

---

# Agronomy Facts No. 19

---

(Revised December, 2003)

## 2003 MARYLAND WHEAT & BARLEY VARIETY PERFORMANCE TRIALS

<http://www.nrsl.umd.edu/extension/crops/wheat/>

Wheat and barley cultivar trials were conducted by the Maryland Agricultural Experiment Station and the Department of Natural Resource Science and Landscape Architecture at five locations across Maryland in the 2002/2003 season: (1) Lower Eastern Shore Research and Education Center's (REC) Poplar Hill Facility near Quantico in Wicomico County; (2) Wye REC at Queenstown in Queen Anne's County; (3) Central Maryland REC's Beltsville Facility in Prince George's County; (4) Central Maryland REC's Clarksville Facility in Howard County; and (5) Western Maryland REC near Keedysville in Washington County.

Entries that are generally available to Maryland producers and that are commonly grown in the state are selected each year for the tests. In addition, new varieties, commercial brands, and advanced breeding lines are included in the tests to compare their performance to that of known varieties. Forty wheat entries and twenty barley entries made up the 2003 tests. Two triticale (a wheat/rye cross) entries were included in the wheat trials. One malting breeding line and one hull-less barley variety were also included in the barley trials. Table 2 lists the suppliers and seed treatments applied to each entry. The following characteristics were evaluated in these trials: grain yield (adjusted to 13.5% moisture), test weight, moisture content at harvest, heading date, lodging, plant height, and powdery mildew reaction. Lodging was based on a score of 0 - 9 where 0=no lodging and 9=flat. Heading date was determined when approximately 50% of the small grain heads had cleared the boot.

Wheat and barley entries in the respective tests were planted (conventional tillage) at all locations in seven-row plots 16 feet in length and later trimmed to 12 feet in randomized blocks with three replications per entry. Both the wheat and barley were planted in 6 inch rows. Wheat was seeded at a rate of 18 seeds per foot of row, which represents a population of approximately 1.3 million plants per acre (or 30 plants/sq. ft.) based on 90% germination. Seeding rate for barley was 96 lb/acre. Plots were mechanically harvested using a small plot combine (Wintersteiger Seedmech Nurserymaster Elite). Plot weight, test weight, and moisture content data of the wheat trials were obtained with a HarvestMaster HM-400 attached to the plot combine. Other location-specific management factors are summarized in Table 1.

### PRODUCTION YEAR

Planting conditions were favorable at Beltsville, Clarksville, and Keedysville in the fall of 2002. Heavy rains delayed planting at the Queenstown location and severely damaged the conventional plots at Salisbury. The winter months were relatively cold and unusually wet. Flooding occurred at Queenstown, further damaging the test. Spring green-up occurred much later than usual and consequently heading dates were a week to 10 days later than usual. Powdery mildew was heavy at Keedysville and Poplar Hill. The spring was very wet. Significant scab damage was observed across the state but was most severe at Queenstown and Clarksville. Barley plots at Queenstown and Salisbury were not harvested because of extensive flood damage. The conventional-planted test at Salisbury was not harvested because of severe flood damage. The data reported from Salisbury are from a no-till test.

## RESULTS

Wheat and barley performance data are summarized in the tables that follow. There are tables summarizing the individual test locations for both small grain crops. In addition, there are regional and statewide summary tables. A two and three-year summary table for selected entries of each crop is also included (see Index to Tables).

Data were statistically analyzed to determine if differences existed between varieties at each location. At the bottom of each table a mean, a LSD, and a CV are reported. Least significant differences (LSD) were calculated at the 5 % probability level. "NS" in the tables indicates that no statistically significant differences were observed for that character at the 5% probability level. The coefficient of variation (CV) is a measure of field variability in relation to the mean. CV's below 15% are an indication that the precision of the test is good in distinguishing differences between varieties. A CV above 15% indicates other factors than varietal differences are causing variability. These factors can include fertility management, different soil types within the study, low spots in the field, etc.

As an aid to assess the performance of individual varieties in the test, relative yield values were calculated. Relative yield value of a variety is the percentage of the mean yield for all varieties at a location. A variety with a relative yield that is consistently greater than 100 is a variety that consistently yields higher than the mean yield of all of the varieties at that location. Tables 4 and 13 summarize the relative yields of wheat and barley, respectively, in the 2003 test. In these tables, the relative yields of those varieties with an asterisk were not statistically different from the highest yielding variety at that location.

## INDEX TO TABLES

	<u>PAGE</u>
Table 1. Test Plot Information.....	3
Table 2. Suppliers of private and public wheat and barley varieties.....	4
<b><u>Wheat Performance</u></b>	
Table 3. Statewide.....	5
Table 4. Two and Three Year Summary.....	6
Table 5. Relative Yield.....	7
Tables 6 - 11. Individual Locations.....	8-12
<b><u>Barley Performance</u></b>	
Table 12. Statewide.....	13
Table 13. Relative Yield.....	13
Table 14. Two and Three Year Summary.....	14
Table 15 -19. Individual Locations.....	14-16

## ACKNOWLEDGMENTS

The Small Grains Breeding Program would like to recognize the farm staff at each of the five locations (Table 1) for their assistance with land preparation, plot management, harvest, and equipment repair. We would also like to thank the **Maryland Crop Improvement Association** and the **Maryland Grain Producers Utilization Board** for their generous financial contributions to our breeding and testing program. The contributions of Dr. Arv Grybauskas and Mr. Sydney Wallace in disease ratings are also greatly appreciated. We also wish to recognize the greenhouse staff at the University of Maryland (Ms. Laurie Hellman-Aker and Ms. Pam McGrath) for all of their assistance during the winter crossing months and Tom Sikora for his hard work during harvest and processing of seed.

The cooperation and support offered by commercial seed companies, state crop improvement associations, and several University Experiment Stations in supplying seed and information about varieties are greatly acknowledged. Finally, a special note of appreciation is also extended to the County Extension Educators who disseminate this information.

