
AGRIPRO CLEMENS	74	74	59.9	53.0	0	0	100	99	39	11-May
VORIS 6040	74	74	56.6	56.6	0	0	100	100	41	15-May
VERNE	73	81	58.8	59.0	0	10	100	100	41	10-May
XW523	71	71	59.4	59.4	0	0	100	100	39	12-May
XW522	71	71	61.2	61.2	0	0	100	100	36	13-May
AGRIPRO HICKORY	70	70	58.7	58.7	0	0	100	100	30	11-May
GRANT	70	70	58.7	58.7	0	0	100	100	36	10-May
JACKSON	69	84	60.3	60.0	0	28	100	100	33	14-May
FFR 568W	69	85	60.2	59.7	0	8	100	99	37	13-May
2548	68	91	58.8	58.7	0	19	100	96	41	14-May
ERNIE	67	67	58.1	58.1	0	0	100	99	38	13-May
90W	67	67	61.8	61.8	0	0	100	100	35	10-May
FREEDOM	67	88	58.2	58.1	0	11	100	100	37	13-May
VORIS 6044	67	67	58.3	58.3	1	11	100	96	38	13-May
FFR 511W	67	83	58.6	57.5	0	11	100	98	37	11-May
FFR EXP 392	67	67	60.5	60.5	0	0	100	95	36	11-May
TYLER	64	89	59.8	59.3	0	8	100	98	36	14-May
CARDINAL	63	76	59.2	59.0	0	10	100	95	41	13-May
FFR EXP 525	63	63	59.8	59.8	1	1	100	99	40	15-May
CALDWELL	59	61	59.5	57.4	0	4	100	90	37	12-May
SALUDA	58	74	61.7	60.7	0	11	100	94	35	14-May
HOWELL	57	79	61.7	61.9	0	19	100	99	34	14-May
CLARK	57	81	58.1	58.9	0	10	100	99	39	16-May
MEAN	68	84	59.5	59.3	0	10	100	97	35	10-May

CV = 8.9%

LSD(0.05) = 7.1 BU/A

* LOCATION: Lexington, Spindletop farm

The 1992 test was discarded due to winterkill.

The 1993 and 1994 tests at this location were treated with fungicides at Feekes growth stages 8 and 10.5.

TABLE 8 — WHEAT PERFORMANCE TRIALS FOR SOUTHERN TIER REGION*, 1992-1994.

VARIETY	---YIELD (BU/AC)---		--TEST WT (LB/BU)--		----PCT LODGED----		---PCT SURVIVAL---		PLANT HEIGHT (IN)	HEADING DATE
	1994	1993	1994	1993	1994	1993	1994	1993		
FFR EXP 525	97	97	57.8	57.8	0	0	100	100	39	08-May
AGRIPRO CLEMENS	93	93	58.1	58.1	0	0	100	100	42	12-May
PATRIOT	92	92	60.2	60.2	0	0	100	100	38	07-May
TYLER	91	64	57.9	57.4	5	0	100	74	43	10-May
WAKEFIELD	91	78	56.9	53.8	3	0	100	84	40	10-May
MADISON	89	73	58.7	53.1	0	0	100	84	42	09-May
FFR 555W	89	75	55.9	53.0	0	0	100	83	36	08-May
ERNIE	89	89	58.5	58.5	0	0	100	100	36	07-May
XW523	88	88	58.7	58.7	0	0	100	100	38	07-May
2580	88	66	58.6	57.0	0	0	100	69	39	06-May
JACKSON	88	81	56.4	58.6	0	0	100	85	40	10-May
BECKER	88	77	57.6	55.4	0	0	100	76	39	10-May
SALUDA	86	60	59.1	53.1	0	0	100	78	37	10-May
AGRIPRO HICKORY	86	86	57.8	57.8	0	0	100	100	39	07-May
VERVE	86	70	57.5	53.3	4	0	100	83	43	08-May
2684	85	78	60.7	58.7	0	0	100	81	38	06-May
90W	84	84	59.3	59.3	0	0	100	100	40	09-May
2510	83	76	55.8	57.5	0	0	100	86	38	13-May
FFR 511W	83	62	56.8	55.8	3	0	100	68	38	06-May
XW522	83	83	59.6	59.6	0	0	100	100	33	09-May
AGRIPRO SAMYER	81	66	57.0	56.5	0	0	100	75	40	08-May
2548	81	65	56.2	57.6	0	0	100	71	37	11-May
GRANT	78	78	56.3	56.3	0	0	100	100	38	12-May
HOWELL	77	58	58.3	55.9	0	0	100	70	44	12-May
FFR 568W	77	63	59.1	53.3	0	0	100	74	43	13-May
FREEDOM	77	63	56.8	55.4	0	0	100	78	40	10-May
VIGORO 1185	76	76	55.6	55.6	0	0	100	100	41	16-May
CARDINAL	75	64	57.1	52.1	0	0	100	71	43	13-May
FFR EXP 392	75	75	56.2	56.2	0	0	100	100	40	12-May
CLARK	74	65	58.0	54.1	0	0	100	71	41	06-May
CALDWELL	70	57	55.7	51.4	3	0	100	65	39	12-May
MEAN	83	68	57.9	55.4	0	0	100	76	39	

