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VIRGINIA STATE

Small Grains In 2010

2010 Virginia Polytechnic Institute and State University 3007-1455

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Recommended Small Grain Varieties

The following are the small grain variety recommendations for Virginia in 2010. The recommendations are based on the agronomic performance in wheat and barley variety tests conducted by the Research and Extension Divisions of Virginia Tech in the various agricultural regions of the state.

Recommended Wheat Varieties Arranged in Order of Maturity

All varieties have been extensively tested and proven to be adapted statewide.

Agronomic Characteristics				
Cultivar	**Grain Yield**	**Test Weight**	**Milling Quality**	**SRW Baking Quality**
Early Heading Varieties (119-120 d, Julian)				
SS 520*	2	1	3	2
USG 3120	3	3	3	1
Jamestown	2	4	2	1
Coker 9553	2	4	2	2
Mid-Season Heading Varieties (121-122 d, Julian)				
USG 3555	4	1	2	2
Branson	4	1	3	3
Chesapeake	3	4	2	1
Merl	4	4	4	3
SS 5205	3	3	4	4
Full-Season Heading Varieties (123-124 d, Julian)				
Pioneer 26R15	4	1	4	3
USG 3315	3	3	2	2
Renwood 3434	3	1	2	2
USG 3665	4	2	4	3
SS 560	3	1	2	2
Pioneer 26R20	4	2	2	2
Shirley	4	1	3	3
SS-MPV 57	3	2	3	3
* This line is not daylength sensitive and should not be planted early in order to avoid potential freeze damage.				
4 - Significantly higher than average				
3 - Average or higher than average				
2 - Average or lower than average				
1 - Significantly lower than average				

Disease Resistance					
Cultivar	**FHB† resistance**	**Powdery Mildew**	**Leaf Rust**	**Glume Blotch**	**Barley Yellow Dwarf Virus**
Early Heading Varieties (119-120 d, Julian)					
SS 520*	1	3	3	2	1
USG 3120	4	3	3	3	3
Jamestown	4	3	3	2	4
Coker 9553	4	3	3	1	1
Mid-Season Heading Varieties (121-122 d, Julian)					
USG 3555	3	3	1	3	4
Branson	3	3	3	2	4
Chesapeake	2	4	1	3	4
Merl	3	3	1	3	1
SS 5205	3	3	4	1	2
Full-Season Heading Varieties (123-124 d, Julian)					
Pioneer 26R15	3	3	4	1	1
USG 3315	3	3	2	2	4
Renwood 3434	2	4	3	4	1
USG 3665	4	3	4	3	4
SS 560	2	3	1	2	1
Pioneer 26R20	3	2	3	2	3
Shirley	2	4	4	3	4
SS-MPV 57	3	1	1	4	1

* This line is not daylength sensitive and should not be planted early in order to avoid potential freeze damage.

4 - Significantly higher than average

3 - Average or higher than average

2 - Average or lower than average

1 - Significantly lower than average

† FHB - Fusarium head blight

Recommended Barley Varieties

	Hulled Barley				Hulless Barley		
	Nomini*	Callao	Price	Thoroughbred	Doyce	Eve	Dan
Adapted Regions							
Coastal Plain		X	X	X	X	X	X
Piedmont, South of James River		X	X	X	X	X	X
Piedmont, North of James River		X	X	X	X	X	X
West of Blue Ridge	X	X	X	X	X	X	X
Agronomic Characteristics							
Yield	3	3	3	4	3	3	4
Test Weight	1	4	3	4	2	4	4
Lodging Tolerance	2	1	3	1	2	3	3
Relative Height	4	1	2	3	3	2	2
Relative Heading	Avg	Early	Avg	Late	Avg	Early	Avg

4 - Significantly higher than average
3 - Average or higher than average
2 - Average or lower than average
1 - Significantly lower than average

*Nomini barley has low test weight. It is not recommended in eastern Virginia because low test weight grain is unsuitable for export or domestic non-ruminant feed markets.

Barley and Wheat Entries

Commercial Barley Entries

Virginia Tech and Virginia Crop Improvement Association, 9142 Atlee Station Road, Mechanicsville, VA 23116 – Barsoy, Callao, Dan, Doyce, Eve, Nomini, Price, Thoroughbred, and Wysor.

Commercial and Experimental Wheat Entries

DynaGro, Box 1467, Galesburg, IL 61402-1467 –DynaGro 9012, Dominion, Shirley, V9723, V9922.

Featherstone Seed Company, 13941 Genito Road, Amelia, VA 23002 - Featherstone 176.

University of Georgia, 1109 Experiment Street, Griffin, GA 30223 – GA-991336-6E9, GA-001170-7E26, and GA-031238-7E34.

University of Maryland, CMREC/Beltsville Facility, 12000 Beaver Dam Road, Laurel, MD 20708 – Chesapeake and MD00W389-08-4.

NC State University, Box 7629, Raleigh, NC 27695 – NC-Cape Fear, NC-Yadkin, NC05-19896.

Pioneer Hi-Bred International, Inc., 700 Boulevard South SW, Suite 302, Huntsville, AL 35802 – Pioneer varieties 26R12, 26R15, 26R20, 26R22, 26R31, and 26R32.

Progeny Ag Products, 1529 Hwy 193, Wynne, AR 72396 – Progeny 117, Progeny 166, and Progeny 185.

Renwood Farms, 17303 Sandy Point Road, Charles City, VA 23030 – Renwood 3434.

Southern States Cooperative, PO Box 26234, Richmond, VA 23260 - SS 520, SS 560, SS 8302, SS 8309, SS 8404, SS MPV 57, SS 5205, SS 8641, SS EXP 8600, and SS EXP 8700.

Syngenta Seeds, Inc., PO Box 411, 520 East 1050 South, Brookston, IN 47923 – Branson, Oakes, Panola, COKER 9804, COKER 9553, SY 9978, and W1566.

Uni-South Genetics, 2640-C Nolensville Road, Nashville, TN 37211 – USG 3120, USG 3201, USG 3251, USG 3315, USG 3409, USG 3665, USG 3555, and USG 3770.

Virginia Tech and Virginia Crop Improvement Association, 9142 Atlee Station Road, Mechanicsville, VA 23111 – Jamestown, Massey, Merl, and all lines prefixed by VA.

Appreciation is expressed to the Virginia Small Grains Check-Off Board, Crop Production Services, Featherstone Seed, Inc., Pioneer Hi-Bred International, Inc., Progeny Ag Products, Renwood Farms, Inc., Southern States Cooperative, Syngenta Seeds, Inc., UniSouth Genetics, Inc., and the Virginia Crop Improvement Association for their financial support of the Small Grains Variety Testing Program at Virginia Tech.
Conducted and summarized by the following Virginia Tech employees: Dr. Wade Thomason, Extension Agronomist, Grains; Dr. Carl Griffey, Small Grains Breeder; Mr. Harry Behl, Agricultural Supervisor; Ms. Elizabeth Hokanson, Research Associate. Location Supervisors: Mr. Tom Custis (Painter); Mr. Bobby Ashburn (Holland); Mr. Bob Pitman, Mr. Mark Vaughn, (Warsaw); Mr. Ned Jones (Blackstone); Dr. Carl Griffey, Mr. Wynse Brooks, Mr. Kevin Hensler (Blacksburg); Mr. Brian Jones (Shenandoah Valley); Mr. David Starner, Mr. Steve Gulick, Mr. Alvin Hood (Orange).

Introduction

The following tables present results from barley and wheat varietal tests conducted in Virginia in 2008-2010. Small-grain cultivar performance tests are conducted each year in Virginia by the Virginia Tech Department of Crop and Soil Environmental Sciences and the Virginia Agricultural Experiment Station. The tests provide information to assist Virginia Cooperative Extension Service agents in formulating cultivar recommendations for small-grain producers and to companies developing cultivars and/or marketing seed within the state. Yield data are given for individual locations and across locations and years; yield and other performance characteristics are averaged over the number of locations indicated. Performance of a given variety often varies widely over locations and years which makes multiple location-year averages a more reliable indication of expected performance than data from a single year or location. Details about management practices for barley and wheat are listed for each experimental location.

The Season

Mid-September produced a window with dry weather and favorable conditions for planting small grains and by September 21, approximate 12% of the intended acres of barley were planted and 7% of wheat acres. Barley planting proceeded rapidly and 50% of the crop was seeded by mid-October. Wheat growers had planted 20% of their intended acres by this time and dry weather forced some to delay until rainfall returned to the Commonwealth. By November 10, wheat seeded was at 62% of acres, compared to 64% for the 5-year average. However, warm temperatures and favorable conditions resulted in emergence being rated at 43% compared to the 5-year average of 29%. Cold, wet weather in late November and December slowed growth dramatically and water-logging in parts of some fields resulted in dead spots. As of December 15, the wheat crop was rated 36% fair, and 47% good. Barley was estimated to be in better condition with 67% of the crop rated as good. Soggy, cold conditions persisted throughout the winter. Many producers had difficulty being timely with late winter nitrogen and herbicide applications due to snow and wet fields. However by late March, fieldwork was back in full swing. On April 10, the wheat crop was rated 55% good and 36% fair. April was warmer and drier than normal, allowing crop growth to progress favorably. But hot, dry, and windy conditions prevailed and by May 10, approximately 70% of the wheat crop had headed, compared to a 5-year average of 38 % by this date. Dry and unseasonably warm weather persisted during pollination and grain fill resulting in yields that were estimated to be 3 and 1 bushel per acre lower than the 5-year average for wheat and barley, respectively. These weather conditions did lessen the impact of most foliar diseases and result in good test weight and overall good grain quality.

Figure 1. Deviation of 2009-10 monthly average temperatures from 30-yr mean.

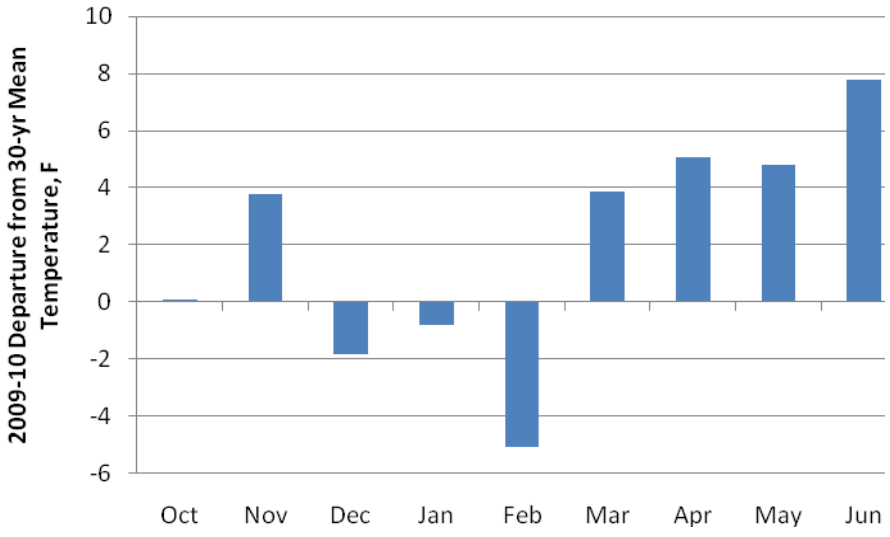
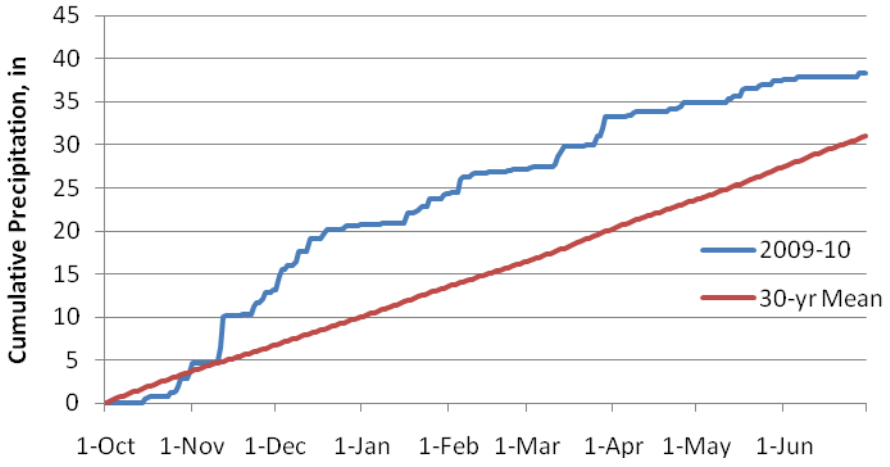


Figure 2. Cumulative daily precipitation, 2009-10 season and 30-yr mean.



Section 1: Barley Varieties

Hulless Barley

Hulless barley tests were planted in seven-inch rows at Blackstone, Orange, Holland, and Painter. They were planted in six-inch rows at Warsaw and Blacksburg. The no-till test at Holland was planted at 28 seeds per row foot. All other locations were planted at 32 seeds per row foot.

The Virginia Tech barley breeding program will continue to develop and improve yield potential and end use quality of hulless barley lines derived from crosses made between superior hulled breeding lines and cultivars, such as Thoroughbred, with outstanding hulless lines. Yield drag of hulless barley continues to be one of the major challenges facing hulless barley production in the United States. To address this problem, we have initiated a multi-disciplinary field, greenhouse, and laboratory research project to address critical issues to improve yield potential of hulless barley. In addition, molecular markers are now available that are linked to the hulless gene. Utilizing these molecular markers as flags for the hulless gene will aid in the development of new and improved hulless barley varieties. Last spring (2010), crosses were made between Thoroughbred and other elite hulless lines possessing resistance to leaf rust, powdery mildew, net blotch and scab to transfer disease resistance as well as hulless genes into Thoroughbred type hulless barley lines. This will further improve yields obtained in Thoroughbred type winter hulless barley lines under disease epidemics, and lead to the development of the next generation of high-quality disease resistance winter hulless barley cultivars.

Three year average (2008, 2009 and 2010) yield for Doyce hulless barley in Virginia was 62 bushels per acre with test weight of 53.5 pounds per bushel. Eve and Dan hulless barley both averaged 65 bushels per acre. However, Dan had the highest average test weight (58.7 pounds/bushel) that was 5.2 pounds per bushel higher than Doyce and 1.4 pounds per bushel higher than Eve (57.3 pounds/bushel). Subsequently, three year average grain yield of elite winter hulless line VA06H-25 (75 bushels per acre) was 13 bushels per acre higher than that of Doyce (62 bushels/acre) and 10 bushels per acre higher than Dan and Eve.

Hulled Barley

Hulled barley tests were planted in seven-inch rows at Blackstone, Orange, Holland, and Painter. They were planted in six-inch rows at Warsaw and Blacksburg. The no-till test at Holland was planted at 28 seeds per row foot. All other locations were planted at 24 seeds per row foot.

Virginia grown barley typically yields in excess of 100 bushels per acre, and fits well in many crop rotation systems. However, profitable barley production on significantly expanded acres in Virginia will require revival of international market opportunities and/or development of barley varieties that livestock feeders desire. In addition, Osage Bio Energy's Appomattox Bio Energy barley based protein and ethanol plant provides promise for an expanded market for winter barley in the Eastern United States. Through these efforts, the quality and value of winter barley has been greatly improved and the area of production in Virginia more than doubled in 2010.

Three year average yields of Thoroughbred hulled barley were 95 bushels per acre with average test weight of 45.2 pounds per bushel compared to the mean yield of 88 bushel per acre and test weight of 45.4 pounds per bushel for the mean of all cultivars tested. Three year average grain yield of hulled experimental line VA06B-48 (95 bushels per acre) was similar to hulled check lines Thoroughbred, 3 bushels per acre higher than Nomini (92 bushels/acre), 5 bushels per acre higher than Callao (90 bushels/acre) and 13 bushels per acre more than Price (82 bushels/acre). Though three year average grain yields of elite hulled line VA06B-19 (92 bushels/acre) was 3 bushels per acre lower than Thoroughbred, average test weight of VA06B-19 (46.2 pounds/bushel) was 1 pound per bushel higher than Thoroughbred and VA06B-19 possesses better resistance to leaf rust and powdery mildew. Yield advantage of Thoroughbred over available hulled and hulless barley cultivars has posed a challenge in developing and releasing new cultivars. Therefore, our current focus is on a better understanding of the genetic basis of yield potential in both hulled and hulless barley and continued inprovements in yield and value added traits of winter barley lines for specific end uses.

Summary of barley management practices for the 2010 harvest season (All rates are given on a per acre basis.)

Blacksburg - Planted September 22, 2009. Preplant fertilizer was 30-80-100 + 1 ton lime in September 2009. Site was sprayed with .6 oz Harmony Extra SG® on November 17, 2009. Site was fertilized with 70 lb N plus 0.9 oz Harmony Extra SG® on March 19, 2010 and with 40 lb N on April 7, 2010. Harvest occurred on June 8-9, 2010.

Blackstone - Planted October 20, 2009. Site was fertilized with 250 lb 13-0-14 + 75 lb 0-46-0 + 1 ton lime on October 6-7, 2009. Site was top-dressed with 60 lb N using ammonium nitrate on March 1, 2010 and with 30 lb N using 15.5-0-0 calcium nitrate on both March 24 and April 14, 2010. Site was spayed with .5 oz Harmony Extra SG® on March 9, 2010 and with .4 oz Capture® for cereal leaf beetle on April 15, 2010. Harvest occurred June 9, 2010.

Painter - Planted October 23, 2009. Preplant fertilizer was 30 lb N using 30% UAN on October 22, 2009. Site was fertilized with 60 lb N using 30%UAN and 0.75 oz Harmony Extra SG® March 11, 2010. Site was fertilized with 20 lb N using 30% UAN April 8, 2010. Harvest occurred on June 15-16, 2010.

Warsaw - Planted October 22, 2009. Preplant fertilizer was 30-80-80-5 applied October 12, 2009. Site was fertilized using 12-0-0-1.5 at 25 lb N on January 14, and at 24 lb N on March 8, 2010. Site was fertilized with an additional 48 lb N using 24-0-0-3 on April 2, 2010. Site was treated with .9 oz Finesse® on March 8, with .9 oz Harmony Extra SG® April 2, and with 1.92 oz Warrior 2® April 29, 2010. Harvest occurred June 1-3, 2010.

