
Agronomy Facts No. 19

(Revised July, 2006)

2006 MARYLAND WHEAT & BARLEY VARIETY PERFORMANCE TRIALS

<http://www.mdcrops.umd.edu>

Wheat and barley cultivar trials were conducted by the Maryland Agricultural Experiment Station and the Department of Plant Science and Landscape Architecture across Maryland in the 2005/2006 season at the following five locations : (1) Allen, in Wicomico County (2) Lower Eastern Shore Research and Education Center's (REC) Poplar Hill Facility near Quantico in Wicomico County; (3) Wye REC at Queenstown in Queen Anne'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-eight wheat entries and eighteen barley entries made up the 2006 tests. Two hull-less barley entries (Doyce, and VA01H68) were 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, and plant height. 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 were planted (both for conventional tillage and no-till) 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 based on 90% germination. For no-till studies, a rate of 22 seeds per foot of row was used (approximately 1.7 million plants per acre 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 fairly favorable at all locations in the fall of 2005 after an early dry spell followed by heavy rains. December was colder than normal, followed by a much warmer than average January. Spring green-up was not later than usual and was followed with a warm and dry April and relatively cool May. This dry spring reduced grain yield potential of both barley and wheat at some locations. Barley headed at the average date but wheat headed earlier than the average date. Powdery mildew was again uncharacteristically absent during the spring of 2006 at most locations except for Poplar Hill. Very little or no scab damage was observed across the state. Barley Yellow Dwarf Virus was observed at relatively high levels on the Eastern shore. Leaf rust and some stripe rust were observed towards the end of the growing season at Poplar Hill and Queenstown. Grain yield and test weight of barley entries were high at most locations favored by the cool spring and perfect weather for barley harvest. Wheat harvest was delayed at some locations because of untimely heavy rains at maturity. These moist conditions caused pre-harvest sprouting especially at Queenstown and Clarksville significantly reducing test weights.

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 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, an 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 2005 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.

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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 Plant Science and Landscape Architecture
Plant Sciences Bldg. Room 2102
University of Maryland
College Park, MD 20742-4452

Table 1. 2005/2006 Wheat and Barley Variety Test Plot Information.

Table 1. 2005/2006 Wheat and Barley Variety Test Plot Information.**1. Allen.****Wicomico County- Allen, MD.**

Planting dates: 10/24/05 (wheat and barley). Harvest date: 6/9/05 (barley); 6/16/05 (wheat)

Soil Type: Matapeake fine sandy loam. pH=6.3. Previous crop: soybeans. No-till used.

Fertilizer: Fall: 380# 9-13-24-7S on 10/20/05. Spring at greenup: 207# 21-0-0-24S as Ammonium Sulfate on 2/20/06.

Spring at GS 6: 58 lbs N as 30-0-0 on 4/10/06

Herbicide: Harmony Xtra 0.6oz on 4/10/06.

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

Planting dates: 10/24/05 (wheat and barley). Harvest date: 6/9/06 (barley); 6/16/06 (wheat conventional and wheat no-till)

Soil Type: Matapex silt loam. pH=6.1; Previous crop: corn.

Fertilizer: Fall: 30# N, 20# P, 60# K, 24# S. Spring at greenup: 40# N as 30% UAN. Spring at GS 6: 60# N as 30% UAN.

Herbicide on 3/6/06: Harmony Xtra 0.5 oz

Insecticide at heading: Warrior 3.5 oz

Farm Staff: Ron Mulford, Fred Senkbeil, Mike Senkbeil, and Justin Fontaine.

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

Planting date: 10/20/05 (conventional wheat and barley), 11/2/05 (no-till, sprayed with Gramoxone on 11/3/05). Harvest date: 6/15/06 (barley); 7/5/05 (wheat conventional); 7/10/06 (Wheat no-till).

Soil Type: Matapeake silt loam. pH = 6.3 (conventional), pH= 6.2 (no-till), Previous crop: corn (conventional), soybeans (no-till).

Fertilizer: Fall: 200# 16-8-8 (conventional) on 10/17/05. Spring:78#N (conventional, no-till), 62# N (conventional barley) all as ammonium nitrate on 3/20/06.

Herbicide: Harmony Xtra 0.5oz + NIS on 4/7/06.

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

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

Farm Staff: Kevin Conover, Donny Murphy, and Patrick Murphy.

Foundation seed increase of Chesapeake.

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

Planting dates: 10/19/05 (wheat and barley). Harvest dates: 6/16/06 (barley); 7/3/06 (wheat)

Soil type: Chester Gravelly. pH= 6.4. Previous crop: corn. Conventional tillage.

Fertilizer: Fall: 150# 7-18-36. Spring: 60# N as 30-0-0 UAN

Herbicide: Harmony Xtra 0.6 oz/A

Farm Staff: Dave Justice, and Tim Ridgley Sr.

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

Planting dates: 10/18/06 (wheat and barley). Harvest dates: 6/16/06 (barley). 7/3/06 (wheat).

Soil Type: Hagerstown silt loam. Previous crop: corn. Conventional tillage.

Fertilizer: Fall: none. Spring: wheat and barley = 100# 38.65-0-0-7S.

Herbicide: Harmony Xtra XP 0.5oz.

Farm Staff: Tim Ellis, Douglas Price and Dave Wyand.

Table 2. Sources of Winter Wheat, Triticale, and Barley Entries Tested in Maryland, 2005/2006 season.