CV = 8.2%
LSD(0.05) = 7.7 BU/A

* LOCATION: Princeton, limestone soil

The 1993 and 1994 test at this location was treated with fungicides at the Feekes growth stage 8 and 10.5

TABLE 8a — WHEAT PERFORMANCE TRIALS FOR SOUTHERN TIER REGION*, 1992-1994.

VARIETY	---YIELD (BU/AC)---		--TEST WT (LB/BU)--		---PCT LODGED---		---PCT SURVIVAL---		PLANT HEIGHT (IN)	HEADING DATE						
	1994	1993	1992	MEAN	1994	1993	1992	MEAN			1994	1993				
2510	102	61	71	78	59.3	56.6	56.0	57.3	0	0	96	93	100	96	34	07-May
WAKEFIELD	96	59	64	73	58.5	54.2	58.0	56.9	0	0	99	94	100	98	39	02-May
BECKER	96	64	72	77	56.3	54.9	54.7	55.3	0	0	99	91	100	97	35	02-May
FFR 555W	95	61	70	75	57.1	53.4	55.0	55.2	0	0	100	91	100	97	36	01-May
JACKSON	95	59	62	74	59.2	56.3	56.3	57.8	0	0	94	94	94	94	38	29-Apr
MADISON	92	59	62	74	58.4	55.5	56.5	56.8	0	0	95	91	100	95	38	28-Apr
XW522	92	62	66	73	59.6	59.9	59.6	59.9	0	0	100	100	100	100	31	27-Apr
KW523	92	62	66	73	59.9	59.9	59.9	59.9	0	0	96	96	96	96	35	30-Apr
VERNE	91	62	66	73	58.9	56.2	54.6	56.6	0	0	94	93	100	95	41	01-May
FREEDOM	89	48	61	66	56.0	54.4	55.1	55.2	0	0	99	88	100	95	38	02-May
TYLER	89	41	61	63	57.7	52.6	56.5	55.6	0	0	100	95	100	98	42	03-May
GRANT	88	87	67	70	58.5	56.9	54.7	57.0	0	0	91	90	100	91	36	03-May
CLARK	87	57	67	70	59.5	56.9	54.7	57.0	0	0	96	90	100	95	38	27-Apr
PATRIOT	87	87	67	70	58.1	58.1	58.1	58.1	0	0	94	94	94	94	34	28-Apr
AGRIPRO CLEMENS	85	85	66	75	58.2	58.2	58.2	58.2	0	0	99	99	99	99	41	04-May
2684	84	66	66	75	60.0	57.5	58.8	58.8	0	0	100	91	100	96	35	26-Apr
CARDINAL	84	49	58	64	58.3	55.3	55.6	56.4	0	0	94	88	100	94	40	03-May
AGRIPRO SAWYER	83	50	65	66	55.8	53.8	54.9	54.8	0	0	96	93	100	96	37	30-Apr
2548	83	56	64	68	58.0	54.6	57.9	56.8	0	0	93	90	100	94	34	01-May
AGRIPRO HICKORY	83	69	69	83	60.3	60.3	60.3	60.3	0	0	98	98	98	98	37	28-Apr
2580	82	57	69	69	57.5	55.3	56.4	56.4	0	0	93	84	100	88	35	28-Apr
HOWELL	82	42	63	62	60.7	56.3	61.8	59.6	0	0	98	93	100	97	41	07-May
FFR 568W	82	49	53	61	58.1	56.4	58.2	57.6	0	0	94	93	100	95	39	03-May
FFR 511W	81	56	64	67	57.4	56.3	56.1	56.6	0	0	98	89	100	95	36	03-May
ERNIE	81	81	67	81	57.5	57.5	57.5	57.5	0	0	99	99	99	99	36	29-Apr
FFR EXP 392	80	80	80	80	59.4	59.4	59.4	59.4	0	0	95	95	95	95	34	28-Apr
FFR EXP 525	80	80	80	80	58.9	58.9	58.9	58.9	0	0	95	95	95	95	36	02-May
90W	79	79	79	79	58.9	58.9	58.9	58.9	0	0	94	94	94	94	37	30-Apr
SALUDA	73	55	56	62	58.8	56.8	59.5	58.4	0	0	100	90	100	97	33	02-May
CALDWELL	70	45	51	55	58.5	56.2	53.6	56.1	0	0	83	79	100	87	37	03-May
MEAN	85	55	61	67	58.7	55.8	56.3	56.9	0	0	95	90	100	95	36	