Holland – Planted no-till October 22, 2009. Preplant fertilization was 300 lb 9-16-31 on October 21, 2009. Site was fertilized with 60 lb N February 19, and 30 lb N March 19, 2010 using UAN. Site was also treated with .6 oz Harmony Extra SG® on both those dates. Site was sprayed with 3 oz Baythroid® April 20, 2010. Harvest occurred on June 3-4, 2010.

Orange - Planted October 7, 2009. Preplant fertilization was 18-46-0 using DAP on September 24, 2009. Sixty lb N and Harmony Extra® at 0.4 oz were applied March 8, 2010. Harvest occurred on June 3-7, 2010.

Table 1. Summary of performance of hulless entries in the Virginia Tech Barley Test over locations, 2010 harvest.

Hulless Lines	Yield (Bu/a @ 48 lb/bu) (6)		Test Weight (Lb/bu) (6)		Date Headed (Julian) (3)		Height (In) (3)		Lodging (0-9) (4)		Leaf Rust (0-9) (2)		Powdery Mildew (0-9) (1)		Net Blotch (0-9) (2)	
VA07H-35WS	66	+	56.5		116	+	33		3		4		0		2	-
VA07H-31WS	66	+	57.3		116	+	32	-	3		4		1	+	2	-
VA06H-149	65	+	56.1	-	117	+	31	-	1	-	3	-	0		2	-
VA06H-30	65	+	56.9		117	+	32	-	2	-	4		0		2	-
VA08H-64	65	+	56.6		110	-	32	-	2	-	6	+	0		1	-
VA07H-10WS	64	+	57.2		113	-	34	+	2	-	4		0		3	
VA06H-25	63		57.3		116	+	33		3		3	-	0		2	-
VA06H-3WS	63		57.0		116	+	32	-	3		4		0		3	
VA08H-6WS	62		57.4		114	-	34	+	2	-	4		3	+	3	
VA07H-21WS	62		56.1	-	115		34	+	2	-	4		0		5	+
VA08H-72	61		57.6		114	-	33		1	-	6	+	0		2	-
Doyce	61		55.4	-	111	-	31	-	2	-	2	-	0		2	-
VA07H-19	60		57.6		116	+	34	+	2		5	+	0		3	
VA08H-3	60		58.0		115		33		1	-	4		0		4	+
VA06H-31	60		56.2		113	-	33		2	-	4		0		3	
VA08H-78WS	60		57.4		116	+	33		2	-	4		0		3	
VA08H-5	59		57.9		116	+	33		1	-	4		1	+	4	+
VA06H-79	59		55.5	-	116	+	31	-	2	-	9	+	2	+	1	-
VA05H-147	59		56.4		112	-	33		2	-	4		0		4	+
VA07H-18WS	58		57.2		116	+	34	+	2		4		0		4	+
VA07H-12	57		57.9		117	+	34	+	1	-	4		1	+	4	+
Eve	57	-	58.1	+	108	-	33		2	-	4		0		3	
Dan	55	-	58.8	+	114	-	34	+	2	-	3	-	0		3	
VA06H-28	54	-	58.2	+	115		33		2	-	7	+	0		2	-
VA07H-30	53	-	56.5		113	-	33		2	-	4		0		8	+
VA05H-59	53	-	57.2		116	+	31	-	1	-	4		0		4	+
Average	60		57.1		115		33		3		4		0		3	
LSD (0.05)	3		1.0		1		1		1		1		1		1	
C.V.	10		2.1		5		4		---		---		---		---	

Released cultivars are shown in bold print.

The number in parentheses below column headings indicates the number of location-years on which data are based.

Varieties are ordered by descending yield averages.

A plus or minus sign indicates a performance significantly above or below the test average.

The 0-9 ratings indicate a genotype's response to disease or lodging where 0 = highly resistant and 9 = highly susceptible.

Table 2. Two-year average summary of performance of hulless entries in the Virginia Tech Barley Tests, 2009 and 2010 harvests.

Hulless Lines	Yield (Bu/a @ 48 lb/bu) (11)		Test Weight (Lb/bu) (11)		Date Headed (Julian) (6)		Height (In) (6)		Lodging (0-9) (12)		Leaf Rust (0-9) (4)		Powdery Mildew (0-9) (6)		Net Blotch (0-9) (4)	
VA07H-31WS	69	+	56.4		117	+	35	+	3	+	3		2	+	2	-
VA07H-35WS	69	+	56.1		117	+	35	+	3	+	4	+	2	+	2	-
VA06H-25	68	+	56.3		117	+	35	+	3	+	3		2	+	2	-
VA07H-21WS	67		55.7	-	116	+	36	+	3	+	3		2	+	4	+
VA05H-147	67		55.9		113	-	35	+	3	+	3		1		3	
VA07H-10WS	67		56.9	+	114	-	36	+	3	+	3		1		3	
VA06H-3WS	67		56.7	+	117	+	34		3	+	3		2	+	2	-
VA06H-79	65		55.3	-	117	+	33	-	2		8	+	1		1	-
VA06H-31	64		56.0		115		35	+	2		3		1		3	
Doyce	62	-	53.7	-	113	-	32	-	2		1	-	1		5	+
Eve	61	-	56.9	+	109	-	34		3	+	3		1		4	+
Dan	60	-	58.3	+	115		34		3	+	2	-	1		3	
VA05H-59	56	-	57.1	+	116	+	32	-	2		3		4	+	4	+
Average	65		56.2		115		34		3		3		1		3	
LSD (0.05)	3		0.5		1		1		0		1		1		1	
C.V.	12		2.3		1		4		---		---		---		---	

Released cultivars are shown in bold print.

The number in parentheses below column headings indicates the number of location-years on which data are based.

Varieties are ordered by descending yield averages.

A plus or minus sign indicates a performance significantly above or below the test average.

The 0-9 ratings indicate a genotype's response to disease or lodging where 0 = highly resistant 9 = highly susceptible.

Table 3. Three-year average summary of performance of hulless entries in the Virginia Tech Barley Tests, 2008, 2009, and 2010 harvests.

Hulless Lines	Yield (Bu/a @ 48 lb/bu) (16)		Test Weight (Lb/bu) (16)		Date Headed (Julian) (8)		Height (In) (9)		Lodging (0-9) (17)		Leaf Rust (0-9) (6)		Powdery Mildew (0-9) (8)		Net Blotch (0-9) (8)		Early Height (In) (1)	
VA06H-25	75	+	56.9		116	+	36	+	4	+	3		3	+	2		12	
VA05H-147	73	+	56.6		113	-	36	+	3	+	3		1		4	+	12	
VA06H-3WS	70	+	57.7	+	116	+	35		3	+	3		1		3		11	
VA06H-31	68		56.5		114		37	+	3	+	3		2	+	4	+	10	
Eve	65		57.3	+	109	-	35		3	+	3		1		5	+	16	+
Dan	65		58.7	+	115	+	35		3	+	3		1		4	+	7	-
Doyce	62	-	53.5	-	112	-	33	-	4	+	1	-	1		6	+	15	+
VA05H-59	57	-	57.3	+	116	+	34	-	3	+	3		5	+	5	+	9	-
Average	67		56.8		114		35		3		3		2		4		11	
LSD (0.05)	3		0.4		1		1		0		1		0		0		2	
C.V.	12		2.1		1		4		---		---		---		---		13	

Released cultivars are shown in bold print.

The number in parentheses below column headings indicates the number of location-years on which data are based.

Varieties are ordered by descending yield averages.

A plus or minus sign indicates a performance significantly above or below the test average.

The 0-9 ratings indicate a genotype's response to disease or lodging where 0 = highly resistant 9 = highly susceptible.

Table 4. Summary of performance of hulless entries in the Virginia Tech Barley Test, Southern Piedmont AREC, Blackstone, VA, 2010 harvest.

Hulless Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)	
VA05H-59	48	+	51.9	
Doyce	40		53.7	
VA07H-31WS	40		56.8	
VA07H-10WS	39		55.1	
VA05H-147	39		55.1	
Eve	39		55.2	
Dan	38		56.0	
VA07H-35WS	38		52.0	
VA06H-149	37		53.2	
VA07H-21WS	37		51.8	
VA06H-30	36		56.3	
VA06H-79	36		49.9	-
VA08H-64	36		53.1	
VA08H-5	36		55.4	
VA08H-3	35		55.3	
VA08H-6WS	34		54.8	
VA07H-19	33		55.5	
VA07H-12	33		56.6	
VA06H-31	32		54.0	
VA06H-28	32		56.3	
VA06H-25	32		56.7	
VA07H-18WS	31		55.8	
VA06H-3WS	31		55.0	
VA08H-72	31		55.3	
VA08H-78WS	30		55.4	
VA07H-30	30		49.7	-
Average	35		54.4	
LSD (0.05)	9		3.4	
C.V.	18		4.3	

Released cultivars are shown in bold print.
Varieties are ordered by descending yield averages.
A plus or minus sign indicates a performance significantly above or below the test average.

Table 5. Summary of performance of hulless entries in the Virginia Tech Barley Test planted no-till at the Tidewater AREC, Holland, VA, 2010 harvest.

Hulless Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Lodging (0-9)	
VA06H-149	84	+	56.4		1	-
Doyce	82	+	54.1	-	2	
VA05H-147	78	+	56.6		2	
Eve	78	+	59.1	+	3	+
VA08H-72	76		57.4		1	-
VA07H-21WS	75		56.9		2	
VA08H-6WS	73		57.9		2	
VA06H-79	73		56.8		1	-
VA08H-78WS	72		55.7	-	3	+
VA08H-64	72		58.0	+	1	-
VA06H-30	72		54.4	-	3	+
VA07H-30	72		58.5	+	1	-
VA06H-31	71		55.9		1	-
VA07H-10WS	70		57.3		1	-
VA06H-25	70		55.5	-	5	+
VA07H-18WS	69		56.4		2	
VA05H-59	68		57.6		2	
VA07H-19	68		58.1	+	2	
VA06H-28	68		58.8	+	2	
VA07H-35WS	68		55.4	-	4	+
VA06H-3WS	68		56.0		4	+
VA08H-3	65		58.0	+	1	-
VA07H-31WS	62	-	55.8	-	4	+
Dan	62	-	58.6	+	4	+
VA08H-5	60	-	57.8		1	-
VA07H-12	56	-	57.7		1	-
Average	71		56.9		2	
LSD (0.05)	7		1.1		1	
C.V.	7		1.4		---	

Released cultivars are shown in bold print.
Varieties are ordered by descending yield averages.
A plus or minus sign indicates a performance significantly above or below the test average.
The 0-9 ratings indicate a genotype's response to lodging where 0 = highly resistant and 9 = highly susceptible.

Table 6. Summary of performance of hulless entries in the Virginia Tech Barley Test, Eastern Virginia AREC, Warsaw, VA, 2010 harvest.

Hulless Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)		Lodging (0-9)		Leaf Rust (0-9)		Net Blotch (0-9)	
VA07H-31WS	76	+	57.3		119	+	28		2	+	4	-	0	
VA06H-3WS	75	+	57.0		118	+	29		1		4	-	0	
VA06H-30	74	+	57.0		118	+	30		1		5		0	
VA06H-25	74	+	57.2		118	+	30		2	+	4	-	0	
VA07H-35WS	74	+	57.4		118	+	30		2	+	5		0	
VA07H-21WS	72	+	56.7	-	117		31	+	1		4	-	3	+
VA07H-10WS	71	+	57.3		115		32	+	0	-	4	-	0	
VA08H-3	70		57.6	+	116		30		0	-	5		2	
VA07H-12	69		57.8	+	119	+	31	+	0	-	4	-	2	
VA08H-64	68		56.7	-	111	-	29		1		8	+	0	
VA06H-149	68		56.4	-	118	+	27	-	0	-	5		1	
VA06H-31	68		56.4	-	115		31	+	0	-	5		1	
VA07H-18WS	67		57.2		118	+	31	+	1		5		1	
VA08H-6WS	67		57.6	+	115		30		0	-	4	-	1	
VA05H-147	66		56.8	-	114	-	31	+	1		6	+	0	
VA08H-5	66		57.9	+	117		30		0	-	4	-	1	
VA08H-72	63		57.3		116		31	+	0	-	8	+	0	
VA08H-78WS	62		57.4		119	+	30		1		4	-	1	
VA07H-19	62		57.5		119	+	30		0	-	7	+	0	
VA06H-79	61		55.8	-	117		27	-	2	+	9	+	0	
Dan	59	-	59.2	+	116		30		1		4	-	0	
Doyce	59	-	56.1	-	114	-	25	-	0	-	2	-	0	
VA06H-28	56	-	58.0	+	118	+	31	+	1		8	+	0	
Eve	55	-	57.3		110	-	28		1		5		0	
VA07H-30	51	-	57.5		116		30		0	-	6	+	7	+
VA05H-59	48	-	58.2	+	117		27	-	0	-	6	+	0	
Average	65		57.2		116		29		1		5		1	
LSD (0.05)	6		0.4		2		2		1		1		2	
C.V.	6		5.4		5		4		---		---		---	

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

A plus or minus sign indicates a performance significantly above or below the test average.

The 0-9 ratings indicate a genotype's response to disease or lodging where 0 = highly resistant and 9 = highly susceptible.

Table 7. Summary of performance of hulless entries in the Virginia Tech Barley Test, Eastern Shore AREC, Painter, VA, 2010 harvest.

Hulless Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Lodging (0-9)	
VA06H-30	65		57.0		3	+
VA06H-149	64		56.7		1	-
VA08H-72	64		57.7		1	-
VA07H-35WS	63		57.6		4	+
Doyce	61		55.6	-	2	
VA08H-78WS	61		59.2		2	
VA06H-25	60		58.0		4	+
VA07H-10WS	60		58.1		2	
VA08H-64	60		57.4		4	+
Eve	59		59.5		3	+
VA06H-3WS	59		57.2		3	+
VA08H-6WS	58		57.7		1	-
VA07H-31WS	58		57.4		4	+
VA06H-28	58		59.1		3	+
VA06H-31	58		57.6		2	
VA07H-19	57		58.1		3	+
VA08H-3	56		58.1		2	
VA07H-18WS	56		58.4		2	
VA07H-21WS	55		57.6		2	
VA07H-30	54		58.0		2	
Dan	53		60.0		1	-
VA05H-147	52		57.2		1	-
VA05H-59	51		59.0		0	-
VA08H-5	49		58.3		1	-
VA06H-79	48	-	57.3		2	
VA07H-12	48	-	57.0		1	-
Average	57		57.9		2	
LSD (0.05)	9		2.2		1	
C.V.	11		2.7		---	

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

A plus or minus sign indicates a performance significantly above or below the test average.

The 0-9 ratings indicate a genotype's response to lodging where 0 = highly resistant and 9 = highly susceptible.

Table 8. Summary of performance of hulless entries in the Virginia Tech Barley Test, Northern Piedmont AREC, Orange, VA, 2010 harvest.

Hulless Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)	
VA06H-25	71	+	59.4		118	+	33	
VA07H-31WS	70		59.2		118	+	32	
VA08H-78WS	68		60.0	+	118	+	35	+
VA06H-149	67		57.5	-	115		31	
Eve	66		59.7	+	106	-	35	+
Dan	66		60.3	+	114		36	+
VA06H-3WS	66		59.1		118	+	31	
VA07H-19	65		59.5		116		35	+
VA07H-18WS	65		59.9	+	118	+	33	
VA07H-35WS	65		59.0		118	+	32	
Doyce	65		57.2	-	108	-	31	
VA08H-72	64		58.9		113	-	32	
VA07H-10WS	62		58.8		112	-	33	
VA08H-6WS	61		59.2		113	-	33	
VA07H-21WS	61		58.5		115		34	
VA06H-30	61		59.0		118	+	32	
VA07H-30	59		58.8		112	-	34	
VA08H-5	59		60.0	+	118	+	32	
VA08H-64	57		57.3	-	107	-	30	
VA07H-12	57		59.7	+	118	+	31	
VA05H-147	55		57.9	-	111	-	33	
VA06H-79	54		57.4	-	117	+	31	
VA06H-28	54		59.8	+	116		33	
VA06H-31	54		57.6	-	112	-	32	
VA05H-59	51	-	59.3		117	+	30	
VA08H-3	50	-	59.7	+	116		32	
Average	61		58.9		115		32	
LSD (0.05)	10		0.7		2		3	
C.V.	11		0.9		6		6	

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

A plus or minus sign indicates a performance significantly above or below the test average.

Table 9. Summary of performance of hulless entries in the Virginia Tech Barley Test, Kentland Farm, Blacksburg, VA, 2010 harvest.

Hulless Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)		Lodging (0-9)		Leaf Rust (0-9)		Powdery Mildew (0-9)		Net Blotch (0-9)	
VA08H-64	88	+	57.1		113		36		5	-	4		0		1	-
VA08H-3	85	+	58.9	+	113		37	+	4	-	3		0		6	+
VA07H-35WS	82	+	57.8	+	113		37	+	7		4		0		4	-
VA07H-31WS	82	+	57.4		113		37	+	8		4		1	+	4	-
VA08H-5	81	+	58.2	+	114	+	37	+	5	-	4		1	+	6	+
VA08H-6WS	81	+	57.1		114	+	38	+	8		4		3	+	6	+
VA06H-3WS	79		57.6		113		37	+	7		3		0		5	
VA07H-19	76		57.2		113		37	+	8		4		0		6	+
VA06H-31	76		55.8	-	113		37	+	8		3		0		5	
VA06H-79	75		55.6	-	114	+	36		6		9	+	2	+	2	-
VA06H-25	75		57.1		113		37	+	9	+	3		0		4	-
VA06H-30	74		57.6		113		36		6		4		0		4	-
VA07H-12	73		58.4	+	114	+	38	+	7		4		1	+	6	+
VA07H-10WS	73		56.5		113		37	+	9	+	5	+	0		5	
VA06H-149	71		56.7		118	+	35	-	6		1	-	0		3	-
VA07H-21WS	71		55.2	-	113		37	+	9	+	3		0		7	+
VA08H-72	70		59.2	+	113		36		2	-	5	+	0		3	-
VA05H-147	67		54.7	-	111	-	35	-	9	+	2		0		8	+
VA08H-78WS	66		56.5		112	-	36		8		4		0		6	+
VA07H-18WS	65		55.5	-	113		38	+	7		3		0		6	+
VA06H-28	62	-	56.9		112	-	37	+	9	+	7	+	0		4	-
VA07H-30	57	-	56.4		111	-	37	+	7		2		0		8	+
Doyce	56	-	55.5	-	111	-	35	-	8		1	-	0		4	-
VA05H-59	53	-	57.5		113		35	-	5	-	3		0		8	+
Dan	53	-	58.6	+	112	-	36		7		1	-	0		6	+
Eve	47	-	57.8	+	108	-	35	-	8		3		0		7	+
Average	71		57.0		113		36		7		3		0		5	
LSD (0.05)	9		0.7		1		1		2		2		1		1	
C.V.	9		0.9		3		2		---		---		---		---	

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

A plus or minus sign indicates a performance significantly above or below the test average.