**Agronomy Facts No. 19 prepared by: Dr. José M. Costa and Mr. Aaron Cooper**

**Dept. of NRSLA  
Plant Sciences Bldg. Room 2102  
University of Maryland  
College Park, MD 20742-4452**

**Table 1.** 2002/2003 Wheat and Barley Variety Test Plot Information.

**1. Lower Eastern Shore Research and Education Center (LESREC) - Poplar Hill Facility  
Wicomico County - Quantico, MD**

Planting dates: 10/24/02 (no-till). Harvest date: 6/25/03  
 Soil Type: Mattapex silt loam. Previous crop: corn. Fertilizer: Fall: 40lbs N  
 Spring at greenup: 50lbN, 40lbP, 80lbsK, 24lbsS as Ammonium Sulfate  
 Spring at GS 6: 50lbsN as 30-0-0 UAN. Herbicide at GS 8: Harmony Extra 0.5 oz/A.

**Farm Staff: Ron Mulford, Fred Senkbeil, Mike Senkbeil, Dover Dickerson, and Jim Martin.**

**2. Wye Research and Education Center (WREC)  
Queen Anne's County - Queenstown, MD**

Planting date: 10/15/02. Harvest date: 7/9/03  
 Soil Type: Matapeake silt loam. pH = 6.5. Previous crop: corn. Fertilizer: 90# N of 30-0-0 UAN on 4/16/03.  
 Insecticide: Lannate at 1 pt/A for Cereal Leaf Beetle and Hessian fly control (5/15/03)  
 Herbicide: Harmony XL 0.6 oz/A plus surfactant in the spring.

**Farm Staff: Mark Sultenfuss, Reese Stafford, and Joe Streett.**

**3. Central Maryland Research and Education Center (CMREC) - Beltsville Facility (Hayden Farm)  
Prince George's County - Beltsville, MD**

Planting dates: 10/26/02. Harvest dates: 7/6/03 (wheat); 6/27/03 (barley)  
 Soil Type: Sassafra sandy loam. Previous crop: soybeans.  
 Fertilizer: Fall: Wheat = 300# of 10-0-31  
 Spring: 30# N of 30-0-0 UAN followed by another 40# N of 30-0-0 UAN  
 Herbicide: Harmony Extra 0.5 oz/A

**Farm Staff: Kevin Conover, Mike Heyser, Donny Murphy, and Patrick Murphy.**

**4. Central Maryland Research and Education Center (CMREC) - Clarksville Facility  
Howard County - Clarksville, MD**

Planting dates: 10/3/02 (wheat and barley). Harvest dates: 7/14/03 (wheat); 6/24/03 (barley)  
 Soil type: Chester silt loam. pH= 6.8. Previous crop: corn  
 Fertilizer: Fall: 18-40-90. Spring: Wheat = 60# N. of 30-0-0 UAN; Barley = 40# N of 30-0-0 UAN  
 Herbicide: Harmony Extra 0.3 oz/A in March 2003, and 0.3 oz/A in April 2003

**Farm Staff: Dave Justice, and Tim Ridgley Sr.**

**5. Western Maryland Research and Education Center (WREC) - Keedysville Facility  
Washington County - Keedysville, MD**

Planting dates: 10/4/02 (wheat and barley). Harvest dates: 7/14/03 (wheat); 6/27/03 (barley).  
 Soil Type: Hagerstown silt loam (silty variant); Previous crop: corn  
 Fertilizer: Fall: none. Spring: Wheat = 45# N/A as Urea; Barley = 40# N/A as Urea  
 Herbicide: Harmony Extra 0.5 oz/A

**Farm Staff: Tim Ellis and Dave Wyand.**

**Table 2.** Sources of Winter Wheat, Triticale, and Barley Entries Tested in Maryland, 2003.

<b>Supplier/Address/Local Rep.</b>	<b>Brand</b>	<b>Varieties and Seed Treatments*</b>
AgriPro Wheat; 6025 W. 300 S., Lafayette, IN 47905; 1(800)858-4603	AgriPro	Patton (R), Benton (D), Crawford (None)
Novartis Seeds, Inc.; P.O. Box 340, Hartsville, SC 29551	NK	Coker 9835 (DXL), Coker 9663 (DXL), Coker 9184 (DXL), Century II (DXL), Coker 9295 (DXL), B960457(DXL)
Pioneer Hi-Bred Intl., Inc.; P.O. Box 280, Mount Joy, PA 17552	Pioneer	25R37 (DXL), 26R58 (DXL), 25R78 (DXL)
Resource Seeds, Inc.; 2355 Rice Pike, Union, KY 41091 Local Rep. = Southern States Coop.	Trical	2115 (RSI301), 2205 (RSI331) (None)
Southern States Coop.; P.O. Box 26234, Richmond, VA 23260; Jerry Hevner (302) 629-7991	FFR	520 (RT), 522 (B), 535 (RT), 550 (RT), 560 (GXT)
J.G.L., Inc., 301B Airport Road, Plymouth IN 46563	JGL	Coyote (None)
Royster-Clark AgriBusiness, Inc., 999 Waterside Drive, Suite 800, Norfolk VA 23510	Vigoro	Tribute (RT)
UniSouth Genetics, Inc.; 2640-C Nolensville Road, Nashville, TN 37211; David McKinney 1(800)505-3133	USG	3209 (RT), 3350 (RT), 3430 (RT)
Florida Agric. Exp. Stn.	-----	FL 304 (RT)
University of Georgia, GA Station, 1109 Experiment St., Griffin, GA 30223	-----	931241E16 (RT), 931470E62 (D)
Maryland Agric. Exp. Stn.	-----	Catoctin (RT), MD & MV Breeding Lines (RT)
Virginia Tech and Virginia Crop Imp. Assoc., 9142 Atlee Station Road, Mechanicsville, VA 23111	-----	Jackson (B), Roane (B), Sisson (RT), McCormick (RT), VA Breeding Lines (RT)
Kentucky Agric. Exp. Stn.	-----	Barsoy (RT)
Maryland Agric. Exp. Stn.	-----	Catchpenny (RT), MD Breeding Lines (RT)
North Carolina Agric. Exp. Stn.	-----	Neuse (RT)
Pennsylvania Agric. Exp. Stn.	-----	Pennbar 66 (RT), PA breeding lines (RT)
Virginia Tech and Virginia Crop Imp. Assoc., 9142 Atlee Station Road, Mechanicsville, VA 23111	-----	Nomini (RT), Callao (RT), Doyce (RT), Price (RT), Thoroughbred (RT) VA Breeding Lines (RT)
USDA, ARS; Aberdeen, ID	-----	Ab 1347 (Malt) (RT)

\*Seed treatment codes in parentheses after each entry are as follows: **RT** = Raxil/Thiram; **B** = Baytan;; **G** = Gaucho; **D** = Dividend; **DXL** = Dividend/Apron.