CV = 7.6%
LSD(0.05) = 7.6 BU/A
* LOCATION: Todd County

TABLE 9 — WHEAT PERFORMANCE TRIALS FOR NORTH CENTRAL REGION*, 1992-1994.

VARIETY	---YIELD (BU/AC)---		--TEST WT (LB/BU)--		----PCT LODGED----		---PCT SURVIVAL---		PLANT HEIGHT (IN) 1994				
	1994	1993	1994	1993	1994	1993	1994	1993					
JACKSON	97	55	76	57.3	53.7	55.5	0	8	3	80	74	77	38
SALUDA	97	34	17	49	52.3	46.5	51.9	0	0	3	1	77	38
FFR 555W	96	55	23	58	57.1	50.8	42.2	50.0	0	26	9	73	37
AGRIPRO CLEMENS	95	55	23	58	57.1	50.8	42.2	50.0	3	1	0	90	42
2684	94	47	71	55.4	56.3	55.2	55.2	0	0	0	0	77	37
VERNE	93	47	26	55	56.3	55.8	44.2	52.1	0	3	1	87	43
2580	93	43	68	55.3	53.3	54.3	54.3	0	0	0	0	80	38
WAKEFIELD	92	50	19	54	57.1	53.4	43.0	51.2	0	3	5	85	39
PATRIOT	91	91	91	58.0	58.0	58.0	58.0	0	0	0	0	85	37
FFR EXP 525	91	39	25	50	56.3	56.3	56.3	4	1	1	85	39	
TYLER	87	52	30	56	55.3	51.8	42.1	49.7	0	71	24	63	44
2510	87	52	30	56	56.0	52.7	47.0	51.9	0	40	13	73	38
AGRIPRO HICKORY	87	33	27	49	55.1	55.1	55.1	0	0	0	0	73	39
HOWELL	86	33	27	49	55.2	53.4	45.1	51.2	5	18	8	83	42
MADISON	86	53	33	57	57.1	52.3	49.9	53.1	0	75	25	65	38
XW523	86	86	86	58.1	58.1	58.1	58.1	0	0	0	0	73	37
84	84	84	84	58.2	58.2	58.2	58.2	0	0	0	0	78	31
83	45	33	54	55.1	48.4	45.9	49.8	0	0	5	2	83	34
2548	83	48	18	50	55.1	51.7	40.9	49.2	0	0	0	75	40
FREEDOM	82	40	33	51	56.2	56.2	56.2	0	0	0	0	82	40
90W	81	40	33	51	55.0	50.8	48.1	51.3	0	15	49	77	37
AGRIPRO SAWYER	80	47	22	50	52.2	55.0	45.7	51.0	0	3	1	82	37
BECKER	79	36	24	46	56.0	56.0	56.0	56.0	0	0	0	74	37
FFR EXP 392	79	36	24	46	57.0	50.0	43.3	50.1	0	0	0	67	38
CARDINAL	78	46	29	51	55.1	54.7	41.0	50.9	3	0	5	70	35
GRANT	78	46	29	51	57.1	54.7	41.0	50.9	0	0	0	62	42
FFR 568W	77	45	36	53	55.3	53.3	46.7	52.8	0	40	13	82	35
ERNIE	77	45	36	53	58.3	53.3	46.7	52.8	0	0	0	87	40
FFR 511W	72	39	28	46	55.1	55.1	49.4	53.2	0	3	1	72	33
CLARK	71	30	20	40	55.0	46.0	44.6	48.5	0	0	0	68	36
CALDWELL	71	30	20	40	55.0	46.0	44.6	48.5	0	9	3	42	36
MEAN	85	44	26	64	56.1	52.8	45.4	53.2	0	1	13	77	38