Supplier/Address/Local Rep.	Brand	Varieties and Seed Treatments*
AgriPro Coker Wheat; Box 411, 520 E. 1050 S., Brookston, IN 47923; Barton Fogleman (877)943-2827	AgriPro	Benton, Cooper, Branson, AP 742 (treated with D)
JGL Inc. 3540 S. US 231 Greencastle, IN 46135; Bryan Gerard (765) 653-5402	JGL	Exp. 604 (treated with DXT)
Pioneer Hi-Bred Intl., Inc.; P.O. Box 280, Mount Joy, PA 17552; Joe Mayer (717) 653-5605	Pioneer	26R31, 26R15 (treated with D)
Syngenta Seeds, Inc.; P.O. Box 1240, Winterville, NC 28590; Jim Popham (302) 378-8148	NK	Coker 9184, Coker 9511(B980582), Coker 9553 (AP742), B990133 (treated with D)
Southern States Coop.; P.O. Box 26234, Richmond, VA 23260; Jerry Hevner (302) 629-7991	SS	520, 550, 560, MPV-57, SS 8302, SS 8309, SS8404 (Exp 240438) (treated with RT)
Royster-Clark AgriBusiness, Inc.; 717 Robinson RD SE, Washington Court House, OH 43160; Pat Arthur (757) 787-2882	Vigoro	Tribute , V9412, V9510, WX2502 (treated with DXT), Dominion (VA00W-526), treated with RT
Renwood Farms, Inc. 17303 Sandy Point Rd., Charles City, VA 23020, David Hula (804)829-6345	Renwood	3260 (RXT)
Growmark FS; 308 NE Front St., Milford, DE 19963; Matt Ivory 302-424-2832	FS	300, 621, 652, 8302, FSX627 (treated with RT) 927 barley (RT)
UniSouth Genetics, Inc.; 2640-C Nolensville RD, Nashville, TN 37211; Kevin Anderson (410) 651-2706	USG	3137, 3209, 3342, 3592, 3665, 3706, 3910, 8412 (treated with GXT)
Ohio Agric. Exp. Stn.	-----	Becker (RT)
University of Georgia, GA Station, 1109 Experiment St., Griffin, GA 30223; Jerry Johnson (770) 228-7321	-----	GA 951079-2E31, GA951216E26, GA96229-3A41 (treated with RT)
Maryland Agric. Exp. Stn.	-----	Chesapeake and Choptank (RT) Catchpenny barley (RT), MD barley breeding Lines (RT)
VPI & SU/VCIA/EVAREC; 2229 Menokin RD, Warsaw, VA 22572; Jason Kenner (804) 333-3485	-----	Roane, Sisson, McCormick, VA Breeding Lines (treated with RT) Nomini, Callao, Doyce, Price, Thoroughbred barley and VA barley breeding lines (treated with RT)

*Seed treatment codes in parentheses after each entry are as follows: **RT** = Raxil/Thiram; **GXT** = Gaucho Extreme; **D** = Dividend; **DXT** = Dividend Extreme; **R** = Raxil, **RXT**= Raxil Extra.

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

<http://www.mdcrops.umd.edu>

Table 3. 2006 Maryland State Wheat Variety Performance Trials Averaged Over 7 environments: Allen (no-till), Quantico (conventional and no-till), Queenstown (conventional and no-till), Clarksville, and Keedysville, MD.

Wheat Entry	Yield (bu/A)	Test Weight (lbs/bu)	Heading Date (May)	Height (in)	BYDV (0-9)	P. Mildew (0-9)	Beards
USG 3209	88	56.8	4	32	2	0.8	None
V9510	88	56.9	3	34	3	1.3	Long
USG 3665	87	56.9	4	35	2	1.3	None
Chesapeake (MV5-46)	87	58.1	3	33	3	0.0	None
SS 8309	86	57.6	5	36	3	1.4	None
SS 550	86	57.1	4	32	3	0.1	None
JGL Exp. 604	86	56.3	4	37	3	3.5	None
USG 3592	86	57.5	5	37	2	1.2	None
SS MPV 57	85	56.5	6	35	3	1.3	None
Agripro Branson	85	56.2	2	33	3	0.4	None
SS 8302	85	57.6	5	35	3	1.7	Long
Agripro Benton	85	56.1	6	34	4	1.0	None
FS 8302	84	57.6	5	35	3	1.3	Long
WX2502 (exp)	84	57.3	5	32	3	0.8	Long
GA-951395-3E25	84	57.7	3	31	3	1.3	None
SS 560	84	56.2	5	32	3	0.8	None
26R15	83	56.5	5	35	3	0.7	Long
Tribute	83	59.9	3	33	3	0.0	None
FS 652	83	56.3	5	32	3	0.4	None
Roane	83	58.8	6	33	1	2.1	None
SS 8404 (exp. 240438)	83	59.2	5	31	2	1.3	Long
Dominion (VA00W-526)	83	57.7	6	32	3	0.0	None
FS X 627	83	56.7	4	34	3	0.9	Long
Sisson	83	57.0	1	31	3	0.3	None
GA-96229-3A41	82	57.0	5	35	3	0.0	None
Agripro Cooper	82	57.4	5	33	3	2.5	None
SS 520	81	56.3	1	35	4	0.0	None
IMI 95047-6-3-18	81	56.6	5	36	3	0.9	None
FS 621	81	56.1	1	35	4	0.0	None
Coker 9184	81	59.1	6	33	3	1.3	None
McCormick	81	59.6	4	31	2	0.0	None
IMI 95053-1A-11-6	81	56.8	5	37	2	0.2	None
26R31	80	56.9	4	31	3	0.0	None
USG 3342	79	56.4	2	30	4	0.0	Long
Coker 9553 (AP 742)	79	58.5	2	35	4	0.7	Long
Choptank	79	57.5	2	29	3	0.0	None
USG 3706	79	58.0	3	31	3	0.5	None
USG 3910	79	58.0	2	34	3	0.3	None
USG 3412	79	58.6	5	34	3	3.3	Long
FS 300	78	57.7	3	35	3	0.3	None
Renwood 3260	78	57.9	2	34	2	0.0	None
Coker 9511 (B980582)	77	58.9	2	36	3	0.7	None
V9412	76	57.6	2	33	3	0.3	None
GA-951216-2E26	76	57.7	3	38	3	4.5	None
B990133	75	58.3	2	33	4	0.1	None
USG 3137	75	56.4	3	38	4	2.1	None
GA-951079-2E31	75	58.5	April 30	33	3	1.1	None
Becker	71	54.6	7	34	4	5.0	None
State-wide Means	82	57.5	4	34	3	1.0	
LSD (0.05)	13	1.7	2	2	1	0.9	
CY (%)	9.7	1.9	0.9	4.5	38.2	80.7	

Table 4. Relative Yield of Wheat Entries Compared to the Mean Yield of All Entries at Each Location and Throughout the State in 2006.