The information presented here is also available on the World Wide Web at:

<http://www.nrsl.umd.edu/extension/crops/wheat/>

**Table 3 2003 Maryland State Wheat Variety Performance Trials Averaged Over Quantico, Queenstown, Beltsville, Clarksville, and Keedysville.**

Wheat Entry	Yield (bu/A)	Test Weight (lbs/bu)	Heading Date (May)	Height (inches)	Lodging (0-9)	Powdery Mildew (0-9)	Beards <sup>1</sup> (Awns)
MD71-5	59.5	53.5	15	32.1	2.2	0.1	Long
MV5-46	58.1	55.1	15	35.4	4.2	0.2	None
SS-520	54.6	52.6	14	38.1	4.3	1.3	None
McCormick	53.0	55.6	17	34.3	3.3	0.0	None
VA97W-024	51.6	52.5	19	37.8	4.5	2.9	None
MD11-52	50.8	52.8	14	31.8	4.5	0.4	Tip
Vigoro Tribute	50.2	55.6	16	34.8	2.5	0.0	None
VA97W-375RS	49.0	52.6	14	33.7	4.5	0.2	Tip
25R37	48.3	53.4	17	35.6	3.3	3.3	None
Coyote	47.9	53.6	14	36.6	3.8	2.4	None
Sisson	47.9	51.6	14	33.6	4.5	3.0	None
VA98W-706	47.9	52.9	15	33.6	5.7	0.4	None
B960457	46.6	48.6	18	40.3	3.3	4.7	None
Neuse	46.1	56.6	20	36.0	4.5	0.0	None
Patton	46.0	51.3	14	38.9	3.0	7.0	None
MV27-78	45.9	51.3	16	35.2	4.3	0.5	None
SS-550	45.8	50.8	15	34.2	2.5	1.8	None
SS-560	44.8	50.3	19	34.5	3.7	3.3	None
Jackson	44.3	51.7	18	37.5	5.0	5.3	None
Roane	43.8	53.7	18	35.9	3.2	6.3	None
25R78	43.3	50.3	14	34.7	2.7	6.3	Long
Benton	43.3	49.6	17	36.0	2.7	1.9	None
Crawford	42.6	51.8	14	36.5	2.3	0.9	None
USG 3209	42.3	50.1	17	35.2	4.8	2.8	None
Coker 9663	42.2	52.5	18	41.3	5.5	5.1	None
SS-535	42.1	52.9	18	36.2	2.7	2.1	None
Catoctin	42.0	53.5	17	39.9	5.7	4.6	None
Trical 2115 (RSI 301)*	41.8	45.8	10	38.3	2.3	0.0	Long
Coker 9184	41.3	54.4	19	36.2	2.3	4.4	None
Trical 2205 (RSI 331)*	41.3	46.5	12	39.1	4.0	0.0	Long
GA 931241 E16	41.1	51.0	19	39.2	4.7	4.8	None
SS-522	40.9	51.4	14	36.7	2.8	6.2	None
Century II	40.4	51.4	16	37.9	4.2	6.3	None
USG 3350	39.7	49.9	14	39.2	1.7	7.7	None
26R58	38.8	48.3	16	34.3	3.7	4.6	Long
GA 931470 E62	37.9	50.8	15	34.4	4.7	1.4	None
Coker 9295	37.9	50.6	21	36.7	3.3	3.1	None
USG 3430	32.5	48.0	14	40.3	2.5	8.4	None
Coker 9835	32.3	48.3	20	33.8	2.2	5.6	None
FL 304	23.5	51.2	17	39.8	4.3	7.4	Long
State-wide Means	44.5	51.6	16	36.3	3.6	3.2	-
LSD	5.4	-	1 day	1.6	3.1	-	-
CV (%)	17.2	-	11.6	6.3	51.0	-	-

<sup>1</sup>Entries with a few awns at the tip of the spike were labeled as tip-awned.

\* These are a wheat/rye cross or triticale, not a wheat variety.

**Table 4. Two-year and Three-year Averages of Grain Yield and Test Weight of Wheat Entries in Maryland, 2001-2003.**

Entry	Two-year average		Three-year average	
	Yield (bu/A)	Test Weight (lbs/bu)	Yield (bu/A)	Test Weight (lbs/bu)
MD71-5	66.2	56.2	-	-
Vigoro Tribute	66.0	58.3	72.0	58.5
McCormick	66.0	58.1	-	-
SS520	65.4	55.2	71.1	55.6
SS560	62.9	54.4	68.9	55.1
Sisson	62.4	55.2	70.0	56.0
MD11-52	62.2	56.1	69.0	56.6
SS550	62.1	54.6	69.4	55.6
USG3209	60.2	54.0	69.4	55.1
25R37	60.2	56.4	69.2	56.8
SS535	58.7	56.3	68.0	56.9
SS522	58.2	55.5	66.6	56.6
Agripro Patton	58.0	55.0	66.4	55.8
CenturyII	57.3	55.1	66.8	56.0
RSI301*	57.2	49.5	-	-
RSI331*	57.1	49.1	-	-
Jackson	56.7	55.4	63.9	56.2
Coker 9663	56.7	55.4	65.2	56.1
Coker 9184	55.5	57.0	64.1	57.4
Roane	54.5	56.9	63.8	57.5
Catoctin	52.3	56.4	60.1	56.9
Coker 9835	49.0	52.6	60.0	54.0
Florida 304	37.2	54.6	47.2	55.7

\* These are a wheat/rye cross or triticale, not a wheat variety.