CV = 10.5%
LSD(0.05) = 11.7 BU/A
* LOCATION: Breckinridge County

Table 10. Disease Ratings of Wheat Varieties in 1994¹

VARIETY ²	LEAF ³ RUST	LEAF BLOTCH	GLUME BLOTCH	POWDERY MILDEW	BYDV	WSSMV
CALDWELL	MS	VS	VS	VS	VS	S
CLARK	MS	VS	VS	S	VS*	R
GRANT	--	S	MS	S	--	--
VERNE	MS	S	S	MS	MR	R
CARDINAL	MS	VS	S	VS	S*	S
FREEDOM	MR	MS	MS	MS	VS*	MS
BECKER	VS	VS	VS	VS	S	R
HOWELL	S	MS	MS	VS	MS	S
TYLER	VS	VS	MS	S	S	MR
SALUDA	S	S	S	VS	S	VS
MADISON	MS	S	MS	MS	S*	MR
WAKEFIELD	S	S	S	MS	S*	S
JACKSON	MS	MR	--	MR	VS	S
AGRIPRO SAWYER	MS	S	MS	VS	VS*	S
AGRIPRO HICKORY	--	--	--	--	--	--
AGRIPRO CLEMENS	--	--	--	--	--	--
FFR 555W	S	VS	S	MS	S	MS
FFR 568W	MS	S	S	MR	S*	MS
FFR 511W	MS	S	S	MR	MS	MR
FFR EXP 525	--	--	--	--	--	--
FFR EXP 392	--	--	--	--	--	--
2548	MS	S	MS	S	MS*	VS
2510	MR	MS	MS	VS	VS*	MR
2580	MS	S	--	S	VS*	VS
2684	MR	MR	--	MR	MS*	MR
XW 522	--	--	--	--	--	--
XW 523	--	--	--	--	--	--
ERNIE	--	--	--	--	--	--
VIGORO 1185	--	--	--	--	--	--
VIGORO 1915	--	--	--	--	--	--
VORIS 6040	--	--	--	--	--	--
VORIS 6044	--	--	--	--	--	--
PATRIOT	--	--	--	--	--	--
90W	--	--	--	--	--	--

¹ VS=VERY SUSCEPTIBLE; R=RESISTANT; MR=MODERATELY RESISTANT
 S=SUSCEPTIBLE; MS=MODERATELY SUSCEPTIBLE;
 (--)=INSUFFICIENT OPPORTUNITY TO RATE IN PRESENCE OF DISEASE.