Wheat Entry	State	Allen NT	Quantico NT	Quantico CT	Wye CT	Wye NT	Clarksville CT	Keedysville CT
-----Relative Yield (%)-----								
USG 3209	107*	108*	116*	109*	99	105*	105*	111*
V9510	107*	116*	105*	107*	104	106*	114*	103*
USG 3665	107*	106*	99	118*	111*	117*	94	109*
Chesapeake (MV5-46)	106*	111*	108*	102	99	107*	109*	109*
SS 8309	105*	114*	112*	92	120*	113*	95	104*
SS 550	105*	114*	105*	109*	100	104*	109*	100*
JGL Exp. 604	105*	106*	105*	109*	108*	110*	99*	106*
USG 3592	105*	105*	109*	97	108*	100	105*	113*
SS MPV 57	104*	101*	101	103	99	103*	109*	110*
Agripro Branson	104*	95	107*	105	105	98	109*	105*
SS 8302	103*	105*	100	102	111*	103*	106*	102*
Agripro Benton	103*	105*	96	104	109*	106*	101*	108*
FS 8302	102*	104*	102	107*	110*	103*	97	100*
WX2502 (exp)	102*	92	104	106	107	107*	99*	105*
GA-951395-3E25	102*	101*	103	105	119*	101	89	103*
SS 560	102*	106*	99	105	92	95	97	118*
26R15	102*	103*	106*	100	109*	92	102*	103*
Tribute	102*	108*	97	105	107	96	103*	100*
FS 652	102*	96	101	106	93	96	101*	116*
Roane	101*	112*	106*	99	98	93	104*	101*
SS 8404 (exp. 240438)	101*	96	104	103	107	109*	102*	95
Dominion (VA00W-526)	101*	105*	100	106	86	99	108*	104*
FS X 627	101*	95	101	103	99	91	112*	104*
Sisson	101*	111*	108*	99	91	96	107*	96
GA-96229-3A41	100*	93	105*	104	92	104*	104*	101*
Agripro Cooper	100*	99*	102	99	105	110*	98	92
SS 520	99*	89	110*	106	93	88	102*	101*
IMI 95047-6-3-18	99*	105*	107*	95	92	94	99*	102*
FS 621	99*	86	105*	110*	94	85	99*	106*
Coker 9184	99*	99*	97	102	108*	100	99*	91
McCormick	98*	101*	100	102	102	97	98	93
IMI 95053-1A-11-6	98*	94	100	101	101	106*	98	95
26R31	97*	96	100	103	91	98	99*	97
USG 3342	97*	98*	96	99	93	90	109*	93
Coker 9553 (AP 742)	97*	88	92	97	105	106*	100*	95
Choptank	97*	95	97	99	92	105*	98	96
USG 3706	97*	86	97	95	94	100	100*	105*
USG 3910	96*	92	92	97	107	102	102*	89
USG 3412	96*	100*	95	92	99	109*	89	100*
FS 300	96*	107*	99	89	91	91	93	103*
Renwood 3260	95*	91	86	101	104	98	99*	87
Coker 9511 (B980582)	94*	94	90	96	94	93	87	101*
V9412	93*	91	98	97	96	96	93	84
GA-951216-2E26	93*	98*	98	84	85	88	94	102*
B990133	92	87	87	94	96	93	92	95
USG 3137	91	84	94	96	92	97	89	92
GA-951079-2E31	91	89	96	91	84	91	107*	82
Becker	86	94	89	78	89	93	77	93

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

Table 5. Two-year and Three-year Averages of Grain Yield and Test Weight of Wheat Entries in Maryland, 2004-2006.

Entry	Two-year average		Three-year average	
	Yield (bu/A)	Test Weight (lbs/bu)	Yield (bu/A)	Test Weight (lbs/bu)
FS 652	86	56.3	81	56.2
USG 3209	86	57.2	84	57.1
26R15	83	57.0	-	-
SS MPV 57	83	56.6	82	56.6
SS 560	83	56.3	81	56.3
Dominion (VA00W-526)	82	58.2	-	-
FS 8302	82	58.2	81	57.9
V9510	82	57.7	-	-
Agripro Cooper	81	57.5	79	58.0
FS 621	81	56.5	80	56.6
Roane	81	58.9	78	58.7
Chesapeake (MV5-46)	81	58.6	79	58.6
SS 8404 (exp. 240438)	81	59.4	-	-
SS 550	81	57.2	78	57.3
FS 300	80	58.1	-	-
SS 8302	80	58.1	-	-
USG 3412 (exp. 820)	80	58.6	-	-
Coker 9553 (AP 742)	79	59.0	-	-
Agripro Benton	79	56.5	76	56.4
Tribute	79	59.8	78	59.5
Sisson	79	57.5	77	57.6
SS 520	78	56.9	77	56.7
Coker 9184	78	59.2	75	59.1
USG 3706	78	59.0	77	58.5
McCormick	78	59.8	77	59.4
SS 8309	77	57.2	75	57.1
V9412	77	58.0	-	-
USG 3137	77	57.1	78	57.1
USG 3342	76	57.5	75	57.3
Coker 9511 (B980582)	76	59.2	-	-
GA-951079-2E31	76	59.1	-	-
Choptank	75	58.1	74	58.0
GA-951216-2E26	73	58.4	-	-

Table 6. 2006 Maryland State Wheat Variety Performance Trials No-Till at Allen, MD.