**Table 5.** Relative Yield of Wheat Entries Compared to the Mean Yield of All Entries at Each Location and Throughout the State in 2003.

Wheat Entry	State	Quantico	Queenstown	Beltsville	Clarksville	Keedysville
-----Relative Yield (%)-----						
MD71-5	135*	139*	137*	129*	144*	130*
MV5-46	131*	130*	131*	139*	144*	127*
SS-520	123*	134*	136*	144*	99	113
McCormick	120	111	141*	119	124*	122*
VA97W-024	117	111	115	93	142*	118*
MD11-52	115	134*	100	116	117*	102
Vigoro Tribute	114	106	143*	120	123*	101
VA97W-375RS	111	128*	94	99	113*	105
25R37	109	95	105	101	124*	116*
Coyote	108	113	104	108	97	118*
Sisson	108	123*	112	119	77	112
VA98W-706	108	119	106	104	111	99
B960457	106	108	107	107	86	117*
Neuse	104	90	116*	88	133*	103
Patton	104	102	112	106	88	115*
MV27-78	104	104	104	82	104	113
SS-550	104	127*	88	107	84	98
SS-560	101	99	92	85	103	119*
Jackson	100	101	97	127*	92	93
Roane	99	93	120*	111	98	90
25R78	98	90	103	109	97	102
Benton	98	99	91	78	104	107
Crawford	96	106	87	103	102	83
USG 3209	96	97	80	111	104	92
Coker 9663	95	85	107	110	89	103
SS-535	95	100	102	89	89	91
Catoctin	95	93	122*	107	83	85
Trical 2115	95	82	103	86	94	108
Coker 9184	93	93	69	76	134*	87
Trical 2205	93	59	116*	94	116*	102
GA 931241 E16	93	93	88	107	100	82
SS-522	93	101	104	100	71	91
Century II	91	104	75	107	80	86
USG 3350	90	84	94	92	77	101
26R58	88	81	83	91	90	94
GA 931470 E62	86	104	59	97	84	75
Coker 9295	86	82	75	83	82	101
USG 3430	74	68	72	91	62	80
Coker 9835	73	84	50	62	89	70
FL 304	53	46	57	58	47	57

\*Indicates that the relative yield of an entry is not significantly different ( $LSD_{0.05}$ ) from the highest yielding entry at that location.

**Table 6.** 2003 Maryland State Wheat Variety Performance Trials at the Poplar Hill Facility (No-Till)- **Quantico**, MD.

<b>Wheat Entry</b>	<b>Yield (bu/A)</b>	<b>Test Weight (lbs/bu)</b>	<b>Heading Date (May)</b>	<b>Height (inches)</b>	<b>Powdery Mildew (0-9)</b>
MD71-5	85.2	57.1	9	33.7	0.0
MD11-52	82.0	56.6	8	34.7	0.0
SS-520	81.7	55.8	6	41.0	2.0
MV5-46	79.5	58.1	9	38.7	0.0
VA97W-375RS	78.4	55.4	8	35.3	0.0
SS-550	77.7	53.5	9	36.3	2.0
Sisson	75.3	54.1	9	34.1	2.0
VA98W-706	73.0	55.6	9	36.1	0.0
Coyote	69.2	58.7	8	39.1	4.0
VA97W-024	68.0	53.6	11	41.4	3.0
McCormick	67.9	57.1	10	35.3	0.0
B960457	65.7	52.5	10	44.0	5.0
Crawford	64.6	53.7	7	38.7	0.0
Vigoro Tribute	64.5	56.9	9	37.3	0.0
GA 931470 E62	63.8	55.9	8	38.4	0.5
MV27-78	63.6	54.0	9	37.3	0.5
Century II	63.4	54.9	9	41.7	5.0
Patton	62.3	53.5	8	42.3	8.0
Jackson	62.0	55.0	9	40.0	7.0
SS-522	61.6	53.6	7	39.1	7.0
SS-535	61.2	54.5	9	38.4	2.0
Benton	60.5	51.9	10	38.7	0.0
SS-560	60.3	51.6	10	38.0	4.0
USG 3209	59.4	53.0	10	36.0	4.0
25R37	57.9	53.3	10	37.0	1.0
GA 931241 E16	57.1	55.6	10	41.7	6.0
Coker 9184	57.0	54.5	10	38.1	7.0
Roane	56.8	54.5	10	36.4	6.0
Catoctin	56.7	55.5	10	43.0	5.0
25R78	55.2	52.1	8	35.7	9.0
Neuse	54.9	57.7	11	36.4	0.0
Coker 9663	51.6	56.1	10	44.7	6.0
USG 3350	51.5	50.2	9	41.7	7.0
Coker 9835	51.1	51.6	11	36.7	7.0
Trical 2115*	50.1	43.9	6	40.7	0.0
Coker 9295	49.8	51.1	12	37.7	1.0
26R58	49.7	52.2	10	37.0	6.0
USG 3430	41.6	48.1	8	43.1	9.0
Trical 2205*	36.0	44.2	9	40.7	0.0
FL 304	28.3	50.6	10	42.1	9.0
<b>Location Means</b>	<b>61.1</b>	<b>53.6</b>	<b>9</b>	<b>38.7</b>	<b>3.4</b>
<b>State-wide Means</b>	<b>44.5</b>	<b>51.6</b>	<b>16</b>	<b>36.3</b>	<b>3.2</b>
<b>LSD (0.05)</b>	<b>11.6</b>	<b>1.9</b>	<b>1</b>	<b>3.2</b>	<b>-</b>
<b>CV (%)</b>	<b>11.7</b>	<b>2.1</b>	<b>9.9</b>	<b>5.1</b>	<b>-</b>

\* These are a wheat/rye cross or triticale, not a wheat variety.