The 0-9 ratings indicate a genotype's response to disease or lodging where 0 = highly resistant and 9 = highly susceptible.

Table 10. Summary of performance of hulled entries in the Virginia Tech Barley Test over locations, 2010 harvest.

Hulled Lines	Yield (Bu/a) (6)		Test Weight (Lb/bu) (6)		Date Headed (Julian) (3)		Height (In) (3)		Lodging (0-9) (4)		Leaf Rust (0-9) (2)		Powdery Mildew (0-9) (2)		Net Blotch (0-9) (2)	
VA08B-90	94	+	46.7		113	+	28	-	5	+	1	-	0		1	-
Thoroughbred	91	+	45.5	-	115	+	32	+	2	-	6	+	2	+	2	
VA07B-64	91	+	46.9		112	+	29	-	4		4	+	0		2	
VA07B-61	91	+	47.2		110	-	29	-	4		3		0		2	
VA07B-53	91	+	48.2	+	110	-	30		4		3		0		2	
VA06B-22	90		47.7		109	-	29	-	4		3		0		2	
VA08B-84	90		47.4		111		29	-	4		1	-	0		1	-
VA06B-25	89		47.5		109	-	29	-	4		4	+	0		3	+
VA07B-14	89		48.4	+	109	-	29	-	4		4	+	0		3	+
VA07B-55	88		48.1	+	110	-	30		5	+	5	+	0		2	
Nomini	88		45.8	-	110	-	36	+	3	-	3		0		1	-
VA06B-19	88		47.6		110	-	29	-	4		3		0		2	
VA08B-94	88		46.6		113	+	30		5	+	1	-	0		1	-
VA07B-59	87		48.2	+	110	-	30		4		3		0		2	
VA06B-48	87		46.6		110	-	28	-	4		3		0		1	-
VA08B-38	87		47.1		113	+	28	-	3	-	3		0		3	+
VA08B-61	87		46.8		113	+	31	+	3	-	3		0		1	-
VA07B-62	87		47.9		110	-	30		4		3		0		3	+
VA08B-108	87		46.5		112	+	29	-	3	-	2	-	0		2	
VA08B-111	87		47.4		110	-	28	-	4		2	-	0		1	-
VA07B-15	87		47.3		109	-	29	-	4		3		0		2	
VA07B-52	86		49.0	+	109	-	30		4		4	+	0		2	
VA04B-125	86		46.5		112	+	30		4		4	+	0		2	
VA07B-58	86		47.6		110	-	30		5	+	3		0		3	+
VA07B-56	86		48.1	+	110	-	29	-	4		3		0		2	
VA08B-95	86		45.6	-	112	+	30		4		1	-	2	+	1	-
VA05B-58	86		47.5		113	+	30		3	-	5	+	0		1	-
VA08B-106	84		46.2	-	115	+	28	-	4		2	-	0		1	-
VA07B-54	84		48.4	+	110	-	30		4		3		0		2	
Callao	84		47.3		109	-	28	-	5	+	4	+	0		1	-
VA07B-109	84		48.1	+	112	+	28	-	2	-	4	+	0		1	-
VA07B-113	82		46.6		113	+	27	-	4		2	-	0		1	-
Wysor	81	-	45.4	-	113	+	35	+	4		6	+	0		2	
Price	81	-	46.8		112	+	30		3	-	4	+	0		8	+
VA08B-62	78	-	47.2		113	+	30		4		3		0		2	
VA92-42-46	74	-	46.2	-	113	+	35	+	3	-	1	-	0		7	+
Barsoy	74	-	46.1	-	109	-	34	+	4		7	+	0		1	-
Average	86		47.2		111		30		4		3		0		2	
LSD (0.05)	5		0.9		1		1		1		1		1		1	
C.V.	10		3.5		5		6		---		---		---		---	

Released cultivars are shown in bold print; the number in parentheses below column headings indicates the number of location-years on which data are based. Varieties are ordered by descending yield averages.

A plus or minus sign indicates a performance significantly above or below the test average.

The 0-9 ratings indicate a genotype's response to disease or lodging where 0 = highly resistant and 9 = highly susceptible.

Table 11. Two-year average summary of performance of hulled entries in the Virginia Tech Barley Tests, 2009 and 2010 harvests.

Hulled Lines	Yield (Bu/a) (11)		Test Weight (Lb/bu) (11)		Date Headed (Julian) (6)		Height (In) (6)		Lodging (0-9) (10)		Leaf Rust (0-9) (4)		Powdery Mildew (0-9) (5)		Net Blotch (0-9) (4)	
Nomini	92	+	44.8	-	110	-	37	+	2	-	3	-	0		1	-
VA07B-64	92	+	45.9		112	+	31	-	4	+	3	-	0		3	
Thoroughbred	91	+	44.7	-	116	+	33		3		6	+	4	+	2	-
VA06B-48	90	+	45.0		111		31	-	3		3	-	0	-	2	-
VA07B-61	89		46.0		111		32	-	4	+	3	-	0	-	2	-
VA06B-22	89		46.0		110	-	32	-	3		2	-	0		3	
VA04B-125	89		45.3		113	+	32	-	4	+	4		0		2	-
VA07B-52	89		47.3	+	110	-	32	-	3		3	-	0		2	-
VA05B-58	88		46.1		113	+	33		3		4		0		1	-
VA07B-59	87		46.6	+	110	-	32	-	4	+	3	-	0		3	
VA07B-15	87		45.9		110	-	31	-	3		3	-	0		3	
VA06B-19	87		45.9		111		32	-	4	+	3	-	0		3	
Callao	86		45.5		110	-	30	-	4	+	3	-	0		2	-
VA07B-109	85		46.5	+	112	+	31	-	2	-	3	-	0		1	-
VA92-42-46	80	-	45.4		112	+	36	+	2	-	1	-	0	-	7	+
Wysor	77	-	43.6	-	113	+	37	+	4	+	5	+	0	-	3	
Price	77	-	45.6		113	+	32	-	3		4		0		6	+
Barsoy	73	-	44.6	-	110	-	35	+	4	+	7	+	1	+	2	-
Average	86		45.6		111		33		3		4		0		3	
LSD (0.05)	4		0.7		1		1		1		1		0		1	
C.V.	11		3.5		1		5		---		---		---		---	

Released cultivars are shown in bold print.
The number in parentheses below column headings indicates the number of location-years on which data are based.
Varieties are ordered by descending yield averages.
A plus or minus sign indicates a performance significantly above or below the test average.
The 0-9 ratings indicate a genotype's response to disease or lodging where 0 = highly resistant and 9 = highly susceptible.

Table 12. Three-year average summary of performance of hulled entries in the Virginia Tech Barley Tests, 2008, 2009, and 2010 harvests.

Hulled Lines	Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)		Lodging (0-9)		Leaf Rust (0-9)		Powdery Mildew (0-9)		Net Blotch (0-9)	
	(16)		(16)		(8)		(9)		(15)		(6)		(7)		(8)	
Thoroughbred	95	+	45.2		116	+	35		3	-	6	+	4	+	3	+
VA06B-48	95	+	45.4		111	-	33	-	4		3	-	0		3	+
Nomini	92	+	44.6	-	109	-	38	+	4		3	-	0		2	
VA06B-19	92	+	46.2	+	110	-	33	-	5	+	3	-	0		3	+
VA05B-58	91		46.2	+	113	+	33	-	4		4		0		2	
VA04B-125	91		45.8		113	+	33	-	5	+	4		0		2	
Callao	90		45.7		110	-	31	-	5	+	3	-	0		3	+
Price	82	-	45.9		112		33	-	4		3	-	0		6	+
VA92-42-46	81	-	44.8	-	111	-	38	+	4		1	-	0		7	+
Wysor	78	-	43.6	-	113	+	38	+	5	+	5	+	0		4	+
Barsoy	78	-	44.9		110	-	37	+	4		6	+	1	+	3	+
Average	88		45.4		112		35		4		4		1		3	
LSD (0.05)	4		0.6		1		1		1		1		0		0	
C.V.	12		3.9		1		5		---		---		---		---	

Released cultivars are shown in bold print.
The number in parentheses below column headings indicates the number of location-years on which data are based.
Varieties are ordered by descending yield averages.
A plus or minus sign indicates a performance significantly above or below the test average.
The 0-9 ratings indicate a genotype's response to disease or lodging where 0 = highly resistant and 9 = highly susceptible.

Table 13. Summary of performance of hulled entries in the Virginia Tech Barley Test, Southern Piedmont AREC, Blackstone, VA, 2010 harvest.

Hulled Lines	Yield (Bu/a)		Test Weight (Lb/bu)	
VA07B-59	55	+	42.2	
VA06B-22	54		40.7	
VA08B-94	52		39.4	
VA06B-25	52		40.4	
VA07B-64	51		38.8	
Thoroughbred	51		40.6	
VA07B-52	51		42.0	
VA07B-53	50		43.6	+
VA07B-109	50		42.3	
VA06B-19	50		39.6	
VA08B-111	50		42.5	
Price	49		41.5	
VA05B-58	48		41.3	
VA08B-95	48		38.5	
Callao	47		41.6	
VA08B-84	47		40.2	
VA08B-38	47		41.8	
VA07B-58	47		40.7	
VA08B-90	47		39.7	
VA07B-61	46		38.7	
VA07B-56	46		40.7	
VA07B-15	46		37.6	-
VA08B-106	46		41.3	
VA07B-62	46		41.7	
VA08B-108	45		40.4	
VA08B-61	45		40.2	
VA07B-14	45		41.1	
VA07B-55	45		40.2	
VA08B-62	43		40.1	
Wysor	43		40.0	
VA07B-54	43		42.0	
VA04B-125	42		40.6	
VA06B-48	41		40.3	
Nomini	39		40.8	
VA92-42-46	35	-	40.8	
VA07B-113	34	-	39.6	
Barsoy	28	-	39.0	
Average	46		40.6	
LSD (0.05)	9		3.0	
C.V.	14		5.2	

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

A plus or minus sign indicates a performance significantly above or below the test average.

Table 14. Summary of performance of hulled entries in the Virginia Tech Barley Test planted no-till at the Tidewater AREC, Holland, VA, 2010 harvest.

Hulled Lines	Yield (Bu/a)		Test Weight (Lb/bu)		Lodging (0-9)	
VA07B-15	94		46.3		3	
Thoroughbred	94		44.3		0	-
VA06B-25	93		45.2		3	
VA07B-61	92		45.3		4	
VA04B-125	92		44.2		3	
Callao	91		45.2		4	
VA08B-90	87		44.0		4	
VA08B-94	87		45.3		5	+
VA07B-53	86		45.1		4	
VA06B-19	86		46.1		3	
VA07B-62	85		45.2		3	
VA07B-52	84		47.1	+	4	
VA06B-48	84		44.6		2	
VA07B-64	83		45.8		3	
VA07B-58	82		46.5		4	
VA08B-106	82		44.0		2	
VA08B-61	82		45.0		2	
VA08B-95	81		44.6		3	
VA07B-56	81		45.6		3	
VA08B-38	81		45.6		2	
VA92-42-46	81		45.4		1	-
VA07B-113	81		45.0		3	
VA07B-14	80		46.0		4	
VA06B-22	80		45.2		4	
VA07B-54	78		45.1		3	
VA08B-108	78		44.8		1	-
Price	78		44.8		2	
VA08B-84	78		45.2		4	
VA07B-59	77		45.7		2	
VA05B-58	77		44.0		2	
Barsoy	77		42.3	-	2	
VA07B-55	74		45.5		4	
VA08B-62	72		44.6		2	
VA07B-109	72		45.3		2	
VA08B-111	72		46.1		2	
Wysor	.		.		.	
Nomini	.		.		.	
Average	82		45.1		3	
LSD (0.05)	13		1.7		2	
C.V.	10		2.5		---	

Released cultivars are shown in bold print.
Varieties are ordered by descending yield averages.
A plus or minus sign indicates a performance significantly above or below the test average.
The 0-9 ratings indicate a genotype's response to lodging where 0 = highly resistant and 9 = highly susceptible.
All plots of Nomini and Wysor were heavily damaged by deer at this location and are not being reported.

Table 15. Summary of performance of hulled entries in the Virginia Tech Barley Test, Eastern Virginia AREC, Warsaw, VA, 2010 harvest.

Hulled Lines	Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)		Lodging (0-9)		Leaf Rust (0-9)		Powdery Mildew (0-9)		Net Blotch (0-9)	
VA07B-64	91		48.2		111		25		2	+	6		0		0	
VA08B-84	91		47.8		112		24		0	-	1	-	0		0	
VA06B-48	90		47.3		110	-	24		0	-	6		0		0	
VA06B-19	89		47.8		110	-	24		0	-	4		0		0	
VA08B-95	89		46.3	-	112		26		1		1	-	3	+	0	
VA06B-22	89		47.4		110	-	23		1		4		0		0	
VA04B-125	89		48.1		113		26		0	-	6		0		1	+
VA08B-90	88		47.6		116	+	23		1		2	-	0		0	
VA07B-59	87		49.9	+	111		26		1		4		0		0	
VA08B-94	87		47.8		115	+	25		1		1	-	0		0	
Nomini	87		45.5	-	109	-	30	+	2	+	5		0		0	
VA08B-106	86		47.1		118	+	24		0	-	3	-	0		0	
Thoroughbred	86		47.1		116	+	27		0	-	8	+	1	+	0	
VA07B-61	86		49.3		111		25		0	-	5		0		0	
VA07B-56	86		49.9	+	112		25		1		4		0		0	
Wysor	85		45.9	-	114	+	29	+	2	+	7	+	0		0	
VA07B-58	85		49.0		111		25		1		4		0		0	
VA07B-55	85		49.0		111		26		2	+	7	+	0		0	
VA07B-62	85		48.0		112		25		1		5		0		0	
VA07B-54	85		51.3	+	111		25		1		5		0		0	
VA07B-113	84		46.9		116	+	23		0	-	3	-	0		0	
VA07B-53	84		48.3		112		25		1		5		0		0	
VA07B-109	84		48.3		111		25		0	-	5		0		0	
VA06B-25	84		50.2	+	110	-	23		1		6		0		0	
VA07B-52	83		50.2	+	111		27		1		6		0		0	
VA07B-14	83		49.8	+	111		24		1		6		0		1	+
VA92-42-46	83		46.3	-	114	+	29	+	1		2	-	0		4	+
VA08B-108	83		46.0	-	115	+	23		0	-	4		0		0	
VA08B-111	83		47.7		110	-	23		0	-	3	-	0		0	
Callao	83		48.6		111		23		1		6		0		0	
VA08B-38	82		46.9		116	+	24		0	-	5		0		0	
VA05B-58	82		48.9		115	+	26		0	-	7	+	0		0	
VA08B-61	81		46.4		115	+	26		0	-	5		0		0	
VA07B-15	81		49.5		111		24		0	-	5		0		0	
VA08B-62	80		48.5		115	+	26		1		4		0		0	
Price	76	-	47.1		113		26		1		6		0		7	+
Barsoy	68	-	46.2	-	114	+	30	+	0	-	9	+	0		0	
Average	85		48.0		112		25		1		5		0		0	
LSD (0.05)	7		1.7		2		3		1		2		1		1	
C.V.	6		2.6		5		8		---		---		---		---	

Released cultivars are shown in bold print.
Varieties are ordered by descending yield averages.
A plus or minus sign indicates a performance significantly above or below the test average.
The 0-9 ratings indicate a genotype's response to disease or lodging where 0 = highly resistant and 9 = highly susceptible.

Table 16. Summary of performance of hulled entries in the Virginia Tech Barley Test, Eastern Shore AREC, Painter, VA, 2010 harvest.

Hulled Lines	Yield (Bu/a)	Test Weight (Lb/bu)	Lodging (0-9)
VA06B-22	88	50.3	5
VA07B-53	87	50.1	5
VA08B-84	87	50.0	5
VA07B-14	87	50.2	5
VA08B-90	87	49.7	5
VA07B-64	86	48.7	5
VA08B-108	85	49.3	4
VA07B-55	85	50.9	4
VA07B-61	85	48.3	4
VA07B-62	85	50.2	4
VA07B-59	84	50.3	5
VA07B-58	84	49.7	5
VA08B-111	84	51.1	5
VA07B-54	83	50.4	4
VA07B-56	82	51.5	4
VA06B-25	82	50.1	4
VA07B-15	82	49.3	4
VA06B-48	81	49.4	4
VA08B-38	81	49.6	3
VA06B-19	80	51.1	5
VA08B-95	80	47.8	3
Price	79	49.7	3
VA05B-58	79	50.3	3
VA07B-52	77	50.8	3
VA08B-61	77	49.2	3
VA07B-113	76	49.5	5
Thoroughbred	75	39.4 -	3
Barsoy	73	49.1	4
VA08B-94	73	50.0	5
VA92-42-46	72	49.4	4
Nomini	72	48.0	4
VA04B-125	72	49.0	3
Wysor	70	47.8	5
Callao	70	49.7	5
VA08B-62	70	53.3	4
VA07B-109	69	50.1	3
VA08B-106	69	48.8	4
Average	79	49.6	4
LSD (0.05)	13	3.8	2
C.V.	12	5.4	---

Released cultivars are shown in bold print.
Varieties are ordered by descending yield averages.
A plus or minus sign indicates a performance significantly above or below the test average.
The 0-9 ratings indicate a genotype's response to lodging where 0 = highly resistant and 9 = highly susceptible.