Wheat Entry	Yield (bu/A)	Test Weight (lbs/bu)	Heading Date (May)	Height (in)	P. Mildew (0-9)	BYDV (0-9)
V9510	79	60.3	1	32	0	3
SS 8309	78	59.9	3	35	1	4
SS 550	77	60.0	April 30	31	0	3
Roane	76	61.5	4	32	1	1
Chesapeake (MV5-46)	75	60.1	April 30	29	0	2
Sisson	75	59.6	April 27	31	0	3
USG 3209	74	59.7	1	29	0	1
Tribute	74	61.7	April 29	32	0	4
FS 300	73	60.5	April 29	33	0	4
JGL Exp. 604	72	59.1	2	35	2	4
USG 3665	72	60.2	2	32	0	2
SS 560	72	57.8	2	30	0	2
USG 3592	72	60.3	2	33	0	2
Dominion (VA00W-526)	72	60.6	3	30	0	3
Agripro Benton	72	59.5	5	33	1	3
SS 8302	71	60.1	3	33	0	4
IMI 95047-6-3-18	71	59.3	2	32	0	3
FS 8302	71	60.8	3	34	0	2
26R15	70	58.4	3	32	0	3
SS MPV 57	69	58.6	4	32	1	3
McCormick	69	62.6	2	30	0	1
GA-951395-3E25	69	60.6	April 30	28	0	2
USG 3412	68	61.2	2	32	3	4
Coker 9184	68	61.0	2	30	0	3
Agripro Cooper	67	60.9	3	32	1	2
GA-951216-2E26	67	60.6	April 30	33	4	3
USG 3342	66	60.2	April 28	26	0	3
SS 8404 (exp. 240438)	66	61.2	1	28	0	3
26R31	65	59.2	April 30	29	0	4
FS 652	65	58.6	3	29	0	3
Agripro Branson	65	58.3	April 29	31	0	4
FS X 627	65	60.9	1	31	0	3
Choptank	65	60.6	April 29	26	0	4
Coker 9511 (B980582)	64	61.6	April 28	34	0	3
Becker	64	58.4	5	33	5	3
IMI 95053-1A-11-6	64	59.3	3	34	0	2
GA-96229-3A41	63	60.3	2	32	0	4
WX2502 (exp)	63	61.0	2	28	0	5
USG 3910	63	60.6	April 29	31	0	3
V9412	62	59.7	April 28	29	0	4
Renwood 3260	62	61.2	April 27	31	0	2
GA-951079-2E31	61	61.5	April 27	31	0	2
SS 520	60	58.9	April 28	32	0	4
Coker 9553 (AP 742)	60	61.7	April 28	30	0	2
B990133	59	60.5	April 29	30	0	5
FS 621	59	58.6	April 28	32	0	5
USG 3706	59	60.7	1	28	0	2
USG 3137	57	59.0	April 30	35	1	6
Location Means	68	60.1	1	31	0.4	3.0
State-wide Means	82	57.5	4	34	1.0	3
LSD (0.05)	12	1	2	2	0.8	2.4
CV (%)	11.0	1.0	0.8	4.7	117.0	49.1

Table 7. 2006 Maryland State Wheat Variety Performance Trials No-Till at the Poplar Hill Facility- Quantico, MD.

Wheat Entry	Yield (bu/A)	Test Weight (lbs/bu)	Heading Date (April)	Height (in)
USG 3209	90	59.0	29	31
SS 8309	88	59.4	May 3	36
SS 520	86	57.5	25	35
USG 3592	85	59.6	May 1	37
Sisson	84	58.8	27	32
Chesapeake (MV5-46)	84	59.3	28	33
Agripro Branson	84	57.4	28	34
IMI 95047-6-3-18	83	58.1	30	36
26R15	83	58.3	May 2	34
Roane	83	60.9	May 3	33
SS 550	82	58.6	29	32
V9510	82	58.8	28	34
GA-96229-3A41	82	59.1	30	35
JGL Exp. 604	82	58.0	30	37
FS 621	82	56.9	26	34
WX2502 (exp)	81	59.3	May 1	32
SS 8404 (exp. 240438)	81	60.9	30	30
GA-951395-3E25	80	59.6	29	30
Agripro Cooper	80	59.3	May 2	34
FS 8302	80	58.8	May 1	35
SS MPV 57	79	57.7	May 1	35
FS 652	79	58.1	May 1	32
FS X 627	79	58.6	29	33
McCormick	78	61.7	30	31
Dominion (VA00W-526)	78	58.9	May 1	31
26R31	78	58.4	28	30
SS 8302	78	58.9	May 3	34
IMI 95053-1A-11-6	78	57.7	May 2	37
USG 3665	77	58.6	29	36
SS 560	77	58.1	30	32
FS 300	77	59.4	28	33
GA-951216-2E26	76	59.7	28	35
V9412	76	59.6	28	34
Tribute	76	61.5	29	33
USG 3706	76	59.1	28	30
Coker 9184	76	60.4	May 2	33
Choptank	75	59.5	28	29
USG 3342	75	59.1	27	30
GA-951079-2E31	75	60.7	25	33
Agripro Benton	75	58.5	May 3	34
USG 3412	74	60.0	May 2	35
USG 3137	74	59.0	29	38
Coker 9553 (AP 742)	72	60.3	27	34
USG 3910	71	58.8	28	34
Coker 9511 (B980582)	70	60.7	28	35
Becker	69	56.4	May 3	35
B990133	68	60.4	28	31
Renwood 3260	67	60.3	28	33
Location Means	78	59.1	29	33
State-wide Means	82	57.5	May 4	34
LSD (0.05)	8	1	1	2
CV (%)	6.0	1.0	0.7	3.5

Table 8. 2006 Maryland State Wheat Variety Performance Trials Conventional Till at Quantico, MD.