**Table 7. 2003 Maryland State Wheat Variety Performance Trials at the Wye Facility - Queenstown, MD.**

<b>Genotype</b>	<b>Yield (Bu/A)</b>	<b>Test Weight (Lbs/Bu)</b>	<b>Heading (May)</b>	<b>Height (inches)</b>	<b>P. Mildew (0-9)</b>	<b>Scab Severity (%)</b>	<b>Tombstones (%)</b>	<b>DON<sup>1</sup> (ppm)</b>	<b>Kernel Weight (g/100)</b>
Vigoro Tribute	64	55	17	31	0	15	2	2	3.3
McCormick	63	55	18	31	0	15	5	3	2.8
MD71-5	61	52	16	29	0	35	12	6	3.3
SS-520	61	51	15	36	1	30	9	7	3.3
MV5-46	59	54	15	32	0	30	6	4	4.2
Catoctin	55	54	20	37	2	10	5	3	4.1
Roane	54	53	19	33	6	10	10	6	2.7
Neuse	52	57	22	32	0	10	7	4	3.2
Trical 2205*	52	48	16	36	0	20	8	10	3.2
VA97W-024	52	49	20	32	4	25	11	6	3.1
Sisson	50	50	14	28	4	35	12	7	2.7
Patton	50	51	17	34	8	20	7	4	3.2
Coker 9663	48	52	19	36	5	25	10	7	3.1
B960457	48	49	20	37	6	15	12	5	3.3
VA98W-706	48	51	16	29	0	30	12	4	2.6
25R37	47	51	18	32	5	20	7	4	3.1
SS-522	47	49	13	35	6	30	21	8	2.8
MV27-78	47	49	16	32	0	30	15	7	2.6
Coyote	47	55	17	30	2	15	5	3	3.1
25R78	46	49	16	31	6	25	11	4	3.0
Trical 2115*	46	45	14	37	0	20	7	8	3.8
SS-535	46	50	20	33	2	25	15	12	2.9
MD11-52	45	50	15	27	1	40	14	6	2.7
Jackson	44	48	19	34	4	30	15	7	2.8
VA97W-375RS	42	50	16	29	0	40	17	7	2.8
USG 3350	42	47	16	34	9	10	3	1	2.6
SS-560	41	49	21	28	3	15	10	7	2.5
M98-1661	41	49	20	29	4	20	9	6	3.0
GA 931241 E16	39	51	21	36	4	35	18	10	3.1
SS-550	39	49	17	28	1	20	10	4	2.6
Crawford	39	51	17	30	2	30	16	9	2.7
26R58	37	46	18	31	6	30	9	6	2.9
USG 3209	36	46	21	32	3	20	13	4	2.9
B950943	34	49	25	34	6	10	12	7	3.1
Century II	34	51	20	34	8	30	22	8	2.9
USG 3430	33	48	16	33	9	25	6	4	2.4
Coker 9184	31	53	20	32	4	30	13	7	3.0
GA 931470 E62	27	41	17	30	1	35	22	8	2.8
FL 304	26	40	18	36	6	20	24	12	2.4
Coker 9835	22	42	22	30	6	20	22	12	2.7
<b>Means</b>	<b>44.9</b>	<b>50</b>	<b>19</b>	<b>32.3</b>	<b>3.5</b>	<b>24.2</b>	<b>11.6</b>	<b>6.4</b>	<b>3.0</b>
<b>LSD (0.05)</b>	<b>12.1</b>	<b>-</b>	<b>4</b>	<b>2.5</b>	<b>3</b>	<b>-</b>	<b>2.3</b>	<b>5.1</b>	<b>0.4</b>
<b>CV (%)</b>	<b>16.6</b>	<b>-</b>	<b>13.5</b>	<b>4.5</b>	<b>3</b>	<b>-</b>	<b>49</b>	<b>51</b>	<b>7.6</b>

<sup>1</sup>DON = Deoxinivalenol levels determined by Dr. Patrick Hart (Michigan State University).

\* These are a wheat/rye cross or triticale, not a wheat variety.

NA: Indicates not enough seed for test weight determination.

**Table 8.** 2003 Maryland State Wheat Variety Performance Trials at the Hayden Farm - **Beltsville, MD.**

<b>Wheat Entry</b>	<b>Yield (bu/A)</b>	<b>Test Weight (lbs/bu)</b>	<b>Heading Date (May)</b>	<b>Height (inches)</b>
SS-520	40.8	53.7	13	34.8
MV5-46	39.5	55.1	13	32.0
MD71-5	36.6	51.2	13	26.4
Jackson	36.0	53.3	16	35.4
Vigoro Tribute	34.2	56.4	14	32.3
Sisson	33.9	53.2	12	32.0
McCormick	33.8	54.9	14	32.0
MD11-52	33.0	52.1	12	25.8
Roane	31.6	55.0	16	31.8
USG 3209	31.4	51.3	15	32.1
Coker 9663	31.3	53.2	14	41.4
25R78	31.0	50.4	13	31.0
Coyote	30.7	54.1	11	31.4
GA 931241 E16	30.5	53.8	16	36.0
Catoctin	30.5	54.7	15	37.7
Century II	30.5	52.5	14	33.4
SS-550	30.3	51.7	13	32.7
B960457	30.3	49.3	16	37.7
Patton	30.1	51.1	13	32.8
VA98W-706	29.5	52.2	14	31.3
Crawford	29.3	52.7	13	31.7
25R37	28.6	52.9	15	31.3
SS-522	28.4	53.1	13	33.4
VA97W-375RS	28.2	52.6	12	27.8
GA 931470 E62	27.6	53.6	13	29.1
Trical 2205 (RSI 331)*	26.8	44.1	9	36.8
VA97W-024	26.4	51.8	17	33.1
USG 3350	26.0	49.5	13	35.3
26R58	25.9	49.2	14	29.7
USG 3430	25.7	48.4	12	36.4
SS-535	25.4	52.6	16	33.3
Neuse	24.9	57.0	18	33.4
Trical 2115 (RSI 301)*	24.5	46.2	6	35.4
SS-560	24.1	50.7	16	29.7
Coker 9295	23.7	51.3	22	33.1
MV27-78	23.4	51.7	13	29.3
Benton	22.1	49.3	15	31.0
Coker 9184	21.7	54.2	17	32.7
Coker 9835	17.6	49.1	17	30.4
FL 304	16.4	47.4	16	36.0
<b>Location Means</b>	<b>28.4</b>	<b>51.9</b>	<b>14</b>	<b>33</b>
<b>State-wide Means</b>	<b>44.5</b>	<b>51.6</b>	<b>16</b>	<b>36.3</b>
<b>LSD(0.05)</b>	<b>6.0</b>	<b>-</b>	<b>1 day</b>	<b>2.8</b>
<b>CV (%)</b>	<b>12.9</b>	<b>-</b>	<b>5.6</b>	<b>5.2</b>