Table 17. Summary of performance of hulled entries in the Virginia Tech Barley Test, Northern Piedmont AREC, Orange, VA, 2010 harvest.

Hulled Lines	Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)	
VA07B-53	112	+	54.0	+	111		34	+
Wysor	108		48.7	-	115	+	40	+
VA07B-55	106		53.1	+	110	-	33	
VA08B-90	105		51.0		113		30	-
VA07B-64	105		52.1		114	+	30	-
VA07B-14	102		53.1	+	110	-	32	
VA07B-15	102		52.9	+	110	-	31	
VA08B-61	101		51.4		114	+	34	+
VA08B-84	101		51.6		113		30	-
VA04B-125	100		50.2	-	114	+	33	
VA08B-111	100		49.4	-	112		30	-
VA06B-25	99		52.1		109	-	32	
Callao	98		50.9		110	-	31	
VA08B-108	98		50.4	-	112		31	
VA07B-62	98		53.4	+	112		32	
VA05B-58	97		51.2		114	+	32	
VA07B-56	97		52.8	+	112		31	
VA06B-22	97		53.0	+	111		32	
VA07B-58	97		53.3	+	112		32	
VA07B-61	96		53.3	+	113		31	
VA08B-94	96		51.0		115	+	31	
Thoroughbred	95		51.4		116	+	34	+
VA06B-19	95		52.9	+	112		31	
VA07B-52	95		53.9	+	111		30	-
VA08B-106	94		49.5	-	115	+	30	-
VA08B-38	94		50.1	-	114	+	29	-
Price	93		50.6	-	113		31	
VA06B-48	93		49.8	-	110	-	29	-
VA07B-59	92		52.5	+	110	-	32	
VA08B-95	92		49.1	-	113		31	
VA08B-62	91		50.6	-	114	+	32	
VA07B-54	87		52.7	+	111		31	
VA92-42-46	86		49.3	-	113		37	+
VA07B-109	86		52.2	+	113		28	-
Nomini	85		48.3	-	112		39	+
Barsoy	84		51.0		106	-	38	+
VA07B-113	83		50.0	-	112		26	-
Average	96		51.4		112		32	
LSD (0.05)	15		0.8		2		2	
C.V.	11		1.1		5		5	

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

A plus or minus sign indicates a performance significantly above or below the test average.

Table 18. Summary of performance of hulled entries in the Virginia Tech Barley Test, Kentland Farm, Blacksburg, VA, 2010 harvest.

Hulled Lines	Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)		Lodging (0-9)		Leaf Rust (0-9)		Powdery Mildew (0-9)		Net Blotch (0-9)	
VA08B-90	153	+	47.9		110	+	30	-	9	+	0	-	0		2	-
Thoroughbred	138	+	48.4		113	+	34		6	-	5	+	4	+	3	-
VA08B-84	137	+	49.7	+	109		32		9	+	1		0		2	-
VA08B-61	135		48.8	+	111	+	35	+	8		1		0		2	-
VA06B-48	134		48.3		109		33		9	+	1		0		2	-
Nomini	133		46.5	-	109		39	+	6	-	1		0		1	-
VA07B-109	132		50.5	+	111	+	31	-	1	-	2		0		2	-
VA08B-108	132		47.7		110	+	33		8		0	-	0		3	-
VA07B-113	130		49.0	+	111	+	31	-	8		2		0		2	-
VA08B-111	130		47.6		109		30	-	8		1		0		2	-
VA05B-58	130		49.6	+	110	+	33		8		2		0		1	-
VA08B-106	128		46.8	-	111	+	32		9	+	1		0		2	-
VA07B-54	128		48.9	+	108	-	33		9	+	1		0		4	
VA07B-61	128		48.4		108	-	32		9	+	1		0		4	
VA06B-19	128		48.1		108	-	33		9	+	2		0		5	+
VA07B-59	127		48.0		108	-	32		9	+	2		0		5	+
VA08B-38	127		47.2		110	+	33		7	-	1		0		5	+
VA07B-52	127		49.8	+	107	-	32		9	+	2		0		5	+
VA06B-22	126		48.6		107	-	32		8		2		0		4	
VA07B-55	125		47.9		108	-	33		9	+	2		0		4	
VA08B-95	124		47.4		111	+	33		9	+	1		2	+	2	-
VA07B-62	124		48.0		108	-	33		9	+	1		0		5	+
VA06B-25	124		47.4		108	-	33		9	+	1		0		5	+
VA07B-14	123		48.1		107	-	32		9	+	1		0		5	+
VA07B-53	122		48.1		108	-	32		9	+	2		0		5	+
VA07B-58	122		46.5	-	108	-	32		9	+	2		0		6	+
VA04B-125	122		47.0		110	+	31	-	9	+	3		0		3	-
VA07B-56	121		47.9		108	-	31	-	9	+	2		0		5	+
VA07B-64	120		48.0		111	+	32		8		2		0		5	+
VA08B-94	120		46.4	-	111	+	33		9	+	1		0		3	-
VA07B-15	118		48.1		108	-	32		9	+	2		0		5	+
Callao	115		48.1		108	-	31	-	9	+	2		0		2	-
Barsoy	114		48.2		109		34		8		6	+	0		3	-
VA08B-62	112	-	46.4	-	111	+	32		9	+	1		0		5	+
Wysor	110	-	44.6	-	111	+	37	+	9	+	5	+	0		5	+
Price	108	-	46.9		110	+	32		7	-	2		0		9	+
VA92-42-46	100	-	45.3	-	112	+	38	+	7	-	0	-	0		9	+
Average	125		47.8		109		33		8		2		0		4	
LSD (0.05)	12		1.0		1		2		1		2		1		1	
C.V.	7		1.5		3		3		---		---		---		---	

Released cultivars are shown in bold print; varieties are ordered by descending yield averages.

A plus or minus sign indicates a performance significantly above or below the test average.

The 0-9 ratings indicate a genotype's response to disease or lodging where 0 = highly resistant and 9 = highly susceptible.

Section 2: Barley Scab Research

One of the primary research objectives of the Virginia Tech barley breeding program is to identify and develop cultivars possessing resistance to Fusarium Head Blight (FHB) or scab. Each year all barley and hulless barley entries in Virginia's Official State Variety Trials are evaluated for FHB resistance in an inoculated, irrigated nursery at the Blacksburg test site. Data from this test for the current crop year and two- and three-year averages for FHB incidence, FHB severity and FHB Index (incidence x severity / 100) are included in this bulletin (Tables 19 – 24) to aid producers in selection of cultivars on the basis of FHB resistance. Cultivars possessing complete resistance or immunity to FHB have not been identified and resistance levels in currently available cultivars vary from moderately resistant to highly susceptible.

A major goal of the breeding program is to identify and incorporate unique and complementary types of FHB resistance into cultivars to enhance the overall level of resistance. Genes controlling FHB resistance have been identified on only a few spring barley lines. Incorporating multiple resistance genes having additive effects on FHB resistance into cultivars will enhance the overall level of resistance. Because the individual resistance genes are located on different barley chromosomes and each gene confers only partial resistance to FHB, identifying lines having multiple resistance genes is difficult using traditional breeding techniques. To overcome this limitation, our program will incorporate the available markers to help select FHB resistant cultivars.

Entries were inoculated by spreading scabby corn seeds in plots at the booting stage and by spraying a Fusarium graminearum spore suspension directly onto spikes at the 50% and 100% flowering stage. A low level of FHB infections were obtained in 2010. It may be because of the combination of some scab resistance and non-favorable climate during the infection season (low temperature and humidity). Among 26 hulless lines and varieties tested in 2010, the FHB index were 1% or less with FHB incidence less than 13% and FHB severity less than 23% (Table 19). Most lines have incidence and severity less than 10% except Doyce. Based on two-year mean data for 2009 and 2010 (Table 20), nine lines and 2 varieties had FHB index values lower than the test mean (<3%). Four hulless barley lines (VA06H-3, VA05H-59, VA05H-147TW, VA06H-31) and two varieties (Eve and Dan) tested across three years (2008-2010) had average FHB index values lower than the test mean of 9% (Table 21).

A higher FHB infection level was obtained for hulled barley in 2010. Among 37 barley lines and varieties tested in 2010, the FHB index varied from 1% to 23% with FHB incidence ranging from 5% to 60% and FHB severity ranging from 10% to 38% (Table 22). Fourteen lines and five varieties had FHB index values lower than the mean (<9%) and expressing moderate resistant to FHB. Based on two-year mean data for 2009 and 2010 (Table 23), one line and six varieties had FHB index values lower than the test mean (<8%). One hulled barley lines (VA05B-58) and three varieties (Barsoy, Thoroughbred and Price) tested across three years (2008-2010) had average FHB index values lower than the test mean of 22% (Table 24).

Table 19. Summary of reaction of entries in the Virginia Tech State Hulless Barley Test to Fusarium head blight (scab), 2010 harvest.

LINE	Heading date (Julian)	FHB Incidence[1] (%)		FHB Severity[2] (%)		FHB Index[3] (0-100)		Rank FHB Index
Dan	112	1		3		0		1
VA06H-3WS	113	1		3		0		2
VA06H-31	113	2		5		0		3
VA08H-72	113	2		5		0		4
VA08H-64	113	3		3		0		5
VA08H-3	113	4		4		0		6
VA07H-12	114	3		8		0		7
VA07H-18WS	113	4		5		0		8
VA06H-79	114	5		6		0		9
VA05H-59	113	5		8		0		10
VA05H-147	111	5		8		0		11
VA07H-35WS	113	8		5		0		12
VA07H-31WS	113	6		16		0		13
VA06H-25	113	8		8		1	+	14
VA08H-5	114	5		10		1	+	15
VA07H-19	113	10		3		1	+	16
VA07H-30	111	6		8		1	+	17
VA08H-6WS	114	6		8		1	+	18
Doyce	111	11		8		1	+	19
VA06H-30	113	4		15		1	+	20
VA06H-149	118	8		10		1	+	21
VA07H-10WS	113	13		8		1	+	22
VA06H-28	112	10		10		1	+	23
Eve	108	8		13		1	+	24
VA07H-21WS	113	5		23	+	1	+	25
VA08H-78WS	112	8		13		1	+	26
Average	113	6		8		0		
LSD (0.05)		10		12		1		

Released cultivars are shown in bold print. Varieties are ordered by ascending index averages.

A plus or minus sign indicates a performance significantly above or below the average.

Entries were planted in 2-row plots, 4 ft in length at Blacksburg, VA and were inoculated at 50% and 100% heading stages with Fusarium graminearum spore suspension (50,000 spores/ml).

[1]Scab Incidence (%): Percentage of infected spikes among 10 randomly selected spikes.

[2]Scab Severity (%): Percentage of infected spikelets among 10 infected spikes.

[3]Scab Index = Incidence X Severity/100,an overall indicator of scab resistance/susceptibility level.

Table 20. Two year average summary of reaction of entries in the Virginia Tech State Hulless Barley Tests to Fusarium head blight (scab), 2009 and 2010 harvests.

LINE	Heading date (Julian)	FHB Incidence[1] (%)		FHB Severity[2] (%)		FHB Index[3] (0-100)		Rank FHB Index
VA06H-25W/T	115	6		10		1		1
VA06H-31T/W	114	10		8		1		2
VA07H-21WS	114	6		16		1		3
VA07H-10WS	115	15		8		1		4
Eve	111	9		13		1		5
VA06H-79	116	13		9		1		6
VA05H-147T/W	113	10		15		2		7
VA07H-31WS	115	14		16		2		8
Dan	114	11		13		2		9
VA06H-3WS	115	11		11		3		10
VA07H-35WS	115	13		14		3		11
VA05H-59	115	16		18		4		12
Doyce	113	52	+	23		18	+	13
Average	114	14		13		3		
LSD (0.05)		10		11		5		

Released cultivars are shown in bold print. Varieties are ordered by ascending index averages.

A plus or minus sign indicates a performance significantly above or below the average.

Entries were planted in 2-row plots, 4 ft in length at Blacksburg, VA and were inoculated at 50% and 100% heading stages with Fusarium graminearum spore suspension (50,000 spores/ml).

[1]Scab Incidence (%): Percentage of infected spikes among 10 randomly selected spikes.

[2]Scab Severity (%): Percentage of infected spikelets among 10 infected spikes.

[3]Scab Index = Incidence X Severity/100,an overall indicator of scab resistance/susceptibility level.

Table 21. Three year average summary of reaction of entries in the Virginia Tech State Hulless Barley Tests to Fusarium head blight (scab), 2008 - 2010 harvests.

LINE	Heading date (Julian)	FHB Incidence[1] (%)		FHB Severity[2] (%)		FHB Index[3] (0-100)		Rank FHB Index
Eve	114	18		13		2		1
VA05H-147	116	20		17		4		2
VA05H-59	118	18		25		6		3
Dan	117	17		17		6		4
VA06H-3	116	32		14		7		5
VA06H-31	115	28		15		8		6
Doyce	115	53	+	25		17		7
VA06H-25	117	36		26		19		8
Average	116	28		19		9		
LSD (0.05)		17		15		13		

Released cultivars are shown in bold print. Varieties are ordered by ascending index averages.

A plus or minus sign indicates a performance significantly above or below the average.

Entries were planted in 2-row plots, 4 ft in length at Blacksburg, VA and were inoculated at 50% and 100% heading stages with Fusarium graminearum spore suspension (50,000 spores/ml).

[1]Scab Incidence (%): Percentage of infected spikes among 10 randomly selected spikes.

[2]Scab Severity (%): Percentage of infected spikelets among 10 infected spikes.

[3]Scab Index = Incidence X Severity/100,an overall indicator of scab resistance/susceptibility level.

Table 22. Summary of reaction of entries in the Virginia Tech State Barley Test to Fusarium head blight (scab), 2010 harvest.

LINE	Heading date (Julian)	FHB Incidence[1] (%)	FHB Severity[2] (%)	FHB Index[3] (0-100)	Rank FHB Index
Barsoy	109	5	10	1	1
VA08B-106	111	11	10	2	2
Price	110	15	13	2	3
VA08B-62	111	18	10	2	4
VA08B-61	111	20	10	2	5
VA08B-108	110	18	13	2	6
Wysor	111	18	10	2	7
VA07B-58	108	13	20	3	8
VA08B-94	111	15	15	3	9
Thoroughbred	113	18	20	4	10
VA92-42-46	112	30	13	4	11
VA08B-38	110	23	20	5	12
VA07B-64	111	25	18	5	13
VA07B-113	111	30	15	5	14
VA05B-58	110	30	18	5	15
VA07B-53	108	33	15	5	16
VA07B-55	108	30	15	6	17
Nomini	109	30	18	6	18
VA07B-62	108	25	20	7	19
VA07B-52	107	50	18	9	20
VA04B-125	110	45	20	9	21
VA07B-109	111	35	25	10	22
Callao	108	60	18	11	23
VA08B-95	111	55	20	11	24
VA07B-54	108	43	25	12	25
VA07B-15	108	55	23	12	26
VA07B-14	107	48	25	13	27
VA08B-90	110	50	28	13	28
VA07B-59	108	50	23	14	29
VA06B-25	108	38	30	14	30
VA07B-61	108	60	25	15	31
VA06B-22	107	45	25	15	32
VA06B-19	108	45	38	18	33
VA08B-84	109	33	35	18	34
VA07B-56	108	55	28	20	35
VA06B-48	109	60	38	23	36
VA08B-111	109	45	38	23	37
Average	109	34	20	9	
LSD (0.05)		42	25	20	

Released cultivars are shown in bold print. Varieties are ordered by ascending index averages.

A plus or minus sign indicates a performance significantly above or below the average.

Entries were planted in 2-row plots, 4 ft in length at Blacksburg, VA and were inoculated at 50% and 100% heading stages with Fusarium graminearum spore suspension (50,000 spores/ml).

[1]Scab Incidence (%): Percentage of infected spikes among 10 randomly selected spikes.

[2]Scab Severity (%): Percentage of infected spikelets among 10 infected spikes.

[3]Scab Index = Incidence X Severity/100 (overall indicator of scab resistance/susceptibility level.)

Table 23. Two year average summary of reaction of entries in the Virginia Tech State Barley Tests to Fusarium head blight (scab), 2009 and 2010 harvests.

LINE	Heading date (Julian)	FHB Incidence[1] (%)	FHB Severity[2] (%)	FHB Index[3] (0-100)	Rank FHB Index
Wysor	114	13	10 -	2	1
Thoroughbred	115	13	18	2	2
Barsoy	112	16	13	3	3
VA92-42-46	115	20	19	3	4
Nomini	112	23	20	5	5
Price	113	30	19	7	6
Callao	111	40	19	7	7
VA07B-52	111	46	18	8	8
VA07B-109	113	33	24	9	9
VA07B-61	111	40	19	9	10
VA07B-15	111	44	21	9	11
VA07B-64	113	33	25	10	12
VA06B-22	111	33	25	10	13
VA07B-59	111	41	23	11	14
VA04B-125	113	54	21	12	15
VA06B-19	111	40	29	12	16
VA05B-58	113	49	23	13	17
VA06B-48	112	43	29	14	18
Average	112	34	21	8	
LSD (0.05)		22	11	9	

Released cultivars are shown in bold print. Varieties are ordered by ascending index averages.

A plus or minus sign indicates a performance significantly above or below the average.

Entries were planted in 2-row plots, 4 ft in length at Blacksburg, VA and were inoculated at 50% and 100% heading stages with Fusarium graminearum spore suspension (50,000 spores/ml).

[1]Scab Incidence (%): Percentage of infected spikes among 10 randomly selected spikes.

[2]Scab Severity (%): Percentage of infected spikelets among 10 infected spikes.

[3]Scab Index = Incidence X Severity/100 (overall indicator of scab resistance/susceptibility level.)

Table 24. Three year average summary of reaction of entries in the Virginia Tech State Barley Tests to Fusarium head blight (scab), 2008 - 2010 harvests.