Wheat Entry	Yield (bu/A)	Test Weight (lbs/bu)	Heading Date (April)	Height (in)	P. Mildew (0-9)	BYDV (0-9)
USG 3665	104	56.4	28	37	3	2
FS 621	97	55.7	25	35	0	3
USG 3209	96	56.0	27	33	2	2
SS 550	96	56.7	28	32	0	3
JGL Exp. 604	96	54.8	28	37	5	3
V9510	94	59.0	28	34	3	2
FS 8302	94	56.8	28	35	2	3
Dominion (VA00W-526)	93	57.9	29	32	0	2
SS 520	93	57.0	25	36	0	3
WX2502 (exp)	93	57.9	30	32	2	2
FS 652	93	53.7	29	32	1	3
GA-951395-3E25	93	58.8	27	33	2	3
Agripro Branson	92	55.9	27	33	1	3
Tribute	92	60.8	27	34	0	2
SS 560	92	53.7	29	34	1	2
GA-96229-3A41	91	56.1	28	36	0	3
Agripro Benton	91	55.7	May 2	35	1	4
SS MPV 57	91	56.1	29	35	2	2
26R31	91	58.1	28	32	0	2
FS X 627	90	58.1	28	35	2	3
SS 8404 (exp. 240438)	90	60.4	30	32	3	1
SS 8302	90	57.2	May 1	35	3	3
Coker 9184	90	59.8	May 1	34	2	2
McCormick	90	60.6	27	32	0	2
Chesapeake (MV5-46)	89	58.5	27	33	0	3
Renwood 3260	89	53.1	26	35	0	1
IMI 95053-1A-11-6	89	56.6	28	35	0	3
26R15	88	58.2	30	36	1	3
Sisson	88	56.2	26	31	1	3
USG 3342	87	55.6	26	31	0	5
Agripro Cooper	87	57.7	29	35	4	3
Choptank	87	58.6	27	29	0	3
Roane	87	59.6	May 1	32	3	2
Coker 9553 (AP 742)	86	59.6	26	34	1	2
USG 3910	86	58.2	27	33	1	2
USG 3592	85	57.8	28	39	2	2
V9412	85	56.5	27	34	1	2
Coker 9511 (B980582)	84	59.4	26	35	1	2
USG 3137	84	53.8	28	37	3	2
USG 3706	83	59.3	27	32	1	3
IMI 95047-6-3-18	83	55.8	28	36	2	3
B990133	83	58.9	27	33	0	2
USG 3412	81	58.1	30	34	4	2
SS 8309	81	59.4	30	36	2	2
GA-951079-2E31	80	59.2	24	33	2	2
FS 300	78	56.6	27	34	1	3
GA-951216-2E26	74	56.4	27	35	5	3
Becker	69	51.9	May 2	34	5	5
Location Means	88	57.2	28	34	2	3
State-wide Means	82	57.5	May 4	34	1.0	3
LSD (0.05)	10	3	1	2	1	1
CV (%)	6.6	3.0	0.8	3.0	53.4	25.6

Table 9. 2006 Maryland State Wheat Variety Performance Trials Conventional-till at the Wye Queenstown, MD.

Wheat Entry	Yield (bu/A)	Test Weight (lbs/bu)	Heading Date (May)	Height (in)
SS 8309	84	54.6	4	36
GA-951395-3E25	83	54.9	2	32
USG 3665	78	54.8	4	34
SS 8302	77	54.8	4	35
FS 8302	77	55.1	4	36
Agripro Benton	77	53.1	5	33
26R15	76	54.2	3	37
JGL Exp. 604	76	55.2	3	36
Coker 9184	75	56.5	5	33
USG 3592	75	55.4	4	38
Tribute	75	57.7	3	34
SS 8404 (exp. 240438)	75	56.2	4	30
USG 3910	75	55.8	2	32
WX2502 (exp)	75	53.9	3	31
Agripro Cooper	74	54.9	4	34
Agripro Branson	73	54.5	2	33
Coker 9553 (AP 742)	73	56.2	2	36
Renwood 3260	73	57.2	3	35
V9510	73	53.7	2	35
McCormick	71	56.6	3	31
IMI 95053-1A-11-6	71	54.8	4	37
SS 550	70	54.6	3	32
SS MPV 57	70	53.9	5	34
USG 3209	69	54.1	3	31
FS X 627	69	53.5	3	34
USG 3412	69	56.3	4	34
Chesapeake (MV5-46)	69	55.9	2	32
Roane	69	56.5	4	32
V9412	67	55.8	3	32
B990133	67	56.5	2	34
Coker 9511 (B980582)	66	56.1	1	35
USG 3706	66	55.9	3	30
FS 621	66	54.8	1	34
SS 520	65	54.4	1	35
FS 652	65	54.6	4	33
USG 3342	65	53.8	2	30
IMI 95047-6-3-18	65	54.6	4	34
GA-96229-3A41	65	55.0	4	33
SS 560	65	54.6	4	31
Choptank	64	54.9	2	29
USG 3137	64	55.0	3	37
Sisson	64	54.9	April 30	31
FS 300	64	55.7	3	35
26R31	64	54.8	4	30
Becker	62	53.3	5	33
Dominion (VA00W-526)	60	55.2	5	31
GA-951216-2E26	60	55.8	3	35
GA-951079-2E31	59	56.0	April 30	34
Location Means	69.8	55.1	3	33
State-wide Means	82	57.5	4	34
LSD (0.05)	8	0.7	1	2
CV (%)	7.5	0.8	0.6	3.6

Table 10. 2006 Maryland State Wheat Variety Performance Trials No-Till at the Wye Facility- Queenstown, MD.