In general, varieties with a VS or S reaction to a given disease will not perform well if that disease becomes severe, while varieties rated R or MR will perform well in those situations. Varieties with an MS reaction will have an intermediate response.

² RATINGS OF NEWLY RELEASED VARIETIES BASED ON 1 YR. AND 1 LOCATION.

³ BASED ON DISEASE PROGRESS AND FINAL DISEASE LEVEL.

⁴ BARLEY YELLOW DWARF VIRUS. *INDICATES RATINGS BASED ON TWO LOCATIONS.

⁵ WHEAT SPINDLE STREAK MOSAIC VIRUS.

TABLE 11 — CHARACTERISTICS OF BARLEY VARIETIES TESTED IN 1994.

VARIETY	PROTECTED	SOURCE	RELEASE DATE	YIELD (BU/AC)	TEST WEIGHT (LB/BU)	LODGING (%)	PLANT HEIGHT (IN.)	SURVIVAL (%)	HEADING DATE
STARLING	YES	VIRGINIA	1993	119.3	46.3	1.7	39.4	100.0	28-Apr
WYSOR	NO	VIRGINIA	1985	116.1	47.1	1.3	39.7	98.3	26-Apr
CALLAO	YES	VIRGINIA	1994	111.8	47.6	8.8	30.9	98.3	24-Apr
SCHOCHOH	NO	KENTUCKY	1989	109.7	49.4	0.0	37.1	100.0	26-Apr
PAMUNKEY	YES	VIRGINIA	1993	107.2	49.5	0.0	36.0	100.0	27-Apr
PIKE	YES	INDIANA	1975	99.0	49.0	1.7	33.9	99.6	23-Apr
BARSOY	NO	KENTUCKY	1966	94.3	50.8	0.4	36.0	99.2	22-Apr

MEAN = 108.2 BU/A

CV = 8.76%

LSD(0.05) = 6.44 BU/A

¹The CV is a measure of experimental error. The lower the CV the more reliable the results.

²The LSD (Least Significant Difference) is the minimum difference required for two varieties to be significantly different from one another.

³Unauthorized propagation prohibited. Seed of these varieties must be sold by variety name only as a class of certified seed. This includes varieties for which protection has been applied and those for which protection has been granted.

TABLE 12 — BARLEY PERFORMANCE TRIALS FOR WESTERN COAL FIELD REGION*, 1990, 1991, 1993.

VARIETY	---YIELD (BU/AC)---		--TEST WT (LB/BU)--		----PCT LODGED----		---PCT SURVIVAL---		PLANT HEIGHT (IN) 1993	HEADING DATE 1993								
	1993	1991	1990	MEAN	1993	1991	1990	MEAN			1993	1991	1990	MEAN				
SCHOCHOH	44	30	45	40	46.3	37.0	41.3	41.5	0	5	18	8	73	36	100	70	24	05-May
PAMUNKEY	43			43	46.7			46.7	0			0	40			40	25	29-Apr
WYSOR	23	45	66	44	43.2	37.0	42.7	41.0	0	0	10	3	74	28	100	67	24	02-May
BARSOY	20	28	34	27	44.2	36.0	41.4	40.5	0	8	25	11	49	29	100	59	24	28-Apr
NOMINI	20			20	41.2			41.2	0			0	53			53	25	03-May
PIKE	17	34	35	28	42.7	36.0	39.8	39.5	0	8	60	23	68	53	100	73	22	30-Apr
STARLING	14			14	37.5			37.5	0			0	46			46	27	04-May
MEAN	27	34	45	35	43.4	36.5	41.3	40.4	0	3	19	7	58	36	100	65	24	

CV = 22.9%

LSD(0.05) = 6.7 BU/A

* LOCATION: Princeton, Sandstone Soil

The 1992 trial was discarded due to winterkill.

The 1994 trial was discarded due to poor stands in the fall.

TABLE 13 — BARLEY PERFORMANCE TRIALS FOR BLUEGRASS REGION*, 1991, 1993, 1994.