LINE	Heading date (Julian)	FHB Incidence[1] (%)		FHB Severity[2] (%)		FHB Index[3] (0-100)		Rank FHB Index
Thoroughbred	118	30	-	18	-	6	-	1
VA05B-58	114	56		23		14		2
Barsoy	112	43		26		19		3
Price	115	50		29		19		4
VA04B-125	113	66	+	31		23		5
Callao	111	58		32		23		6
VA06B-19	112	58		37		25		7
VA06B-48	112	60		36		26		8
Wysor	116	42		33		27		9
Nomini	114	48		37		27		10
VA92-42-46	115	47		43	+	32		11
Average	114	51		31		22		
LSD (0.05)		11		12		11		

Released cultivars are shown in bold print. Varieties are ordered by ascending index averages.

A plus or minus sign indicates a performance significantly above or below the average.

Entries were planted in 2-row plots, 4 ft in length at Blacksburg, VA and were inoculated at 50% and 100% heading stages with Fusarium graminearum spore suspension (50,000 spores/ml).

[1]Scab Incidence (%): Percentage of infected spikes among 10 randomly selected spikes.

[2]Scab Severity (%): Percentage of infected spikelets among 10 infected spikes.

[3]Scab Index = Incidence X Severity/100 (overall indicator of scab resistance/susceptibility level.)

Section 3: Wheat Varieties

Wheat tests were planted in seven-inch rows at Blackstone, Orange, Holland, Painter, and Shenandoah Valley. They were planted in six-inch rows at Warsaw and Blacksburg. They were planted in seven and one-half-inch rows at the Warsaw No-Till location. All no-till locations (Holland, Warsaw No-Till, and Shenandoah Valley) were planted at 28 seeds per row foot. All other locations were planted at 22 seeds per row foot.

Selecting the best wheat varieties is challenging but becomes easier with adequate information on performance over multiple environments. Past seasons across Virginia have provided the opportunity to evaluate daylength sensitivity, spring freeze damage, glume blotch, scab (Fusarium head blight), and general plant health. Many newer wheat varieties and lines performed well in all environments tested.

The future for wheat varieties adapted to Virginia conditions is very positive. Dr. Carl Griffey, Virginia Tech's small grains breeder, has many lines starting with "VA" shown in the by-location tables that are in the top-yielding group and that display good disease resistance.

The released varieties that yielded significantly higher than the statewide mean in 2010 were Shirley, Pioneer Brand 26R20, USG 3665, Dyna-Gro 9012, USG 3251, USG 3592, Pioneer Brand 26R22, USG 3120, and USG 3200. USG 3120 and Dyna-Gro 9012 also had mean test weight that was also significantly higher than the test mean. The average of all locations was 79 bu/ac.

Shirley had the highest two year average yield. Pioneer Brand 26R20, USG 3665, Branson, USG 3120, Vigoro V9723, Pioneer Brand 26R15, Merl, USG 3555 and Pioneer Brand 25R32also had grain yields that were significantly higher than the test mean when results from 2009 and 2010 were combined.

Producers who grow large acreages of wheat should plant two or more varieties having significantly different maturity dates in order to ensure harvest of high quality grain having high test weight and no sprouting. In Virginia it is typical that the first good week of wheat harvest is followed by a period of sporadic or consistent rain showers, which delay subsequent harvest and significantly reduce grain test weight and quality. Growers can circumvent this problem by planting varieties that differ significantly in maturity wherein early maturing varieties often can be harvested first and prior to significant rain showers, and later maturing varieties harvested subsequently will suffer less damage and losses in test weight and quality due to exposure to such a rain event.

Three locations in 2008-09, Warsaw No-till, Shenandoah Valley and Holland were planted no-till following corn. Individual sites are reported similar to other testing locations. These sites are also included in the overall yearly average.

Summary of wheat management practices for the 2010 harvest season (All rates are given on a per acre basis.)

Blacksburg - Planted September 23, 2009. Preplant fertilizer was 30-80-100 + 1 ton lime in September 2009. Site was sprayed with .6 oz Harmony Extra SG® on November 17, 2009. Site was fertilized with 70 lb N plus 0.9 oz Harmony Extra SG® on March 19, 2010 and with 50 lb N on April 7, 2010. Harvest occurred on June 18-19, 2010.

Blackstone - Planted October 21, 2009. Site was fertilized with 325 lb 10-10-10 + 1 ton lime on October 6-7, 2009. Site was top-dressed with 60 lb N using ammonium nitrate on March 1, 2010 and with 40 lb N using 15.5-0-0 calcium nitrate on both March 24 and April 14, 2010. Site was spayed with .5 oz Harmony Extra SG® on March 9, 2010 and with .4 oz Capture® for cereal leaf beetle on April 15, 2010. Harvest occurred June 25, 2010.

Warsaw - Planted October 22, 2009. Preplant fertilizer was 30-80-80-5 applied October 12, 2009. Site was fertilized using 12-0-0-1.5 at 25 lb N on January 14, and at 24 lb N on March 8, 2010. Site was fertilized with an additional 60 lb N using 24-0-0-3 on April 1, 2010. Site was treated with .9 oz Finesse® on March 8, 2010. Harvest occurred June 10, 2010.

Warsaw No-Till – Applied ½ pt 2-4D + 2 pt paraquat October 8, 2009. Planted October 13, 2009. Preplant fertilizer was 30-80-80-5 + 1 ton lime applied October 12, 2009. Site was fertilized using 12-0-0-1.5 at 25 lb N on January 14, and at 48 lb N on March 9, 2010. Site was fertilized with an additional 60 lb N using 24-0-0-3 on April 1, 2010. Site was treated with .9 oz Finesse® on March 8, and with 1.92 oz Warrior 2® April 29, 2010. Harvest occurred June 10, 2010.

Painter - Planted October 23, 2009. Preplant fertilizer was 30 lb N using 30% UAN on October 22, 2009. Site was fertilized with 60 lb N using 30%UAN and 0.75 oz Harmony Extra SG® March 11, 2010. Site was fertilized with 40 lb N using 30% UAN April 8, 2010. Harvest occurred on June 15-17, 2010.

Holland - Planted no-till October 22, 2009. Preplant fertilization was 300 lb 9-16-31 on October 21, 2009. Site was fertilized with 60 lb N on February 19 and again on March 19, 2010 using UAN. Site was also treated with .6 oz Harmony Extra SG® on both those dates. Site was sprayed with 3 oz Baythroid® April 20, 2010. Harvest occurred on June 10, 2010.

Orange - Planted October 7, 2009. Preplant fertilization was 18-46-0 using DAP on September 24, 2009. Sixty lb N and Harmony Extra® at 0.4 oz were applied March 8, 2010. Harvest occurred on June 15-18, 2010.

Shenandoah Valley - Planted on October 6, 2009. Preplant fertilizer was 30 lb N + 1 qt Roundup ®. Sixty lb N and 0.9 oz Harmony Extra® were applied March 19, 2010 and 40 lb N as UAN was applied on April 20. Harvest occurred June 22, 2010.

Table 25. Summary of performance of entries in the Virginia Tech Wheat Test, 2010 harvest.

Line	Yield (Bu/a) (7)		Test Weight (Lb/bu) (7)		Date Headed (Julian) (4)		Height (In) (4)		Lodging (0-9) (4)		Powdery Mildew (0-9) (2)		Leaf Rust (0-9) (4)		Barley Yellow Dwarf Virus (0-9) (3)		Hessian Fly Resistance (Biotype)[1]	Awns[2]
VA05W-151	86	+	62.3	+	120	-	33	-	2	+	1		3	+	3	+	---	TA
Shirley	85	+	58.4	-	122	+	31	-	0	-	1		0	-	2		---	TA
Pioneer 26R20	85	+	60.8		122	+	35	+	1		1		2		2		BOL	A
USG 3665	85	+	60.5		121		35	+	1		1		3	+	2		---	TA
Dyna-Gro 9012	84	+	61.6	+	121		32	-	1		1		2		1	-	---	A
USG 3251	84	+	59.7	-	123	+	34		1		1		2		1	-	---	A
USG 3592	84	+	60.8		121		34		1		3	+	3	+	1	-	BO	TA
VA05W-251	83	+	60.4		121		32	-	2	+	1		0	-	2		O	TA
VA08W-92	83	+	63.2	+	119	-	34		2	+	1		1	-	2		---	TA
VA05W-258	83	+	60.5		122	+	36	+	2	+	1		2		2		B	TA
Pioneer 26R22	83	+	59.6	-	121		34		1		2	+	4	+	2		---	A
USG 3120	83	+	61.8	+	118	-	35	+	1		1		1	-	1	-	---	A
SS 8700	82	+	59.1	-	123	+	34		1		1		4	+	0	-	O	A
VA06W-44	82	+	60.8		119	-	32	-	1		2	+	3	+	2		---	TA
USG 3201	82	+	61.2		120	-	32	-	0	-	2	+	2		1	-	---	A
Pioneer 26R15	81		59.6	-	122	+	35	+	0	-	1		3	+	2		B	A
SS-MPV 57	81		59.7	-	122	+	36	+	1		2	+	3	+	3	+	---	TA
USG 3315	81		60.3		122	+	33	-	1		1		3	+	1	-	---	TA
VA08W-223	81		61.1		119	-	34		2	+	1		1	-	4	+	---	TA
Chesapeake	81		61.1		120	-	32	-	1		1		4	+	2		---	TA
Branson	81		59.7	-	119	-	32	-	1		1		3	+	2		---	AL
USG 3555	81		59.6	-	121		32	-	1		1		4	+	1	-	O	AL
VA05W-70	81		61.9	+	122	+	32	-	1		1		1	-	2		---	TA
Progeny 117	81		60.5		119	-	37	+	3	+	4	+	3	+	2		---	TA
Renwood 3434	81		60.1	-	122	+	30	-	1		1		2		4	+	---	TA
VA08W-294	81		61.0		122	+	33	-	1		1		0	-	1	-	---	TA
VA07W-415	81		60.5		122	+	35	+	2	+	1		1	-	3	+	---	TA

Table 25. Summary of performance of entries in the Virginia Tech Wheat Test, 2010 harvest, continued.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)		Lodging (0-9)		Powdery Mildew (0-9)		Leaf Rust (0-9)		Barley Yellow Dwarf Virus (0-9)		Hessian Fly Resistance (Biotype)[1]	Awns[2]
	(7)		(7)		(4)		(4)		(4)		(2)		(4)		(3)			
GA 991336-6E9	81		61.7	+	120	-	35	+	1		1		1	-	2		---	A
SY 9978	81		59.4	-	120	-	36	+	2	+	1		2		1	-	BO	A
Vigoro V9723	81		59.7	-	120	-	38	+	1		2	+	4	+	2		---	TA
W1566	80		59.4	-	122	+	37	+	1		1		5	+	2		BOL	TA
SS 520	80		60.0	-	118	-	35	+	1		2	+	3	+	3	+	---	TA
VA08W-196	80		60.7		119	-	33	-	2	+	1		1	-	4	+	---	TA
VA08W-286	80		59.8	-	123	+	30	-	1		1		1	-	2		---	TA
Merl	80		61.7	+	121		33	-	0	-	1		3	+	3	+	---	TA
GA-001170-7E26	80		62.3	+	122	+	33	-	0	-	1		0	-	2		O	A
USG 3770	80		60.5		119	-	36	+	2	+	5	+	3	+	1	-	---	TA
Oakes	79		61.9	+	122	+	33	-	1		4	+	3	+	1	-	B	TA
Pioneer 25R32	79		60.6		122	+	34		1		1		3	+	2		---	A
VA08W-295	79		61.9	+	122	+	34		1		2	+	1	-	2		---	TA
SS 8600	79		61.1		121		34		0	-	1		3	+	1	-	---	A
Pioneer 26R12	79		62.2	+	122	+	34		0	-	1		2		2		---	A
SS 560	79		60.1	-	123	+	32	-	1		1		3	+	4	+	---	TA
Vigoro 9922	79		60.7		121		35	+	1		1		3	+	2		---	A
VA05W-139	79		61.0		122	+	32	-	0	-	1		1	-	3	+	---	TA
VA06W-93	79		61.7	+	120	-	30	-	1		3	+	1	-	3	+	---	TA
Jamestown	79		61.2		118	-	32	-	1		1		2		1	-	B	A
VA06W-412	79		61.4		122	+	33	-	0	-	1		1	-	1	-	---	TA
VA08W-193	79		60.3		122	+	31	-	1		1		1	-	3	+	---	TA
VA08W-232	79		61.7	+	118	-	33	-	2	+	1		1	-	3	+	---	TA
VA08W-176	79		62.3	+	123	+	34		1		1		1	-	2		---	TA
Progeny 185	78		60.3		119	-	35	+	1		3	+	4	+	2		---	TA
SS 5205	78		61.2		121		30	-	1		1		0	-	3	+	---	TA
NC-Cape Fear	78		61.7	+	119	-	32	-	2	+	1		2		2		---	TA
GA-031238-7E34	78		60.3		122	+	30	-	0	-	1		1	-	3	+	---	TA

Table 25. Summary of performance of entries in the Virginia Tech Wheat Test, 2010 harvest, continued.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)		Lodging (0-9)		Powdery Mildew (0-9)		Leaf Rust (0-9)		Barley Yellow Dwarf Virus (0-9)		Hessian Fly Resistance (Biotype)[1]	Awns[2]
	(7)		(7)		(4)		(4)		(4)		(2)		(4)		(3)			
Coker 9804	78		60.1	-	121		34		1		1		4	+	2		B	A
VA07W-569	78		62.3	+	122	+	35	+	3	+	2	+	3	+	2		---	TA
Progeny 166	78		60.9		120	-	39	+	1		7	+	3	+	2		---	TA
Featherstone 176	78		60.3		119	-	35	+	2	+	1		4	+	3	+	---	TA
VA06W-392	78		60.8		121		33	-	2	+	1		0	-	2		---	TA
VA07W-138	77		61.6	+	122	+	33	-	1		2	+	2		2		BOL	TA
SS 8641	77		61.7	+	122	+	35	+	0	-	1		0	-	3	+	---	TA
COKER 9553	77		62.4	+	119	-	36	+	1		1		2		1	-	O	A
Pioneer 26R31	77		59.0	-	121		30	-	0	-	1		3	+	5	+	O	TA
VA06W-194	77		60.3		121		33	-	2	+	2	+	0	-	2		---	TA
SS 8404	77		61.2		122	+	31	-	0	-	3	+	2		1	-	---	A
VA07W-601	77		61.4		120	-	33	-	1		1		2		2		---	TA
SS 8309	77		60.7		121		35	+	1		1		3	+	2		---	TA
VA05W-168	77		63.0	+	119	-	32	-	2	+	1		1	-	2		---	TA
NC-Yadkin	77		60.0	-	121		33	-	1		1		1	-	1	-	O	TA
NC05-19896	76	-	61.5		121		31	-	1		1		2		2		---	TA
Panola	76	-	60.3		120	-	34		1		1		4	+	2		---	A
VA05W-640	76	-	61.7	+	121		34		1		1		2		2		---	TA
VA06W-587	76	-	62.3	+	119	-	34		2	+	1		4	+	1	-	---	TA
VA06W-612	75	-	61.0		122	+	32	-	1		1		1	-	4	+	---	TA
VA06W-146	75	-	60.2	-	122	+	36	+	2	+	1		2		3	+	---	TA
Dominion	75	-	60.4		123	+	31	-	1		1		3	+	4	+	---	TA
SS 8302	75	-	61.1		122	+	34		0	-	2	+	5	+	3	+	B	A
VA06W-558	75	-	61.9	+	121		34		1		4	+	2		4	+	---	TA
VA08W-165	74	-	62.8	+	123	+	33	-	1		1		0	-	2		---	TA
VA07W-594	74	-	61.5		123	+	33	-	1		1		1	-	1	-	---	TA

Table 25. Summary of performance of entries in the Virginia Tech Wheat Test, 2010 harvest, continued.

Line	Yield (Bu/a) (7)		Test Weight (Lb/bu) (7)		Date Headed (Julian) (4)		Height (In) (4)		Lodging (0-9) (4)		Powdery Mildew (0-9) (2)		Leaf Rust (0-9) (4)		Barley Yellow Dwarf Virus (0-9) (3)		Hessian Fly Resistance (Biotype)[1]	Awns[2]
MD00W389-08-4	72	-	60.9		119	-	33	-	0	-	1		4	+	3	+	---	A
Massey	68	-	60.4		121		38	+	2	+	2	+	8	+	3	+	B	AL
Average	79		60.9		121		34		1		1		2		2			
LSD (0.05)	3		0.7		0		1		0		1		1		1			
C.V.	7		2.2		1		4		---		---		---		---			

Released cultivars are shown in bold print.

The number in parentheses below column headings indicates the number of locations on which data are based.

Varieties are ordered by descending yield averages. A plus or minus sign indicates a performance significantly above or below the test average.

The 0-9 ratings indicate a genotype's response to disease or lodging, where 0 = highly resistant and 9 = highly susceptible.

[1]Seedlings of all lines were tested for resistance to biotypes B, O, and L of Hessian Fly. Letter in column indicates varietal resistance. Lines lacking letter were susceptible.