Wheat Entry	Yield (bu/A)	Test Weight (lbs/bu)	Heading Date (May)	Height (in)
USG 3665	96	55.7	5	33
SS 8309	93	55.6	6	35
JGL Exp. 604	90	55.9	5	36
Agripro Cooper	90	55.9	6	33
SS 8404 (exp. 240438)	90	57.3	5	31
USG 3412	89	57.9	6	34
Chesapeake (MV5-46)	88	57.5	3	32
WX2502 (exp)	88	54.7	4	32
Coker 9553 (AP 742)	87	56.6	2	33
Agripro Benton	87	54.4	7	33
V9510	87	54.7	4	32
IMI 95053-1A-11-6	87	56.3	5	36
Choptank	86	56.4	3	29
USG 3209	86	56.2	4	30
SS 550	86	56.3	4	32
GA-96229-3A41	85	56.4	6	35
SS MPV 57	85	55.3	7	34
FS 8302	84	56.1	5	34
SS 8302	84	55.9	6	34
USG 3910	84	57.4	3	31
GA-951395-3E25	83	55.4	6	30
USG 3706	82	57.4	2	31
Coker 9184	82	57.9	6	32
USG 3592	82	56.3	4	34
Dominion (VA00W-526)	81	56.1	6	31
Renwood 3260	81	58.1	3	33
Agripro Branson	81	55.1	5	31
26R31	80	56.1	5	31
USG 3137	79	56.3	4	35
McCormick	79	57.2	4	29
Sisson	79	56.5	1	30
FS 652	79	56.0	6	33
V9412	78	57.1	3	31
Tribute	78	58.6	5	30
SS 560	78	56.1	6	31
IMI 95047-6-3-18	77	55.7	6	34
Becker	76	54.1	8	29
B990133	76	57.0	3	31
Coker 9511 (B980582)	76	57.6	3	32
Roane	76	56.9	7	30
26R15	75	54.2	6	33
FS X 627	75	54.4	5	32
GA-951079-2E31	75	56.5	2	31
FS 300	74	57.2	2	31
USG 3342	73	54.7	3	28
SS 520	72	56.1	1	34
GA-951216-2E26	72	56.1	5	32
FS 621	70	55.3	2	34
Location Means	82	56.2	4	32
State-wide Means	82	57.5	4	34
LSD (0.05)	11	0.7	2	3
CV (%)	6.7	0.6	0.8	4.8

Table 11. 2006 Maryland State Wheat Variety Performance Trials (conventional till) at the Clarksville Facility- Clarksville, MD.

Wheat Entry	Yield (bu/A)	Test Weight (lbs/bu)	Heading Date (May)	Height (in)
V9510	107	53.7	11	35
FS X 627	105	53.0	11	35
USG 3342	103	54.5	10	32
SS MPV 57	103	55.7	14	37
Chesapeake (MV5-46)	102	56.9	10	35
SS 550	102	55.7	11	33
Agripro Branson	102	55.1	9	34
Dominion (VA00W-526)	102	56.2	14	33
GA-951079-2E31	101	56.4	8	35
Sisson	100	55.8	9	32
SS 8302	100	57.5	12	36
USG 3209	99	55.5	12	32
USG 3592	99	55.8	11	37
GA-96229-3A41	98	54.4	12	34
Roane	97	57.5	12	34
Tribute	97	58.8	11	33
SS 8404 (exp. 240438)	96	58.4	13	32
SS 520	96	53.1	10	37
USG 3910	96	56.6	10	37
26R15	95	54.5	11	37
Agripro Benton	95	54.5	12	35
FS 652	95	55.5	13	33
USG 3706	94	55.4	11	32
Coker 9553 (AP 742)	94	56.4	9	38
JGL Exp. 604	94	54.5	10	38
26R31	94	54.0	11	33
WX2502 (exp)	93	55.4	12	35
FS 621	93	53.5	9	36
Renwood 3260	93	57.3	10	37
Coker 9184	93	58.7	13	34
IMI 95047-6-3-18	93	55.0	12	38
McCormick	92	58.5	10	31
Choptank	92	54.9	10	30
Agripro Cooper	92	54.5	10	33
IMI 95053-1A-11-6	92	55.0	12	39
SS 560	91	55.8	13	32
FS 8302	91	57.1	12	34
SS 8309	89	55.6	11	37
GA-951216-2E26	88	56.4	10	36
USG 3665	88	55.0	11	36
V9412	87	56.5	9	37
FS 300	87	56.3	10	36
B990133	86	56.7	9	34
USG 3137	84	54.7	10	39
USG 3412	84	57.2	12	34
GA-951395-3E25	83	55.4	10	31
Coker 9511 (B980582)	82	57.8	10	38
Becker	73	52.9	13	34
Location Means	94	55.7	11	35
State-wide Means	82	57.5	4	34
LSD (0.05)	13	0.8	1	2
CV (%)	8.5	0.9	0.6	3.4

Table 12. 2006 Maryland State Wheat Variety Performance Trials (conventional till) at the Keedysville Facility-Keedysville, MD.