VARIETY	---YIELD (BU/AC)---		--TEST WT (LB/BU)--		----PCT LODGED----		---PCT SURVIVAL---		PLANT HEIGHT (IN)	HEADING DATE
	1994	1993	1991	MEAN	1994	1993	1991	MEAN	1994	1994
STARLING	116	98	107	46.1	0	89	30	100	40	29-Apr
WYSOR	108	93	90	48.7	1	89	62	100	40	27-Apr
PAMUNKEY	105	98	101	49.7	0	74	25	100	37	29-Apr
BARSOY	102	84	76	52.5	0	89	51	100	38	25-Apr
PIKE	100	76	69	51.0	5	95	65	100	37	26-Apr
SCHOCHOH	99	69	48	49.7	0	91	52	100	38	29-Apr
CALLAO	95	95	95	51.4	3	1	1	100	33	26-Apr
MEAN	103	86	48	79	1	75	46	100	37	

CV = 7.6%

LSD(0.05) = 9.6 BU/A

* LOCATION: Lexington, Spindletop Farm

The 1992 trial was discarded due to winterkill.

TABLE 14 — BARLEY PERFORMANCE TRIALS FOR SOUTHERN TIER REGION*, 1992-1994.

VARIETY	---YIELD (BU/AC)---			--TEST WT (LB/BU)--			----PCT LODGED----			---PCT SURVIVAL---			PLANT HEIGHT (IN) 1994	HEADING DATE 1994				
	1994	1993	1992 MEAN	1994	1993	1992 MEAN	1994	1993	1992 MEAN	1994	1993	1992 MEAN						
WYSOR	122	88	90	100	47.0	46.0	41.7	44.9	0	0	0	100	81	100	94	40	02-May	
STARLING	122	83	102	102	46.9	45.3	46.1	46.1	0	0	0	100	71	86	86	39	03-May	
CALLAO	116		116	116	49.3		49.3	49.3	0	0	0	100		100	100	30	27-Apr	
SCHOCHOH	110	67	58	78	50.0	49.3	38.2	45.8	0	0	84	28	100	90	74	88	39	01-May
PAMUNKEY	104	93		98	51.1	48.8	50.0	50.0	0	0	0	0	100	73	86	37	02-May	
PIXE	87	59	85	77	47.4	46.1	46.1	46.5	0	0	0	0	100	83	83	88	33	24-Apr
BARSOY	74	68	62	68	49.7	47.0	42.3	46.3	0	0	10	3	100	78	68	82	36	24-Apr
MEAN	105	76	74	85	48.8	47.1	42.1	46.0	0	0	13	4	100	79	81	87	36	

CV = 10.6%

LSD(0.05) = 13.7 Bu/A

* LOCATION: Princeton, Limestone soil

TABLE 14a — BARLEY PERFORMANCE TRIALS FOR SOUTHERN TIER REGION*, 1992-1994.

VARIETY	---YIELD (BU/AC)---		--TEST WT (LB/BU)--		---PCT LODGED---		---PCT SURVIVAL---		PLANT HEIGHT (IN)	HEADING DATE
	1994	1993	1992	1992	1994	1993	1992	1994	1994	1994
CALLAO	125	125	42.1	42.1	24	8	95	95	30	19-Apr
STARLING	121	85	44.1	43.6	5	15	100	83	39	21-Apr
SCHOCHOH	120	81	48.6	46.0	0	25	100	91	35	18-Apr
WYSOR	118	85	45.5	42.8	3	22	95	89	39	20-Apr
PAMUNKEY	113	85	47.6	47.9	0	20	100	78	34	19-Apr
PIKE	111	60	48.5	38.5	0	27	99	84	32	19-Apr
BARSOY	108	67	50.2	43.1	1	12	98	75	35	16-Apr
MEAN	116	77	46.7	43.7	5	18	98	83	35	

CV = 6.8%
 LSD(0.05) = 9.7 BU/A
 * LOCATION: Todd County