[2]A=awned, AL=awnletted, TA=tip awned

Table 26. Two year average summary of performance of entries in the Virginia Tech Wheat Tests, 2009 and 2010 harvests.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)		Lodging (0-9)		Powdery Mildew (0-9)		Leaf Rust (0-9)		Barley Yellow Dwarf Virus (0-9)		Wheat Spindle Streak Virus (0-9)	
	(14)		(14)		(8)		(9)		(9)		(6)		(7)		(3)		(1)	
VA05W-151	83	+	60.5	+	121		34	-	3	+	1	+	2		2		2	
Shirley	83	+	56.6	-	124	+	33	-	1		0	-	0	-	1	-	2	
Pioneer 26R20	82	+	58.1	-	124	+	36	+	1		1	+	1	-	1	-	1	
VA05W-258	81	+	58.0	-	124	+	37	+	2	+	1	+	1	-	1	-	2	
USG 3665	81	+	58.1	-	123		36	+	1		1	+	2		1	-	0	
VA05W-251	81	+	58.3		122		33	-	2	+	1	+	0	-	1	-	0	
Branson	81	+	57.7	-	120	-	34	-	1		1	+	2		1	-	1	
USG 3120	80	+	59.4	+	119	-	36	+	1		1	+	1	-	1	-	3	
Vigoro V9723	79	+	57.7	-	121		39	+	2	+	2	+	3	+	1	-	4	
Pioneer 26R15	79	+	57.2	-	122		36	+	0	-	1	+	2		1	-	2	
VA07W-415	79	+	57.6	-	123		36	+	2	+	0	-	0	-	2		1	
Merl	79	+	59.7	+	122		34	-	0	-	1	+	2		2		2	
USG 3555	79	+	57.7	-	122		32	-	1		0	-	3	+	1	-	0	
Pioneer 25R32	79	+	58.6		120	-	35		3	+	1	+	2		2		0	
SS-MPV 57	78		58.1	-	124	+	37	+	2	+	2	+	3	+	2		1	
VA06W-412	78		59.3	+	123		33	-	0	-	1	+	1	-	1	-	1	
Vigoro 9922	78		58.4		123		35		0	-	0	-	2		1	-	2	
SS 520	78		57.9	-	120	-	35		2	+	1	+	2		2		6	
Progeny 185	78		58.4		121		36	+	1		2	+	3	+	2		3	
VA05W-139	78		58.6		124	+	33	-	0	-	1	+	1	-	2		3	
Renwood 3434	78		57.7	-	123		31	-	1		1	+	1	-	3	+	3	
Progeny 117	77		58.6		120	-	37	+	3	+	3	+	2		1	-	2	
USG 3315	77		58.9		123		35		2	+	1	+	2		1	-	1	
Chesapeake	77		59.2	+	121		34	-	2	+	0	-	3	+	2		2	

Table 26. Two year average summary of performance of entries in the Virginia Tech Wheat Tests, 2009 and 2010 harvests, continued.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)		Lodging (0-9)		Powdery Mildew (0-9)		Leaf Rust (0-9)		Barley Yellow Dwarf Virus (0-9)		Wheat Spindle Streak Virus (0-9)	
	(14)		(14)		(8)		(9)		(9)		(6)		(7)		(3)		(1)	
NC-Yadkin	77		58.3		122		34	-	2	+	1	+	0	-	1	-	0	
VA06W-392	77		58.4		123		34	-	2	+	2	+	0	-	2		5	
Jamestown	77		59.8	+	120	-	33	-	1		1	+	1	-	1	-	6	
VA05W-168	76		61.2	+	121		33	-	2	+	1	+	1	-	1	-	0	
GA 991336-6E9	76		58.9		121		35		1		1	+	1	-	1	-	7	+
VA06W-93	76		59.6	+	123		31	-	2	+	3	+	1	-	2		1	
Oakes	76		60.1	+	124	+	35		2	+	3	+	2		1	-	6	
VA07W-138	76		59.9	+	124	+	33	-	1		1	+	1	-	1	-	2	
COKER 9553	76		60.4	+	120	-	36	+	1		1	+	1	-	1	-	6	
SS 560	76		58.0	-	124	+	34	-	1		1	+	2		3	+	2	
Pioneer 26R31	76		57.5	-	122		31	-	1		1	+	1	-	3	+	5	
SS 5205	75	-	58.8		122		31	-	1		1	+	0	-	2		4	
VA05W-640	75	-	59.6	+	122		35		1		0	-	1	-	1	-	0	
Featherstone 176	75	-	58.0	-	120	-	35		3	+	0	-	3	+	2		1	
USG 3592	75	-	58.7		123		36	+	3	+	1	+	2		1	-	6	
Pioneer 26R12	75	-	59.6	+	123		35		1		1	+	1	-	1	-	4	
SS 8309	74	-	58.5		123		36	+	1		1	+	2		2		0	
VA06W-194	74	-	57.9	-	122		33	-	3	+	1	+	0	-	1	-	2	
Progeny 166	74	-	58.2	-	122		39	+	2	+	5	+	1	-	1	-	9	+
NC-Cape Fear	74	-	59.5	+	119	-	33	-	3	+	0	-	1	-	2		1	
Coker 9804	74	-	57.7	-	122		35		2	+	1	+	3	+	1	-	5	
VA06W-558	74	-	60.3	+	122		35		2	+	3	+	2		3	+	0	
VA06W-587	74	-	60.4	+	121		36	+	2	+	1	+	3	+	1	-	5	
Dominion	73	-	58.2	-	124	+	32	-	1		0	-	2		3	+	5	
Panola	73	-	57.6	-	122		35		2	+	1	+	3	+	1	-	5	
SS 8641	73	-	58.5		123		36	+	1		0	-	0	-	2		5	
SS 8302	73	-	59.2	+	123		36	+	1		2	+	3	+	3	+	4	

Table 26. Two year average summary of performance of entries in the Virginia Tech Wheat Tests, 2009 and 2010 harvests, continued.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)	Height (In)		Lodging (0-9)		Powdery Mildew (0-9)		Leaf Rust (0-9)		Barley Yellow Dwarf Virus (0-9)		Wheat Spindle Streak Virus (0-9)	
	(14)		(14)		(8)	(9)		(9)		(6)		(7)		(3)		(1)	
SS 8404	72	-	59.3	+	123	32	-	1		3	+	1	-	1	-	7	+
Massey	66	-	58.8		122	39	+	2	+	1	+	6	+	2		1	
Average	77		58.7		122	35		1		1		2		2		3	
LSD (0.05)	2		0.5		2	1		1		0		1		1		4	
C.V.	8		2.4		3	4		---		---		---		---		---	

Released cultivars are shown in bold print.

The number in parentheses below column headings indicates the number of location-years on which data are based.

Varieties are ordered by descending yield averages. A plus or minus sign indicates a performance significantly above or below the test average.

The 0-9 ratings indicate a genotype's response to disease or lodging, where 0 = highly resistant and 9 = highly susceptible.

Table 27. Three year average summary of performance of entries in the Virginia Tech Wheat Tests, 2008, 2009, and 2010 harvests.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)		Lodging (0-9)		Powdery Mildew (0-9)		Leaf Rust (0-9)		Barley Yellow Dwarf Virus (0-9)		Wheat Spindle Streak Virus (0-9)		*S. nodorum* Leaf Blotch (0-9)		Early Height (In)	
	(21)		(21)		(12)		(13)		(15)		(9)		(11)		(4)		(1)		(1)		(2)	
VA05W-151	86	+	60.4	+	120	-	34	-	3	+	1	+	3	+	2		2		2		13	+
Shirley	86	+	57.0	-	122	+	33	-	1	-	0	-	0	-	1	-	2		0	-	11	-
VA05W-258	85	+	57.9	-	123	+	37	+	2		2	+	2	+	2		2		2		13	+
Branson	85	+	57.6	-	120	-	34	-	2		1	+	2	+	1	-	1		0	-	10	-
USG 3555	84	+	57.7	-	121	+	33	-	2		1	+	3	+	1	-	0		3	+	14	+
USG 3665	84	+	58.2		122	+	37	+	1	-	1	+	2	+	1	-	0		3	+	11	-
VA05W-251	84	+	58.0	-	121	+	33	-	2		1	+	0	-	1	-	0		1	-	12	
Pioneer 26R15	84	+	57.3	-	121	+	36	+	1	-	1	+	2	+	2		2		2		11	-
Merl	84	+	59.6	+	121	+	35		1	-	1	+	3	+	3	+	2		2		12	
VA05W-139	83	+	58.6		123	+	34	-	0	-	1	+	1	-	2	+	3		2		11	-
SS-MPV 57	82		58.0	-	123	+	37	+	2		2	+	3	+	3	+	1		4	+	12	
Renwood 3434	82		57.6	-	122	+	32	-	1	-	0	-	2	+	3	+	3		0	-	11	-
SS 520	81		57.7	-	119	-	36	+	3	+	1	+	2	+	3	+	6		2		14	+
USG 3315	81		58.8		122	+	35		2		1	+	3	+	1	-	1		3	+	13	+
Progeny 117	81		58.4		120	-	37	+	3	+	3	+	3	+	2		2		2		13	+
SS 560	81		57.9	-	123	+	34	-	1	-	1	+	3	+	3	+	2		3	+	12	
Progeny 185	81		58.2		121	+	36	+	1	-	3	+	3	+	2		3		1	-	12	
VA06W-93	81		59.4	+	122	+	32	-	2		3	+	1	-	2		1		0	-	10	-
Chesapeake	81		59.3	+	121	+	34	-	2		0	-	3	+	2		2		2		12	
VA05W-168	81		61.2	+	120	-	33	-	2		1	+	1	-	1	-	0		0	-	11	-
SS 5205	81		58.7		121	+	31	-	2		1	+	0	-	2		4		1	-	12	
VA06W-392	81		58.3		122	+	34	-	3	+	2	+	0	-	2		5		0	-	10	-
Jamestown	80		59.8	+	119	-	33	-	1	-	1	+	1	-	1	-	6		3	+	14	+
Pioneer 26R31	80		57.6	-	121	+	32	-	1	-	1	+	2	+	4	+	5		3	+	13	+
COKER 9553	79	-	60.2	+	119	-	36	+	1	-	1	+	2	+	1	-	6		1	-	13	+

Table 27. Three year average summary of performance of entries in the Virginia Tech Wheat Tests, 2008, 2009, and 2010 harvests, continued.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)		Lodging (0-9)		Powdery Mildew (0-9)		Leaf Rust (0-9)		Barley Yellow Dwarf Virus (0-9)		Wheat Spindle Streak Virus (0-9)		*S. nodorum* Leaf Blotch (0-9)		Early Height (In)	
	(21)		(21)		(12)		(13)		(15)		(9)		(11)		(4)		(1)		(1)		(2)	
Pioneer 26R12	79	-	59.4	+	122	+	36	+	1	-	1	+	2	+	2		4		1	-	10	-
SS 8641	79	-	58.6		122	+	36	+	1	-	0	-	0	-	2	+	5		1	-	13	+
VA06W-194	79	-	57.9	-	121	+	34	-	3	+	1	+	0	-	2		2		2		11	-
SS 8309	79	-	58.4		123	+	36	+	1	-	1	+	2	+	2		0		2		9	-
Dominion	78	-	58.4		122	+	33	-	2		0	-	2	+	3	+	5		1	-	11	-
Featherstone 176	78	-	58.0	-	120	-	36	+	3	+	1	+	3	+	2		1		3	+	12	
USG 3592	78	-	58.5		122	+	37	+	4	+	2	+	1	-	2		6		2		13	+
Coker 9804	77	-	57.6	-	121	+	36	+	2		1	+	3	+	2		5		4	+	12	
SS 8302	77	-	59.0	+	122	+	37	+	1	-	3	+	3	+	3	+	4		0	-	12	
Progeny 166	77	-	57.8	-	121	+	40	+	2		6	+	1	-	2		9	+	2		10	-
Panola	77	-	57.3	-	120	-	36	+	2		1	+	3	+	2		5		4	+	12	
SS 8404	76	-	59.3	+	122	+	33	-	1	-	3	+	2	+	1	-	7	+	1	-	12	
Massey	68	-	58.3		121	+	39	+	3	+	1	+	7	+	3	+	1		2		13	+
Average	81		58.5		121		35		2		1		2		2		3		2		12	
LSD (0.05)	2		0.4		0		1		1		0		0		1		4		1		1	
C.V.	8		2.1		1		4		---		---		---		---		---		---		10	

Released cultivars are shown in bold print.

The number in parentheses below column headings indicates the number of location-years on which data are based.

Varieties are ordered by descending yield averages. A plus or minus sign indicates a performance significantly above or below the test average.

The 0-9 ratings indicate a genotype's response to disease or lodging, where 0 = highly resistant and 9 = highly susceptible.

Table 28. Summary of performance of entries in the Virginia Tech Wheat Test planted conventionally-tilled at Warsaw, 2010 harvest.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)		Lodging (0-9)		Powdery Mildew (0-9)		Leaf Rust (0-9)	
Pioneer 26R20	87	+	61.8		121	+	33	+	2		0		3	+
Shirley	85	+	59.7	-	121	+	29	-	1	-	0		0	-
Dyna-Gro 9012	84	+	62.2	+	118	-	30		1	-	0		4	+
USG 3665	84	+	60.9	-	120	+	33	+	2		0		4	+
VA05W-251	83	+	60.8	-	121	+	30		2		0		0	-
VA05W-70	83	+	63.3	+	121	+	31		2		0		0	-
USG 3120	82		62.5	+	116	-	34	+	1	-	0		1	-
USG 3251	82		60.3	-	121	+	31		1	-	0		3	+
VA08W-232	82		62.3	+	116	-	30		3	+	0		1	-
GA-001170-7E26	82		62.8	+	120	+	31		1	-	0		0	-
USG 3592	81		60.9	-	121	+	32		2		0		4	+
VA05W-151	81		62.6	+	119		31		2		0		2	
GA 991336-6E9	81		62.5	+	119		33	+	1	-	0		1	-
VA06W-194	80		60.9	-	118	-	31		2		0		0	-
USG 3201	80		62.4	+	118	-	30		1	-	0		3	+
VA08W-286	80		60.8	-	123	+	28	-	2		0		0	-
VA08W-176	80		63.1	+	122	+	32		2		0		0	-
VA05W-258	80		61.3		121	+	35	+	2		0		1	-
VA08W-196	79		60.7	-	117	-	31		2		0		1	-
Progeny 117	79		60.9	-	117	-	35	+	2		3	+	3	+
VA08W-294	79		61.5		121	+	30		2		0		0	-
Renwood 3434	79		60.5	-	121	+	27	-	2		0		2	
VA07W-415	79		61.6		120	+	34	+	2		0		1	-
VA06W-412	79		62.7	+	121	+	30		1	-	0		0	-
SY 9978	79		60.8	-	118	-	34	+	3	+	0		2	
Pioneer 25R32	79		61.1		120	+	32		2		0		4	+
SS 520	79		60.0	-	116	-	33	+	2		0		3	+
VA06W-44	79		61.6		117	-	29	-	1	-	0		2	
USG 3770	79		60.6	-	116	-	35	+	2		5	+	3	+
VA08W-193	78		61.1		122	+	29	-	1	-	0		2	
VA08W-223	78		61.5		117	-	32		2		0		1	-
USG 3315	78		60.7	-	121	+	31		1	-	0		4	+
VA06W-587	78		62.7	+	117	-	32		2		0		2	
Pioneer 26R22	78		59.9	-	118	-	31		2		0		4	+
SS-MPV 57	78		60.4	-	121	+	33	+	2		0		5	+
VA05W-168	78		63.6	+	116	-	31		3	+	0		0	-
VA07W-569	77		63.1	+	121	+	32		2		0		2	
USG 3555	77		60.3	-	119		29	-	2		0		5	+
VA06W-392	77		61.4		119		31		2		0		0	-
Pioneer 26R15	77		59.9	-	121	+	32		1	-	0		5	+
VA06W-93	77		62.3	+	119		28	-	1	-	0		2	
VA08W-295	77		62.8	+	122	+	31		2		0		0	-
VA07W-601	77		61.8		117	-	31		2		0		1	-
SS 8309	77		61.6		120	+	32		2		0		3	+
Pioneer 26R12	77		63.1	+	120	+	31		1	-	0		1	-

Table 28. Summary of performance of entries in the Virginia Tech Wheat Test planted conventionally-tilled at Warsaw, 2010 harvest, continued.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)		Lodging (0-9)		Powdery Mildew (0-9)		Leaf Rust (0-9)	
VA08W-92	77		63.2	+	116	-	31		2		0		1	-
Oakes	76		62.3	+	120	+	31		2		1	+	2	
NC-Yadkin	76		61.1		118	-	31		1	-	0		0	-
W1566	76		59.4	-	120	+	35	+	2		0		6	+
Jamestown	76		61.9	+	116	-	31		1	-	0		2	
Panola	76		60.3	-	118	-	32		2		0		6	+
SS 8600	76		61.3		118	-	32		2		0		4	+
VA07W-138	75		61.6		121	+	30		1	-	0		2	
NC-Cape Fear	75		61.9	+	116	-	30		2		0		2	
Merl	75		61.6		120	+	31		1	-	0		5	+
Progeny 185	75		60.9	-	117	-	32		2		0		5	+
VA06W-612	75		61.5		121	+	31		1	-	0		2	
COKER 9553	74		62.5	+	117	-	34	+	2		0		1	-
SS 8700	74		59.6	-	121	+	32		1	-	0		4	+
VA05W-640	74		62.1	+	119		32		2		0		2	
Featherstone 176	74		61.1		117	-	32		2		0		3	+
VA05W-139	74		61.5		122	+	29	-	1	-	0		2	
Progeny 166	74		61.2		118	-	35	+	3	+	4	+	2	
Vigoro 9922	74		61.1		118	-	33	+	2		0		4	+
Chesapeake	74		61.2		117	-	30		2		0		4	+
SS 8404	74		62.3	+	121	+	28	-	1	-	2	+	1	-
VA08W-165	74		63.3	+	122	+	31		2		0		0	-
VA06W-558	73		62.1	+	118	-	32		2		2	+	1	-
Coker 9804	73		60.4	-	118	-	32		2		0		5	+
GA-031238-7E34	73		61.3		120	+	28	-	1	-	0		1	-
SS 560	73		60.2	-	121	+	29	-	2		0		4	+
Pioneer 26R31	73		59.3	-	120	+	27	-	1	-	0		2	
SS 8641	73		62.5	+	121	+	32		1	-	0		0	-
Branson	72		59.5	-	116	-	30		3	+	0		3	+
MD00W389-08-4	72		61.4		117	-	31		1	-	0		5	+
Vigoro V9723	71	-	60.0	-	117	-	34	+	2		0		6	+
Dominion	71	-	60.6	-	122	+	29	-	1	-	0		4	+
SS 5205	71	-	61.3		118	-	27	-	1	-	0		1	-
NC05-19896	70	-	61.8		118	-	29	-	1	-	0		2	
VA06W-146	70	-	60.5	-	120	+	34	+	2		0		2	
SS 8302	69	-	61.5		120	+	31		1	-	0		7	+
VA07W-594	68	-	62.1	+	121	+	30		1	-	0		0	-
Massey	62	-	61.0		121	+	36	+	2		0		9	+
Average	77		61.4		119		31		2		0		2	
LSD (0.05)	6		0.5		1		2		1		1		1	
C.V.	5		0.5		1		4		---		---		---	

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages. A plus or minus sign indicates a performance significantly above or below the test average.

The 0-9 ratings indicate a genotype's response to disease or lodging, where 0 = highly resistant and 9 = highly susceptible.