Wheat Entry	Yield (bu/A)	Test Weight (lbs/bu)	Heading Date (May)	Height (in)
SS 560	108	57.9	12	37
FS 652	107	57.6	11	36
USG 3592	104	57.5	12	42
USG 3209	102	57.4	11	37
SS MPV 57	101	58.1	12	39
Chesapeake (MV5-46)	101	59.0	8	37
USG 3665	100	58.0	10	39
Agripro Benton	99	57.0	11	36
JGL Exp. 604	97	56.9	8	41
FS 621	97	57.9	7	39
Agripro Branson	97	56.8	8	37
USG 3706	97	58.6	10	35
WX2502 (exp)	96	58.1	11	37
FS X 627	96	58.0	10	37
SS 8309	96	58.4	11	39
Dominion (VA00W-526)	95	59.0	12	34
GA-951395-3E25	95	58.6	11	35
FS 300	95	58.8	8	40
V9510	95	57.9	8	37
26R15	95	57.4	9	36
GA-951216-2E26	94	58.8	9	39
IMI 95047-6-3-18	94	57.9	12	41
SS 8302	94	58.9	10	40
SS 520	93	57.5	7	39
Coker 9511 (B980582)	93	59.3	8	41
Roane	93	58.2	11	36
GA-96229-3A41	93	57.8	12	37
FS 8302	92	58.4	11	37
Tribute	92	60.3	8	34
USG 3412	92	59.3	11	38
SS 550	92	57.7	11	34
26R31	89	57.5	10	34
Choptank	89	57.4	8	32
Sisson	88	57.6	7	33
SS 8404 (exp. 240438)	88	59.8	12	33
B990133	88	58.1	8	35
Coker 9553 (AP 742)	88	58.5	8	40
IMI 95053-1A-11-6	87	57.9	11	41
McCormick	85	59.2	9	33
Becker	85	55.4	12	38
USG 3342	85	56.9	9	32
USG 3137	85	57.1	8	42
Agripro Cooper	85	58.2	10	34
Coker 9184	84	59.4	11	35
USG 3910	82	58.9	7	37
Renwood 3260	80	58.8	8	37
V9412	77	58.2	6	35
GA-951079-2E31	75	58.7	6	37
Location Means	92	58.1	10	37
State-wide Means	82	57.5	4	34
LSD (0.05)	16	0.9	2	3
CV (%)	10.8	1.0	0.8	4.4

Table 13. 2006 Maryland State Barley Variety Performance Trials Averaged Over Quantico, Queenstown, Clarksville, and Keedysville.

Barley Entry	Yield (bu/A)	Test Weight (lbs/bu)	Heading Date (April)	Height (in)	Lodging (0-10)	Beards
FS 927	117	49	May 2	34	0	Long
Thoroughbred	115	51	May 1	34	0	Long
931046-93	111	49	29	35	0	Long
931046-38	110	49	30	36	0	Short
Nomini	109	47	26	39	1	None
Callao	108	50	25	29	4	Medium
931011-38	107	47	27	40	1	None
931060-15	107	49	30	36	0	Medium
931046-51	106	47	30	38	1	Short
931046-83	105	47	29	37	1	Short
Catchpenny	104	47	28	35	0	None
931046-86	103	48	29	35	0	Short
Price	103	49	30	31	0	Short
931011-62	102	47	27	38	3	None
931043-25	102	49	29	30	3	Short
Doyce*	101	58	29	35	1	Long
VA01H-68*	93	60	26	35	0	Long
931001-48	93	46	26	37	3	None
State-wide Means	105	49	28	35	1	
LSD (0.05)	9	1	1	2	1	
CV (%)	11.2	3.4	1.5	5.4	107.1	

*hull-less entries.

Table 14. Relative Yield of Barley Entries Compared to the Mean Yield of All Entries at Each Location and Throughout the State in 2006.

Barley Entry	State	Quantico	Queenstown	Clarksville	Keedysville
	-----Relative Yield (%)-----				
FS 927	111*	105*	118*	108	116
Thoroughbred	110*	118*	110*	104	104
931046-93	106*	107*	106*	102	109
931046-38	105*	105*	104*	105	106
Nomini	104*	106*	97	101	109
Callao	103*	101	105*	106	96
931011-38	102	108*	97	99	103
931060-15	102	106*	105*	96	97
931046-51	101	109*	106*	100	85
931046-83	100	104	97	106	91
Catchpenny	99	100	98	97	99
931046-86	98	94	108*	101	90
Price	98	103	101	103	82
931011-62	97	93	89	94	113
931043-25	97	94	96	102	94
Doyce*	96	91	95	90	111
VA01H-68*	89	84	87	89	96
931001-48	89	79	78	96	102

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

**hull-less entries. At Clarksville and Keedysville there were no significant differences for grain yield.

Table 15. Two-year and three-year averages of grain yield and test weight of barley entries in Maryland, 2004-2006.

Barley Entry	Two-year average		Three-year average	
	Yield (bu/A)	Test Weight (lbs/bu)	Yield (bu/A)	Test Weight (lbs/bu)
Thoroughbred	113	51	111	50
MD931046-93	108	50	102	49
MD931046-38	107	51	102	50
MD931060-15	105	50	-	-
Price	105	51	98	49
Nomini	102	47	100	47
MD931043-25	101	50	97	49
Callao	100	52	97	51
Catchpenny	100	47	96	47
MD931046-83	99	48	-	-
MD931011-38	98	48	-	-
Doyce*	93	59	88	58

*hull-less entry.

Table 16. 2006 Maryland State Barley Variety Performance Trials at Allen - Allen, MD.