\* This is a wheat/rye cross or triticale, not a wheat variety.

**Table 9.** 2003 Maryland State Wheat Variety Performance Trials at the Clarksville Facility - Clarksville, MD.

Wheat Entry	Yield (bu/A)	Test Weight (lbs/bu)	Heading Date (May)	Height (inches)	Lodging (0-9)	Streak Mosaic Virus (0-9)
MD71-5	57.4	51.5	19	34.0	3.0	0
MV5-46	57.2	52.9	17	36.0	5.3	1
VA97W-024	56.3	51.3	25	37.0	5.3	1
Coker 9184	53.4	52.0	24	38.0	1.7	1
Neuse	52.8	53.6	24	36.0	2.3	0
25R37	49.4	49.0	22	37.3	3.7	2
McCormick	49.3	53.5	24	36.7	3.3	0
Vigoro Tribute	49.0	52.3	20	35.3	1.3	6
MD11-52	46.6	50.6	17	35.0	5.3	2
Trical 2205 (RSI 331)*	46.3	45.8	15	41.3	4.7	0
VA97W-375RS	45.2	50.7	16	36.3	4.3	0
VA98W-706	44.3	50.7	20	33.3	7.0	0
USG 3209	41.6	45.6	21	36.7	6.3	1
Benton	41.6	44.9	22	38.7	4.0	0
MV27-78	41.3	47.8	18	37.7	4.0	0
SS-560	41.1	45.9	24	36.7	2.3	2
Crawford	40.4	46.7	17	40.0	3.7	1
GA 931241 E16	39.9	41.0	24	38.7	5.3	2
SS-520	39.4	48.4	18	37.0	5.3	7
Roane	38.9	50.5	21	37.7	3.3	1
Coyote	38.7	47.1	17	38.7	3.7	1
25R78	38.7	47.0	17	36.7	0.0	1
Trical 2115 (RSI 301)*	37.5	44.8	12	37.0	0.3	0
Jackson	36.5	46.4	23	37.7	7.3	2
26R58	35.8	43.9	20	37.7	2.0	0
Coker 9835	35.6	47.6	25	34.0	0.7	4
Coker 9663	35.3	44.0	22	39.7	5.3	9
SS-535	35.2	50.6	23	37.7	2.0	2
Patton	35.1	47.1	16	42.3	3.3	2
B960457	34.4	40.5	23	39.3	2.3	8
SS-550	33.6	46.8	17	35.0	3.3	4
GA 931470 E62	33.6	48.7	18	37.0	4.0	9
Catoctin	33.0	49.7	23	38.0	6.3	6
Coker 9295	32.7	48.0	25	37.3	2.7	3
Century II	31.9	44.1	20	40.3	3.7	5
USG 3350	30.8	44.5	18	41.3	1.3	0
Sisson	30.6	47.3	17	34.3	5.0	6
SS-522	28.4	48.7	19	35.0	2.7	3
USG 3430	24.7	43.6	17	42.0	3.0	1
FL 304	18.6	NA	22	41.3	5.7	4
<b>Location Means</b>	<b>39.8</b>	<b>47.8</b>	<b>20</b>	<b>37.5</b>	<b>3.6</b>	<b>2.4</b>
<b>State-wide Means</b>	<b>44.5</b>	<b>51.6</b>	<b>16</b>	<b>36.3</b>	<b>3.6</b>	<b>-</b>
<b>LSD (0.05)</b>	<b>9.3</b>	<b>-</b>	<b>3</b>	<b>3.2</b>	<b>2.3</b>	<b>-</b>
<b>CV (%)</b>	<b>14.4</b>	<b>-</b>	<b>11</b>	<b>5.3</b>	<b>39.0</b>	<b>-</b>

\* This is a wheat/rye cross or triticale, not a wheat variety.

NA: Indicates not enough seed for test weight determination.