Table 29. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern Shore AREC, Painter, VA, 2010 harvest.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Leaf Rust (0-9)		Barley Yellow Dwarf Virus (0-9)	
USG 3251	87	+	55.7	-	2		1	-
Pioneer 26R22	86	+	57.3		3	+	1	-
USG 3120	83	+	61.3		2		1	-
VA08W-92	83	+	62.2		1	-	1	-
VA08W-286	83	+	57.0		0	-	1	-
USG 3592	82	+	59.1		1	-	0	-
USG 3770	82	+	58.5		3	+	1	-
USG 3665	81	+	58.2		1	-	1	-
Shirley	80	+	56.0	-	0	-	1	-
SY 9978	80	+	56.7		0	-	1	-
SS 8700	79		57.8		4	+	1	-
GA 991336-6E9	79		60.1		0	-	1	-
VA06W-44	79		57.4		3	+	1	-
USG 3315	78		56.8		3	+	1	-
Jamestown	78		59.0		1	-	1	-
VA06W-412	78		60.4		2		1	-
Pioneer 26R31	77		58.3		1	-	3	+
VA05W-151	77		58.9		5	+	2	
SS 8641	77		60.8		0	-	1	-
Chesapeake	76		57.6		4	+	2	
VA05W-251	76		59.6		0	-	1	-
GA-031238-7E34	76		58.8		1	-	2	
VA08W-223	76		59.7		1	-	3	+
USG 3201	76		58.7		1	-	1	-
Progeny 117	75		59.7		4	+	2	
VA08W-193	75		59.4		1	-	1	-
NC-Cape Fear	75		60.7		1	-	2	
SS 5205	75		60.6		0	-	2	
VA08W-294	75		58.5		0	-	1	-
GA-001170-7E26	75		61.5		1	-	1	-
VA06W-194	75		58.1		0	-	2	
Vigoro V9723	75		59.2		4	+	1	-
Vigoro 9922	74		59.0		1	-	2	
VA05W-70	74		57.9		1	-	1	-
Progeny 166	74		59.2		2		1	-
Merl	74		61.1		3	+	1	-
USG 3555	74		58.9		3	+	1	-
SS 8404	74		56.0	-	2		1	-
VA08W-196	74		59.4		2		4	+
NC05-19896	74		60.2		0	-	1	-
Dyna-Gro 9012	73		61.2		2		1	-
COKER 9553	73		61.0		3	+	1	-
SS 8302	73		59.3		4	+	3	+
VA07W-415	73		59.1		1	-	2	
Branson	73		58.6		1	-	2	

Table 29. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern Shore AREC, Painter, VA, 2010 harvest, continued.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Leaf Rust (0-9)		Barley Yellow Dwarf Virus (0-9)	
Pioneer 26R15	73		59.3		2		2	
VA05W-139	73		60.7		0	-	1	-
VA08W-295	72		59.5		1	-	2	
SS 560	72		59.5		4	+	3	+
VA05W-168	72		59.7		0	-	1	-
Pioneer 26R20	72		57.2		1	-	2	
SS-MPV 57	71		56.5		4	+	2	
Panola	71		60.4		2		2	
SS 8600	71		60.1		0	-	2	
Pioneer 25R32	71		59.0		3	+	3	+
VA07W-569	71		61.3		4	+	2	
VA06W-93	71		58.3		1	-	2	
VA08W-176	71		59.8		1	-	2	
VA06W-392	71		59.4		1	-	1	-
Featherstone 176	71		57.8		3	+	3	+
Oakes	71		61.5		3	+	1	-
SS 520	71		58.8		1	-	3	+
VA05W-258	71		59.6		0	-	2	
Progeny 185	70		58.6		4	+	3	+
VA07W-138	70		60.7		1	-	1	-
Renwood 3434	70		59.8		1	-	4	+
SS 8309	70		58.1		2		2	
NC-Yadkin	69		60.3		0	-	1	-
VA05W-640	69		60.3		1	-	1	-
Coker 9804	69		58.9		2		1	-
Pioneer 26R12	68		59.6		2		2	
VA07W-594	68		59.6		1	-	1	-
VA08W-232	68		60.8		1	-	3	+
W1566	67		57.5		5	+	2	
VA06W-612	67		59.4		1	-	3	+
Dominion	67		59.5		2		3	+
VA06W-146	66	-	58.3		1	-	2	
VA06W-587	66	-	60.9		3	+	1	-
Massey	66	-	58.6		9	+	2	
VA07W-601	65	-	59.9		1	-	2	
VA06W-558	64	-	60.4		3	+	3	+
MD00W389-08-4	63	-	60.4		4	+	1	-
VA08W-165	61	-	61.8		0	-	2	
Average	73		59.2		2		2	
LSD (0.05)	7		3.2		1		1	
C.V.	7		3.9		---		---	

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages. A plus or minus sign indicates a performance significantly above or below the test average.

The 0-9 ratings indicate a genotype's response to disease or lodging, where 0 = highly resistant and 9 = highly susceptible.

Table 30. Summary of performance of entries in the Virginia Tech Wheat Test, Northern Piedmont AREC, Orange, VA, 2010 harvest.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)	
Vigoro V9723	92	+	58.8	-	120		44	+
Dyna-Gro 9012	92	+	60.1		121	+	37	
SS 8700	92	+	58.6	-	122	+	39	
USG 3251	92	+	59.2	-	122	+	39	
USG 3555	90	+	59.2	-	120		36	-
USG 3665	90	+	59.5		120		40	+
Pioneer 26R20	89	+	60.0		121	+	39	
USG 3592	88		60.3		120		39	
VA08W-223	88		60.0		120		39	
SS 520	88		59.2	-	120		41	+
VA05W-258	87		59.1	-	121	+	41	+
Pioneer 25R32	86		59.9		121	+	39	
USG 3201	86		60.3		121	+	36	-
Coker 9804	86		58.7	-	120		40	+
SS-MPV 57	86		58.4	-	121	+	40	+
W1566	86		58.1	-	121	+	42	+
Jamestown	85		60.9	+	120		37	
VA07W-138	85		61.1	+	121	+	37	
VA05W-70	85		61.5	+	121	+	37	
VA05W-139	85		59.6		122	+	35	-
USG 3315	85		59.3	-	121	+	38	
VA08W-92	84		62.5	+	120		40	+
Pioneer 26R12	84		61.1	+	121	+	38	
Pioneer 26R22	84		58.2	-	121	+	38	
Progeny 117	83		60.0		120		43	+
VA08W-232	83		60.5		119	-	39	
VA07W-569	83		61.3	+	121	+	40	+
Chesapeake	83		60.3		120		37	
GA 991336-6E9	83		61.0	+	121	+	40	+
Shirley	83		58.0	-	121	+	34	-
Merl	83		60.4		120		36	-
VA05W-151	83		62.1	+	120		37	
Progeny 185	83		59.5		119	-	41	+
Panola	82		59.3	-	120		40	+
VA08W-295	82		61.5	+	120		37	
SY 9978	82		59.2	-	121	+	42	+
Pioneer 26R15	82		58.9	-	121	+	39	
COKER 9553	81		61.3	+	119	-	41	+
Progeny 166	81		59.8		120		44	+
Branson	81		59.0	-	119	-	37	
USG 3120	81		61.0	+	119	-	40	+
USG 3770	81		60.1		119	-	43	+
VA06W-612	81		60.0		121	+	36	-
SS 5205	81		60.2		120		33	-
VA06W-587	80		61.4	+	119	-	40	+
VA08W-294	80		60.0		121	+	38	

Table 30. Summary of performance of entries in the Virginia Tech Wheat Test, Northern Piedmont AREC, Orange, VA, 2010 harvest, continued.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)	
VA07W-415	80		58.9	-	121	+	40	+
Renwood 3434	80		59.0	-	120		34	-
Featherstone 176	80		59.6		119	-	40	+
VA05W-168	80		62.3	+	120		37	
VA06W-194	79		58.3	-	121	+	35	-
VA07W-601	79		60.5		120		37	
SS 8600	79		60.4		120		38	
VA05W-251	79		59.0	-	120		36	-
SS 8302	79		60.4		121	+	39	
SS 8309	78		59.5		120		39	
VA08W-286	78		59.5		122	+	34	-
VA06W-392	78		59.4		121	+	37	
VA08W-193	78		59.0	-	121	+	35	-
SS 560	78		59.2	-	121	+	35	-
VA06W-44	77		60.6		120		35	-
VA08W-176	77		61.6	+	122	+	37	
VA08W-196	77		59.7		120		38	
Vigoro 9922	77		60.2		120		38	
VA07W-594	77		60.0		121	+	37	
SS 8404	77		61.1	+	121	+	35	-
NC-Cape Fear	77		61.2	+	119	-	37	
VA06W-93	77		60.8	+	120		34	-
VA06W-558	77		61.5	+	120		39	
VA06W-146	76		59.1	-	122	+	40	+
NC-Yadkin	75		59.6		120		36	-
VA06W-412	75		61.1	+	121	+	36	-
Oakes	74		59.9		121	+	37	
GA-031238-7E34	74		58.5	-	122	+	34	-
NC05-19896	74		59.7		121	+	35	-
VA08W-165	74		61.9	+	122	+	37	
MD00W389-08-4	73	-	60.7	+	120		37	
Massey	72	-	59.9		121	+	45	+
SS 8641	72	-	60.9	+	121	+	38	
Pioneer 26R31	71	-	58.5	-	121	+	33	-
VA05W-640	71	-	59.6		121	+	38	
GA-001170-7E26	70	-	60.7	+	122	+	36	-
Dominion	68	-	58.8	-	122	+	34	-
Average	81		60.0		120		38	
LSD (0.05)	8		0.7		1		2	
C.V.	7		0.8		0		3	

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages. A plus or minus sign indicates a performance significantly above or below the test average.

Table 31. Summary of performance of entries in the Virginia Tech Wheat Test, Kentland farm, Blacksburg, VA, 2010 harvest.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)		Lodging (0-9)		Powdery Mildew (0-9)		Leaf Rust (0-9)		Barley Yellow Dwarf Virus (0-9)	
VA05W-251	114	+	62.1		124	-	33	-	5	+	2		1	-	2	
Pioneer 26R20	113	+	62.7		126	+	37	+	2		1	-	2		1	-
VA08W-223	112	+	62.5		123	-	35		6	+	1	-	3		3	+
VA05W-151	111	+	64.4	+	123	-	35		4	+	2		3		2	
USG 3120	110	+	63.1	+	121	-	36		3		1	-	2		1	-
SS 520	109	+	61.4	-	123	-	37	+	2		3	+	5	+	3	+
SS 560	109	+	60.9	-	126	+	37	+	2		2		2		4	+
SS 8641	108		62.7		124	-	37	+	0	-	1	-	1	-	3	+
SS-MPV 57	108		62.1		126	+	40	+	1		2		2		3	+
VA08W-294	108		62.9	+	125		35		1		1	-	1	-	1	-
VA06W-93	108		63.2	+	124	-	33	-	1		4	+	2		2	
VA06W-392	107		62.1		124	-	35		4	+	2		1	-	2	
GA 991336-6E9	107		62.1		123	-	36		2		1	-	3		3	+
Vigoro V9723	107		61.5	-	124	-	40	+	2		4	+	4		1	-
Shirley	106		60.2	-	126	+	34		0	-	1	-	0	-	1	-
VA07W-415	106		62.1		126	+	37	+	3		1	-	1	-	3	+
VA08W-92	106		64.0	+	122	-	36		4	+	2		2		2	
Branson	106		61.3	-	124	-	34		2		2		6	+	2	
Dyna-Gro 9012	106		63.0	+	125		34		0	-	2		2		1	-
USG 3555	106		60.8	-	124	-	33	-	0	-	1	-	5	+	2	
USG 3665	105		62.4		124	-	37	+	2		2		6	+	2	
VA08W-295	105		63.1	+	124	-	36		3		3	+	2		1	-
VA05W-139	105		62.3		125		35		0	-	1	-	2		3	+
Featherstone 176	105		61.5	-	124	-	36		6	+	1	-	7	+	2	
VA08W-232	104		63.1	+	121	-	36		5	+	2		2		2	
SS 5205	104		63.0	+	125		31	-	2		1	-	1	-	2	
Chesapeake	104		63.4	+	125		35		2		1	-	3		2	
VA08W-193	104		61.8	-	123	-	34		2		2		3		4	+
GA-031238-7E34	104		62.1		125		32	-	0	-	1	-	1	-	2	
VA05W-258	104		61.1	-	126	+	37	+	4	+	2		6	+	2	
Merl	104		62.6		125		36		0	-	1	-	4		5	+
VA06W-194	104		62.1		125		35		5	+	2		1	-	2	
GA-001170-7E26	104		63.4	+	124	-	35		1		1	-	0	-	2	
Vigoro 9922	104		61.7	-	126	+	38	+	0	-	1	-	3		2	
VA06W-44	104		62.7		123	-	37	+	2		3	+	4		2	
USG 3592	103		62.1		124	-	36		1		4	+	6	+	2	
Pioneer 26R15	103		61.7	-	125		38	+	0	-	2		2		2	
USG 3201	103		62.7		125		35		0	-	2		2		1	-
SS 8600	103		62.0		125		36		0	-	1	-	4		1	-
VA08W-196	102		61.9		122	-	34		4	+	2		2		4	+
VA05W-70	102		63.2	+	124	-	33	-	1		1	-	2		2	
W1566	102		61.3	-	126	+	40	+	0	-	2		5	+	2	
VA08W-165	101		63.3	+	126	+	36		2		2		0	-	2	
Jamestown	101		63.0	+	123	-	33	-	1		2		4		1	-
NC-Cape Fear	101		63.0	+	123	-	34		6	+	2		3		2	
VA06W-412	100		62.7		125		36		0	-	1	-	2		1	-

Table 31. Summary of performance of entries in the Virginia Tech Wheat Test, Kentland farm, Blacksburg, VA, 2010 harvest, continued.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)		Lodging (0-9)		Powdery Mildew (0-9)		Leaf Rust (0-9)		Barley Yellow Dwarf Virus (0-9)	
COKER 9553	100		64.0	+	123	-	37	+	1		1	-	4		1	-
Renwood 3434	100		60.5	-	126	+	33	-	1		1	-	5	+	3	+
NC-Yadkin	99		61.3	-	125		36		4	+	2		2		2	
VA07W-601	99		62.3		126	+	36		3		2		5	+	1	-
Pioneer 25R32	99		61.9		126	+	34		2		1	-	5	+	1	-
VA06W-146	99		61.0	-	126	+	38	+	4	+	1	-	5	+	3	+
VA05W-168	99		64.4	+	124	-	34		3		1	-	3		2	
VA06W-612	98		63.1	+	126	+	34		4	+	2		2		3	+
Progeny 185	98		61.2	-	124	-	38	+	0	-	5	+	6	+	1	-
USG 3315	98		62.0		126	+	35		3		2		4		1	-
SY 9978	98		61.0	-	125		37	+	5	+	1	-	5	+	1	-
Progeny 166	98		62.1		125		42	+	2		9	+	4		2	
VA07W-594	98		62.8	+	126	+	37	+	3		1	-	2		1	-
VA05W-640	98		62.9	+	124	-	35		2		2		4		2	
Progeny 117	98		61.9		122	-	36		5	+	5	+	4		1	-
SS 8404	97		63.5	+	125		34		0	-	4	+	3		1	-
USG 3770	97		62.0		122	-	36		5	+	5	+	5	+	1	-
NC05-19896	96		62.9	+	125		34		3		2		2		2	
VA06W-587	96		62.9	+	124	-	36		4	+	1	-	7	+	1	-
VA08W-176	96		63.9	+	126	+	36		2		1	-	2		3	+
Oakes	96		63.0	+	126	+	36		3		5	+	4		1	-
VA08W-286	96		61.3	-	127	+	33	-	3		1	-	2		2	
VA07W-138	96		62.9	+	126	+	35		1		3	+	3		2	
VA06W-558	96		64.0	+	124	-	37	+	2		6	+	2		4	+
USG 3251	95	-	61.6	-	127	+	36		2		2		4		1	-
Pioneer 26R22	95	-	61.2	-	126	+	37	+	1		2		6	+	2	
Dominion	95	-	62.0		126	+	33	-	1		1	-	4		3	+
VA07W-569	94	-	62.7		126	+	37	+	8	+	3	+	5	+	1	-
Pioneer 26R12	94	-	63.6	+	125		36		0	-	2		3		2	
SS 8700	94	-	59.9	-	127	+	35		2		2		5	+	0	-
Pioneer 26R31	94	-	60.6	-	123	-	33	-	0	-	2		5	+	4	+
SS 8309	94	-	62.0		125		37	+	0	-	2		3		2	
Coker 9804	93	-	61.5	-	125		35		1		1	-	7	+	2	
Panola	93	-	60.7	-	124	-	34		2		2		7	+	2	
SS 8302	91	-	62.5		125		36		0	-	3	+	7	+	4	+
MD00W389-08-4	88	-	62.6		124	-	34		0	-	2		6	+	3	+
Massey	83	-	61.4	-	123	-	37	+	4	+	2		9	+	2	
Average	102		62.3		125		35		2		2		3		2	
LSD (0.05)	7		0.5		1		2		2		1		2		1	
C.V.	5		0.6		0		3		---		---		---		---	

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages. A plus or minus sign indicates a performance significantly above or below the test average.

The 0-9 ratings indicate a genotype's response to disease or lodging, where 0 = highly resistant and 9 = highly susceptible.

Table 32. Summary of performance of entries in the Virginia Tech Wheat Test, planted No-till at Shenandoah Valley in Augusta County, VA, 2010 harvest.