Barley Entry	Yield (bu/A)	Test Weight (lbs/bu)	Heading Date (April)	Height (in)
Thoroughbred	90	54	21	28
Callao	84	52	17	25
MD931046-51	79	43	20	34
MD931046-93	78	48	21	30
MD931046-86	78	45	20	33
Doyce*	74	58	20	28
MD931046-83	68	49	19	34
MD931043-25	68	50	18	26
MD931046-38	67	51	21	31
FS 927	65	49	25	28
MD931060-15	63	50	21	31
VA01H-68*	63	60	19	28
Price	56	53	21	25
MD931001-48	44	48	15	31
MD931011-38**	.	.	19	34
MD931011-62**	.	.	19	32
Catchpenny**	.	.	18	31
Nomini**	.	.	17	35
Location Means	72	51	20	30
State-wide Means	105	49	28	35
LSD (0.05)	27	4	2	3
CV (%)	13.6	4.1	1.0	5.9

*hull-less entries.

**No grain yields were obtained because of severe deer and bird damage.

Table 17. 2006 Maryland State Barley Variety Performance Trials at the Poplar Hill Facility - Quantico, MD.

Barley Entry	Yield (bu/A)	Test Weight (lbs/bu)	Heading Date (April)	Height (in)	Lodging (0-10)
Thoroughbred	146	53	26	37	0.0
MD931046-51	135	48	24	39	0.7
MD931011-38	134	48	20	42	0.7
MD931046-93	133	50	23	37	0.0
MD931060-15	132	49	24	40	0.0
Nomini	131	46	21	39	1.0
FS 927	130	50	27	37	0.3
MD931046-38	130	49	25	39	0.0
MD931046-83	128	49	24	40	0.0
Price	128	50	24	33	0.0
Callao	126	52	19	31	3.3
Catchpenny	124	47	22	39	0.0
MD931043-25	117	50	22	32	2.3
MD931046-86	116	47	22	38	0.0
MD931011-62	115	46	21	38	0.7
Doyce*	113	59	22	36	1.3
VA01H-68*	104	61	19	32	0.3
MD931001-48	98	43	20	37	1.7
Location Means	124	50	22	37	0.7
State-wide Means	105	49	28	35	1
LSD (0.05)	16.7	2.1	2.0	1.8	1.1
CV (%)	8.1	2.6	1.0	2.9	94.6

*hull-less entries.

Table 18. 2006 Maryland State Barley Variety Performance Trials at the Wye Facility - Queenstown, MD.

Barley Entry	Yield (bu/A)	Test Weight (lbs/bu)	Heading Date (April)	Height (in)	Lodging (0-10)
FS 927	113	49	May 4	36	1
Thoroughbred	106	49	30	37	1
MD931046-86	104	48	May 1	36	1
MD931046-51	102	47	May 1	39	1
MD931046-93	102	49	29	35	1
Callao	101	47	26	29	5
MD931060-15	101	48	30	37	1
MD931046-38	100	49	29	36	1
Price	97	48	May 1	30	1
Catchpenny	94	47	29	34	1
Nomini	94	47	27	38	2
MD931046-83	93	48	30	37	1
MD931011-38	93	43	29	40	1
MD931043-25	92	47	29	28	3
Doyce*	92	58	30	36	2
931011-62	85	45	29	38	2
VA01H-68*	84	59	27	35	1
MD931001-48	75	44	29	38	2
Location Means	96.1	48.4	29	35.5	1.3
State-wide Means	105	49	28	35	1
LSD (0.05)	13.9	3.2	3	2.4	1.0
CV (%)	8.7	4.0	1.6	4.0	46.7

*hull-less entries.

Table 19. 2006 Maryland State Barley Variety Performance Trials at the Clarksville Facility - Clarksville, MD.

Barley Entry	Yield (bu/A)	Test Weight (lbs/bu)	Heading Date (April)	Height (in)	Lodging (0-10)
FS 927	116	50	May 4	32	0
Callao	113	51	25	32	6
MD931046-83	113	47	May 1	36	2
MD931046-38	112	49	May 3	35	0
Thoroughbred	111	50	May 2	33	0
Price	110	49	May 2	33	0
MD931043-25	109	49	May 2	30	2
MD931046-93	109	49	May 1	33	0
MD931046-86	108	50	May 2	34	0
Nomini	108	48	28	40	1
MD931046-51	106	47	May 2	37	1
MD931011-38	106	49	29	40	1
Catchpenny	104	48	29	35	1
MD931001-48	102	48	27	38	2
MD931060-15	102	49	May 1	35	0
MD931011-62	100	48	29	40	2
Doyce*	96	58	May 1	35	2
VA01H-68*	95	60	29	36	0
Location Means	106.6	49.7	30	35.2	1.1
State-wide Means	105	49	28	35	1
LSD (0.05)	NS	1.3	2.0	1.8	1.0
CV (%)	6.8	1.6	1.0	3.1	52.6

*hull-less entries.

Table 20. 2006 Maryland State Barley Variety Performance Trials at the Keedysville Facility - Keedysville, MD.

Barley Entry	Yield (bu/A)	Test Weight (lbs/bu)	Heading Date (May)	Height (in)	Lodging (0-10)
FS 927	109	47	4	32	0
931011-62	107	48	April 29	35	8
Doyce*	104	59	3	34	1
Nomini	103	48	April 29	37	1
931046-93	103	48	2	33	0
931046-38	100	49	3	35	0
Thoroughbred	98	50	4	30	0
931011-38	97	49	1	39	1
931001-48	96	48	April 30	33	5
Catchpenny	93	47	3	33	0
931060-15	92	48	3	33	0
Callao	91	51	April 28	26	2
VA01H-68*	90	58	April 30	35	0
931043-25	89	50	2	30	3
931046-83	85	46	2	36	2
931046-86	85	49	2	32	0
931046-51	80	46	3	34	0
Price	77	49	2	27	0
Location Means	94	49	2	33	1
State-wide Means	105	49	28	35	1
LSD (0.05)	NS	2	2	4	2
CV (%)	15.7	2.2	1.0	6.7	106.3

*hull-less entries.