**Table 10.** 2003 Maryland State Wheat Variety Performance Trials at the Keedysville Facility - **Keedysville, MD.**

<b>Wheat Entry</b>	<b>Yield (bu/A)</b>	<b>Test Weight (lbs/bu)</b>	<b>Heading Date (May)</b>	<b>Height (inches)</b>	<b>Lodging (0-9)</b>	<b>Powdery Mildew (0-9)</b>
MD71-5	68.6	54.7	20	35.0	1.3	0.3
MV5-46	66.9	54.6	20	38.7	3.0	0.5
McCormick	64.0	56.0	20	36.0	3.3	0.0
SS-560	62.5	53.3	23	39.7	5.0	3.0
Coyote	62.0	56.8	18	43.7	4.0	1.3
VA97W-024	61.9	55.1	24	44.7	3.7	1.7
B960457	61.5	52.4	20	43.7	4.3	3.0
25R37	60.9	55.8	19	40.3	3.0	4.0
Patton	60.8	52.5	17	44.0	2.7	5.0
MV27-78	59.4	54.4	22	39.7	4.7	1.0
SS-520	59.3	52.1	16	41.7	3.3	1.0
Sisson	59.0	53.0	17	40.0	4.0	3.0
Trical 2115 (RSI 301)*	57.1	48.3	12	40.7	4.3	0.0
Benton	56.1	51.8	19	40.7	1.3	1.7
VA97W-375RS	55.1	53.2	18	37.3	4.7	0.5
Coker 9663	54.3	54.9	23	46.3	5.7	4.3
Neuse	54.2	56.9	23	39.3	6.7	0.0
Trical 2205 (RSI 331)*	53.8	49.6	14	40.0	3.3	0.0
MD11-52	53.7	53.6	17	36.0	3.7	0.3
25R78	53.6	53.0	18	39.3	5.3	4.0
USG 3350	53.2	52.3	17	43.7	2.0	7.0
Vigoro Tribute	53.2	56.7	18	37.3	3.7	0.0
Coker 9295	53.0	52.9	23	41.3	4.0	2.3
VA98W-706	52.2	52.9	18	37.0	4.3	1.3
SS-550	51.7	53.3	19	38.7	1.7	2.3
26R58	49.7	50.0	18	37.3	5.3	1.7
Jackson	49.0	54.5	21	40.7	2.7	5.0
USG 3209	48.7	54.7	20	39.3	3.3	1.5
SS-522	47.8	52.8	16	40.7	3.0	5.7
SS-535	47.7	55.9	21	38.3	3.3	2.3
Roane	47.5	55.7	23	40.3	3.0	7.0
Coker 9184	45.6	56.8	22	40.3	3.0	2.3
Century II	45.3	53.5	19	40.0	4.7	6.0
Catoctin	44.6	52.1	21	43.7	5.0	6.7
Crawford	43.8	53.5	17	42.3	1.0	0.7
GA 931241 E16	43.2	52.6	22	45.0	4.0	4.3
USG 3430	42.0	51.5	16	45.7	2.0	7.3
GA 931470 E62	39.5	53.1	18	36.7	5.3	2.7
Coker 9835	36.6	51.2	23	37.0	3.7	3.7
FL 304	29.8	54.0	21	43.3	3.0	7.3
<b>Location Means</b>	<b>52.7</b>	<b>53.6</b>	<b>19</b>	<b>40.4</b>	<b>3.6</b>	<b>2.8</b>
<b>State-wide Means</b>	<b>44.5</b>	<b>51.6</b>	<b>16</b>	<b>36.3</b>	<b>3.6</b>	<b>3.2</b>
<b>LSD (0.05)</b>	<b>8.7</b>	<b>-</b>	<b>1</b>	<b>2.5</b>	<b>3.4</b>	<b>1.9</b>
<b>CV (%)</b>	<b>10.1</b>	<b>-</b>	<b>4.7</b>	<b>3.7</b>	<b>57.1</b>	<b>41.9</b>

\* This is a wheat/rye cross or triticale, not a wheat variety.

**Table 11.** 2003 Maryland State Barley Performance Trials averaged over **Beltsville, Clarksville, and Keedysville.**

Barley Entry	Yield (bu/A)	Test Weight (lbs/bu)	Heading Date (May)	Height (in)	Lodging (0-9)	Beards (Awns)
Thoroughbred	71.1	46.3	7	32.0	4.2	Long
Price	55.4	44.0	7	30.3	4.5	Medium
Callao	52.4	45.7	4	27.9	7.3	Medium
Barsoy	52.3	46.2	2	33.6	4.7	Long
PA 8649-95	52.3	44.6	8	35.6	6.3	Long
MD931043-25	52.0	46.4	4	29.6	6.7	Medium
Pennbar 66	51.8	44.0	8	35.6	4.7	Long
PA 8950-9	49.7	44.5	7	38.0	7.5	Long
MD931042-98	48.8	43.0	7	28.6	6.8	Medium
MD931046-93	46.7	43.8	5	33.6	6.2	Medium
Ab1347	46.0	42.4	12	32.1	7.5	Long
MD931042-61	44.5	44.3	6	27.6	8.2	Medium
MD931048-38	43.9	43.4	6	33.7	5.3	Medium
Nomini	43.2	39.9	4	38.6	5.0	None
Catchpenny	41.8	40.0	4	33.0	6.5	None
MD931046-38	41.8	45.0	6	33.5	7.2	Medium
MD931046-83	41.1	41.6	5	33.1	7.2	Medium
MD931043-46	39.6	41.5	2	32.5	6.5	Medium
Doyce	36.4	53.1	7	30.2	5.5	Long
MD931001-90	36.0	38.5	3	35.2	7.8	None
State-wide Means	47.5	44.4	6	33.3	6.3	-
LSD	7.3	1.6	1	2.0	1.8	-
CV (%)	19.2	4.4	23.5	7.1	24.7	-

**Table 12.** Relative Yield of Barley Entries Compared to the Mean Yield of All Entries at Each Location and Throughout the State in 2003.

Barley Entry	State	Beltsville	Clarksville	Keedysville
-----Relative Yield (%)-----				
Thoroughbred	150*	135*	159*	156*
Price	117	118	118	115
Callao	110	119	107	105
Barsoy	110	90	118	116
PA 8649-95	110	120	99	98
MD931043-25	109	105	117	114
Pennbar 66	109	106	110	108
PA 8950-9	105	126	92	90
MD931042-98	103	86	117	115
MD931046-93	103	85	99	98
Ab1347	97	135	89	88
MD931042-61	94	114	102	100
MD931048-38	92	85	96	80
Nomini	91	83	114	112
Catchpenny	88	75	80	78
MD931046-38	83	83	81	94
MD931046-83	88	92	77	76
MD931043-46	83	68	105	103
Doyce	77	68	85	84
MD931001-90	76	82	72	71

\*Indicates that the relative yield of an entry is not significantly different ( $LSD_{0.05}$ ) from the highest yielding entry at that location.

**Table 13.** Two-year and three-year averages of grain yield and test weight of barley entries in Maryland, 2001-2003.

Barley Entry	Two-year average		Three-year average	
	Yield (bu/A)	Test Weight (lbs/bu)	Yield (bu/A)	Test Weight (lbs/bu)
Thoroughbred	88.6	47.4	98.3	47.5
PA 8950-9	80.5	46.2	-	-
Pennbar 66	76.3	46.0	88.9	45.6
PA 8649-95	75.8	45.8	90.9	45.9
Price	74.3	45.6	87.5	46.5
Callao	68.0	46.3	80.3	46.8
Ab1347	67.4	44.1	81.6	45.0
Nomini	64.6	42.7	80.0	43.1
Catchpenny	61.7	42.3	81.2	43.0
Barsov	56.6	46.8	65.2	46.9

**Table 14.** 2003 Maryland State Barley Variety Performance Trials at the Hayden Farm Facility - Beltsville, MD.

Barley Entry	Yield (bu/A)	Test Weight (lbs/bu)	Heading Date (May)	Height (in)
Thoroughbred	54.6	49.5	4	29.0
Ab1347	54.3	45.0	10	27.0
PA 8950-9	50.6	48.3	5	37.0
PA 8649-95	48.2	48.3	5	34.3
Callao	47.8	49.0	1	24.0
Price	47.4	45.6	5	25.7
MD931042-61	45.9	49.3	3	25.7
Pennbar 66	42.9	46.7	5	33.7
MD931043-25	42.2	49.2	2	25.0
MD931046-83	37.2	42.4	4	30.7
Barsoy	36.4	47.6	3	31.0
MD931042-98	34.5	44.4	5	22.7
MD931048-38	34.3	45.6	4	29.7
MD931046-93	34.2	47.3	3	29.0
MD931046-38	33.6	48.5	4	30.3
Nomini	33.3	41.3	1	36.3
MD931001-90	32.9	41.0	4	30.0
Catchpenny	30.4	41.9	4	28.3
Doyce	27.5	54.9	6	26.0
MD931043-46	27.5	43.3	3	26.3
Location Means	40.3	46.6	4	29.1
State-wide Means	47.5	44.4	6	33.3
LSD (0.05)	8.6	3.1	5	3.7
CV (%)	12.8	4.0	2.4	7.7

**Table 15.** 2003 Maryland State Barley Variety Performance Trials at the Clarksville Facility - Clarksville, MD.

<b>Barley Entry</b>	<b>Yield (bu/A)</b>	<b>Test Weight (lbs/bu)</b>	<b>Heading Date (May)</b>	<b>Height (in)</b>	<b>Lodging (0-9)</b>
Thoroughbred	81.3	45.7	9	37.3	4.0
Barsoy	60.4	46.7	3	40.7	4.0
Price	60.0	43.6	7	36.3	3.3
MD931042-98	59.7	42.1	7	35.0	6.3
MD931043-25	59.5	45.2	5	37.0	7.7
Nomini	58.3	40.9	5	42.3	5.3
Pennbar 66	55.9	43.1	10	41.0	4.0
Callao	54.6	45.9	4	34.3	6.3
MD931043-46	53.8	41.7	4	38.7	6.0
MD931042-61	52.1	45.4	6	34.7	7.3
PA 8649-95	50.7	43.6	9	40.0	6.3
MD931046-93	50.7	42.6	5	40.3	5.3
MD931048-38	49.1	42.8	5	39.3	3.7
PA 8950-9	47.0	43.7	8	43.0	7.7
Ab1347	45.6	42.2	14	35.0	6.7
Doyce	43.5	51.7	8	37.3	4.7
MD931046-38	41.4	44.5	5	39.0	8.0
Catchpenny	40.7	40.4	5	39.7	7.3
MD931046-83	39.4	42.0	5	39.7	6.7
MD931001-90	36.9	38.2	4	39.0	8.0
Location Means	51.0	42.5	6	38	6.6
State-wide Means	47.5	44.4	6	33.3	6.3
LSD (0.05)	13.9	0.5	1 days	4	2.1
CV (%)	16.3	5.9	14.8	2.2	19.0

**Table 16.** 2003 Maryland State Barley Variety Performance Trials at the Keedysville Facility - Keedysville, MD.

<b>Barley Entry</b>	<b>Yield (bu/A)</b>	<b>Test Weight (lbs/bu)</b>	<b>Heading Date (May)</b>	<b>Height (inches)</b>	<b>Lodging (0-9)</b>
Thoroughbred	81.3	45.7	9	37.3	4.0
Barsoy	60.4	46.7	3	40.7	4.0
Price	60.0	43.6	7	36.3	3.3
MD931042-98	59.7	42.1	7	35.0	6.3
MD931043-25	59.5	45.2	5	37.0	7.7
Nomini	58.3	40.9	5	42.3	5.3
Pennbar 66	55.9	43.1	10	41.0	4.0
Callao	54.6	45.9	4	34.3	6.3
MD931043-46	53.8	41.7	4	38.7	6.0
MD931042-61	52.1	45.4	6	34.7	7.3
MD931046-93	50.7	42.6	5	40.3	5.3
PA 8649-95	50.7	43.6	9	40.0	6.3
MD931046-38	49.1	42.8	5	39.3	3.7
PA 8950-9	47.0	43.7	8	43.0	7.7
Ab1347	45.6	42.2	14	35.0	6.7
Doyce	43.5	51.7	8	37.3	4.7
MD931048-38	41.4	44.5	5	39.0	8.0
Catchpenny	40.7	40.4	5	39.7	7.3
MD931046-83	39.4	42.0	5	39.7	6.7
MD931001-90	36.9	38.2	4	39.0	8.0
<b>Location Means</b>	<b>52.0</b>	<b>43.6</b>	<b>6</b>	<b>38.5</b>	<b>5.9</b>
<b>State-wide Means</b>	<b>47.5</b>	<b>44.4</b>	<b>6</b>	<b>33.3</b>	<b>6.3</b>
<b>LSD (0.05)</b>	<b>12.5</b>	<b>3.5</b>	<b>1 day</b>	<b>2</b>	<b>2.8</b>
<b>CV (%)</b>	<b>14.5</b>	<b>4.9</b>	<b>11.8</b>	<b>3.2</b>	<b>28.7</b>