Line	Yield (Bu/a)		Test Weight (Lb/bu)	
VA05W-258	91	+	61.0	
Renwood 3434	89	+	60.1	-
Pioneer 26R12	86	+	62.6	+
Pioneer 26R15	86	+	60.4	-
Pioneer 26R20	86	+	61.6	
Progeny 117	85		61.7	
VA05W-151	85		63.2	+
VA07W-415	85		61.2	
Pioneer 26R22	84		60.4	-
VA06W-44	84		62.0	
Branson	84		60.3	-
USG 3315	84		62.0	
W1566	84		60.0	-
Oakes	83		63.1	+
Dyna-Gro 9012	81		62.0	
Chesapeake	80		62.1	
USG 3665	80		61.1	
Progeny 166	80		61.6	
USG 3201	80		61.7	
VA08W-294	80		62.0	
SS 8600	80		61.6	
Vigoro 9922	80		61.3	
SS 8700	80		59.0	-
VA06W-558	79		62.9	+
Dominion	79		59.8	-
USG 3592	79		61.0	
SY 9978	79		60.3	-
Shirley	78		59.7	-
SS 8641	77		61.4	
Pioneer 26R31	77		60.0	-
VA08W-196	77		61.3	
GA-001170-7E26	77		62.1	
VA05W-640	77		63.0	+
Featherstone 176	77		61.1	
SS-MPV 57	77		60.4	-
Massey	76		61.3	
Progeny 185	76		60.8	
VA06W-93	76		62.8	+
NC05-19896	76		62.3	+
Jamestown	76		63.5	+
VA08W-295	76		62.8	+
Merl	75		62.1	
VA06W-146	75		60.6	-
SS 8302	75		61.7	
SS 8309	75		61.4	
VA05W-251	75		60.8	

Table 32. Summary of performance of entries in the Virginia Tech Wheat Test, planted No-till at Shenandoah Valley in Augusta County, VA, 2010 harvest, continued.

Line	Yield (Bu/a)		Test Weight (Lb/bu)	
NC-Cape Fear	75		62.8	+
NC-Yadkin	75		60.6	-
VA05W-70	74		62.7	+
COKER 9553	73		62.7	+
SS 560	73		59.9	-
VA08W-223	73		61.1	
SS 8404	73		62.4	+
VA08W-193	73		61.1	
Panola	73		60.3	-
USG 3251	73		60.5	-
VA07W-601	73		61.5	
VA08W-232	73		62.7	+
VA06W-412	72		62.4	+
VA08W-92	72		64.1	+
VA07W-569	72		61.9	
VA07W-594	72		62.1	
Pioneer 25R32	72		60.9	
GA-031238-7E34	71		60.4	-
Coker 9804	71		60.6	-
VA06W-612	70		61.5	
USG 3555	70		60.0	-
VA08W-176	70		62.7	+
VA07W-138	69		61.6	
MD00W389-08-4	69		62.1	
VA08W-165	69		63.1	+
SS 520	69		60.8	
VA06W-392	69		61.4	
VA08W-286	69		59.8	-
USG 3770	68		61.0	
VA05W-139	68		61.4	
USG 3120	68		62.8	+
VA06W-587	67		62.8	+
VA05W-168	67		63.9	+
Vigoro V9723	67		60.2	-
SS 5205	67		61.0	
GA 991336-6E9	63	-	62.2	
VA06W-194	63	-	60.0	-
Average	75		61.5	
LSD (0.05)	11		0.8	
C.V.	10		0.8	

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages. A plus or minus sign indicates a performance significantly above or below the test average.

Table 33. Summary of performance of entries in the Virginia Tech Wheat Test, planted No-Till at Tidewater AREC, Holland, VA, 2010 harvest.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Lodging (0-9)		Barley Yellow Dwarf Virus (0-9)	
VA05W-151	74	+	62.4		1	+	5	
VA08W-92	73	+	63.0		0		3	
USG 3251	71	+	59.8		0		2	-
Oakes	71	+	60.9		0		2	-
USG 3555	70	+	57.1		0		1	-
VA08W-286	70	+	59.2		0		3	
Pioneer 26R22	70	+	59.4		0		4	
SS 8700	70	+	59.3		0		1	-
Shirley	69	+	54.9	-	0		3	
Dyna-Gro 9012	69	+	60.4		0		3	
SS 560	69	+	60.2		0		6	+
VA06W-44	69	+	59.7		0		5	
Progeny 185	68		60.3		0		4	
VA05W-251	68		59.8		0		3	
VA06W-412	68		57.2		0		3	
USG 3120	68		58.3		0		1	-
VA08W-176	68		61.6		0		3	
SS 8404	67		60.5		0		1	-
Merl	67		61.9		0		2	-
GA 991336-6E9	67		60.4		0		3	
Renwood 3434	66		60.0		0		5	
SS 5205	66		60.8		0		5	
Chesapeake	66		61.2		0		4	
VA07W-138	66		61.6		0		4	
GA-001170-7E26	66		61.8		0		3	
SY 9978	66		57.6		1	+	3	
USG 3665	66		60.3		0		3	
USG 3592	66		60.6		0		3	
USG 3315	66		60.6		0		2	-
VA05W-258	65		59.5		0		3	
Progeny 117	65		59.0		1	+	5	
USG 3201	64		60.7		0		3	
Coker 9804	64		60.6		0		3	
Pioneer 26R31	64		56.0	-	0		9	+
VA08W-295	64		61.1		0		3	
VA08W-196	64		60.1		0		6	+
Pioneer 26R15	64		56.7		0		4	
Branson	63		59.4		0		2	-
Vigoro V9723	63		57.8		0		4	
VA05W-70	63		61.4		0		5	
VA08W-193	63		58.3		0		4	
USG 3770	63		60.3		0		3	
VA05W-640	63		61.6		0		2	-
W1566	62		59.3		0		3	
VA05W-168	62		63.4		1	+	3	
VA06W-612	62		59.9		0		8	+

Table 33. Summary of performance of entries in the Virginia Tech Wheat Test, planted No-Till at Tidewater AREC, Holland, VA, 2010 harvest, continued.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Lodging (0-9)		Barley Yellow Dwarf Virus (0-9)	
VA08W-165	62		63.0		0		3	
VA05W-139	62		58.9		0		8	+
NC-Yadkin	62		56.1	-	0		2	-
VA06W-93	62		61.8		0		7	+
SS 520	62		59.9		0		4	
Pioneer 25R32	61		59.7		0		4	
SS 8600	61		61.2		0		2	-
SS-MPV 57	61		59.1		0		5	
VA06W-587	61		62.2		0		2	-
Vigoro 9922	61		59.6		0		2	-
VA07W-601	61		61.0		0		5	
MD00W389-08-4	61		56.5		0		4	
NC-Cape Fear	61		60.2		0		5	
Jamestown	61		58.4		0		1	-
NC05-19896	60		61.7		0		4	
VA07W-569	60		61.9		1	+	3	
VA06W-392	60		60.1		0		6	+
SS 8302	60		60.5		0		5	
Featherstone 176	60		59.7		0		4	
Pioneer 26R12	60		62.1		0		2	-
Panola	59		60.6		0		2	-
Dominion	59		60.0		0		9	+
VA06W-194	59		60.8		0		3	
VA08W-294	59		60.1		0		3	
VA07W-594	59		61.5		0		2	-
VA08W-232	59		60.4		0		4	
VA07W-415	59		59.0		0		4	
VA06W-146	58		60.6		0		5	
SS 8309	58		60.6		0		4	
COKER 9553	58		62.6		0		2	-
Progeny 166	57	-	61.0		0		4	
SS 8641	57	-	60.7		0		7	+
VA06W-558	56	-	60.2		0		5	
Pioneer 26R20	56	-	60.8		0		2	-
GA-031238-7E34	56	-	59.9		0		6	+
VA08W-223	55	-	60.6		0		7	+
Massey	51	-	59.5		0		6	+
Average	63		60.1		0		4	
LSD (0.05)	6		3.8		1		2	
C.V.	7		4.3		---		---	

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages. A plus or minus sign indicates a performance significantly above or below the test average.

The 0-9 ratings indicate a genotype's response to disease or lodging, where 0 = highly resistant and 9 = highly susceptible.

Table 34. Summary of performance of entries in the Virginia Tech V
Test planted No-Till at Warsaw, 2010 harvest.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)		Lodging (0-9)		Leaf Rust (0-9)	
Pioneer 26R20	92	+	61.8		121	+	30		1		2	+
Shirley	91	+	60.3	-	121	+	27	-	0	-	0	-
VA05W-151	90	+	62.8	+	119	-	30		1		1	
VA08W-92	88		63.4	+	116	-	29		1		1	
Dominion	88		61.7		122	+	28	-	1		1	
Pioneer 25R32	88		61.7		121	+	31		1		2	+
Pioneer 26R15	87		60.7	-	120		32	+	0	-	2	+
VA08W-176	87		63.6	+	122	+	30		0	-	0	-
VA08W-196	87		61.6		117	-	30		1		1	
SS 8700	87		59.9	-	122	+	31		0	-	3	+
USG 3251	86		60.7	-	122	+	30		0	-	1	
USG 3120	86		62.8	+	116	-	32	+	0	-	1	
USG 3665	86		61.1	-	121	+	31		1		2	+
SS 8600	86		61.6		119	-	31		0	-	3	+
VA05W-251	86		61.0	-	121	+	28	-	1		0	-
VA05W-70	86		63.3	+	121	+	29		0	-	0	-
Vigoro 9922	86		61.6		120		32	+	0	-	3	+
Vigoro V9723	86		60.5	-	118	-	34	+	1		3	+
Branson	86		59.9	-	117	-	28	-	1		1	
GA 991336-6E9	85		62.9	+	119	-	31		1		0	-
VA08W-286	85		60.9	-	122	+	26	-	1		0	-
VA08W-223	85		62.1		117	-	31		1		1	
SS 8309	85		61.9		121	+	31		1		2	+
Oakes	85		62.9	+	121	+	30		1		2	+
Pioneer 26R12	85		63.2	+	122	+	31		0	-	1	
VA06W-93	84		63.0	+	119	-	27	-	1		0	-
VA07W-415	84		62.1		122	+	30		1		1	
W1566	84		60.2	-	121	+	33	+	1		3	+
SS-MPV 57	84		61.0	-	122	+	32	+	0	-	3	+
Chesapeake	84		61.7		117	-	28	-	1		3	+
Renwood 3434	84		60.5	-	121	+	27	-	1		1	
VA07W-569	84		63.7	+	122	+	31		2	+	2	+
VA08W-294	83		62.1		120		29		1		0	-
VA05W-139	83		61.9		122	+	29		0	-	1	
Coker 9804	83		60.6	-	119	-	31		1		3	+
Pioneer 26R22	83		60.3	-	120		31		1		2	+
USG 3201	83		62.3	+	118	-	29		0	-	2	+
USG 3592	83		61.2	-	119	-	30		1		2	+
VA07W-601	83		62.5	+	118	-	29		1		2	+
VA06W-146	83		61.4		121	+	34	+	1		1	
GA-031238-7E34	83		61.4		121	+	27	-	1		1	
USG 3770	83		60.9	-	117	-	33	+	2	+	2	+
Pioneer 26R31	83		60.6	-	120		26	-	0	-	3	+
Progeny 117	83		60.9	-	116	-	33	+	2	+	2	+
USG 3555	82		60.9	-	120		29		1		3	+
NC-Cape Fear	82		62.0		116	-	29		1		0	-

Table 34. Summary of performance of entries in the Virginia Tech Wheat Test planted No-Till at Warsaw, 2010 harvest, continued.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Height (In)		Lodging (0-9)		Leaf Rust (0-9)	
Merl	82		62.1		120		29		0	-	2	+
VA06W-587	82		63.3	+	117	-	30		1		2	+
VA05W-258	82		61.6		122	+	32	+	1		1	
VA08W-232	82		62.4	+	115	-	28	-	1		0	-
GA-001170-7E26	81		63.1	+	121	+	29		0	-	0	-
USG 3315	81		61.5		121	+	29		0	-	2	+
SY 9978	81		60.6	-	119	-	33	+	1		2	+
SS 5205	81		61.4		119	-	28	-	1		0	-
VA06W-44	81		61.9		117	-	27	-	1		1	
VA08W-193	81		61.6		122	+	27	-	0	-	0	-
Progeny 166	81		61.4		118	-	34	+	2	+	2	+
VA06W-392	81		61.8		122	+	30		1		0	-
VA07W-138	80		61.9		122	+	29		0	-	1	
NC-Yadkin	80		61.0	-	119	-	29		0	-	1	
SS 520	80		60.2	-	115	-	30		1		2	+
Panola	80		60.3	-	119	-	30		1		2	+
SS 560	80		60.7	-	122	+	29		1		3	+
NC05-19896	80		62.1		120		28	-	1		3	+
MD00W389-08-4	80		61.7		118	-	29		0	-	3	+
VA06W-412	80		63.0	+	121	+	29		0	-	0	-
VA05W-640	80		62.5	+	119	-	30		1		1	
VA06W-558	79		62.5	+	120		30		1		1	
COKER 9553	79		62.8	+	117	-	31		1		1	
VA08W-295	79		62.8	+	121	+	31		1		0	-
Dyna-Gro 9012	79		62.4	+	119	-	29		1		1	
Progeny 185	79		60.9	-	117	-	30		1		2	+
VA07W-594	79		62.8	+	122	+	29		1		0	-
Jamestown	78		61.9		115	-	28	-	0	-	1	
Featherstone 17	77		61.4		117	-	31		1		3	+
VA05W-168	77		64.0	+	117	-	27	-	2	+	0	-
SS 8302	77		62.2		121	+	32	+	0	-	3	+
VA06W-194	77		61.3	-	120		29		1		0	-
SS 8404	77		62.5	+	121	+	28	-	0	-	1	
SS 8641	76		62.7	+	121	+	31		0	-	0	-
VA08W-165	75	-	63.6	+	122	+	29		1		0	-
VA06W-612	74	-	61.5		121	+	28	-	1		1	
Massey	68	-	61.8		121	+	33	+	1		5	+
Average	82		61.8		120		30		1		1	
LSD (0.05)	7		0.5		1		2		1		1	
C.V.	6		0.5		1		5		---		---	

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages. A plus or minus sign indicates a performance significantly above or below the test average.

The 0-9 ratings indicate a genotype's response to disease or lodging, where 0 = highly resistant and 9 = highly susceptible.

Section 4: Milling and Baking Quality

Milling and baking quality of wheat lines grown in the 2008-2009 Virginia State Wheat Test were assessed by the USDA-ARS Soft Wheat Quality Laboratory (SWQL) in Wooster, Ohio (Table 35). Quality evaluations were conducted using 500 gram grain samples from wheat lines grown at the Painter, VA test site. Data for a single location and year are not definitive of a given line's milling and baking quality as wheat quality varies from location to location and from year to year. Mean quality data over two (Table 36) and three years (Table 37) is also included to provided a more accurate estimate of quality for a given wheat line. Milling and Baking Quality Scores and the other individual quality parameters provide information on a wheat lines overall end use quality and its suitability for use in manufacturing a vast array of products requiring flour with specific and diverse quality characteristics.

For the 2009 crop, milling (Quadrumat mill) and baking quality of wheat lines were compared to those of the check cultivar Shirley. On the basis of two independent Allis-Chalmers milling quality evaluations conducted by the SWQL, Shirley has a historical milling quality score of 69.1 and ranks 172 out of 835 wheat cultivars evaluated to date. For the 2009 crop, Shirley received a milling quality score of 75.1. Wheat lines producing flour yields greater than 70.0% is desirable. The Soft Wheat Quality Lab adopted a new sugar snap cookie method in 2008, which was used to assess pastry baking quality of the 2008 and 2009 samples. With the new method, diameters of cookies generally will be 0.7 to 1.2 cm larger than with the old method. The increase in cookie diameters of cultivars such as Tribute, having strong protein gluten strength, will be larger relative to the increase observed in traditional high quality pastry cultivars with weak gluten strength. Lines producing soft textured flour (softness equivalent score greater than 54%) and cookies having diameters of 18.75 cm or larger would be considered to have good pastry quality.

For the 2009 crop, milling quality scores of released cultivars ranged from 100.2 for GA991336-6E9 to 52.1 for USG 3725 and Coker 9804 with 26 cultivars having similar or higher scores than Shirley. Flour yields among the cultivars ranged from a high of 72.5% for GA991336-6E9 to a low of 67.6% for USG 3725, Coker 9804, Coker 9553, and Panola. Cookie diameters of released cultivars ranged from a high of 21.38 cm for Branson to a low of 16.64 cm for Pioneer variety 25R32.

Among released cultivars, flour protein concentration varied from 5.20% for Pioneer variety 25R32 to 8.23% for USG 3342. Protein quality, specifically gluten strength, based on Lactic Acid Solvent Retention Capacity varied from a high of 141.5% for Magnolia to a low of 99.4% for SS-MPV57. Lines having lower Lactic Acid scores would produce a dough having weak gluten strength and more suitable for pastry products such as cookies, while lines having Lactic Acid scores higher than Tribute (123.9%) would produce a dough having stronger gluten strength and more suitable for crackers or certain bread products.

Table 35. Milling and baking quality of entries in the Virginia Tech Wheat Test based on evaluation of the 2009 harvest.

ENTRY	Milling Quality Score		Baking Quality Score		Straight Grade Flour Yield, %	Softness Equivalent %	Flour Protein %	Lactic Acid SRC %	Cookie Diameter CM.
Progeny 130	94.3	A	93.4	A	71.9	58.4	7.42	131.9	20.0
Progeny 185	91.3	A	85.2	A	71.6	59.8	6.61	115.5	19.7
Progeny 166	89.9	A	80.9	B	71.5	61.7	6.84	114.3	19.6
Massey	87.0	A	74.6	B	71.2	60.1	7.47	118.5	19.4
Baldwin	90.8	A	67.3	C	71.6	59.9	6.66	111.2	19.1
GA-991336-6E9	100.2	A	64.3	C	72.5	53.3	6.82	121.5	19.0
USG 3190	85.3	A	63.5	C	71.0	54.5	7.39	108.4	19.0
Branson	75.4	B	134.3	A	70.0	62.7	7.25	131.3	21.4
SS 8309	82.3	B	98.6	A	70.7	64.9	5.93	112.7	20.2
Shirley	76.0	B	96.4	A	70.0	57.7	6.55	102.3	20.1
Red Ruby	79.8	B	81.4	B	70.4	64.9	6.63	117.7	19.6
USG 3592	77.8	B	80.9	B	70.2	59.7	6.50	132.7	19.6
Oakes	77.6	B	80.1	B	70.2	57.5	5.56	120.1	19.5
Vigoro V9723	83.4	B	80.0	B	70.8	59.6	6.56	121.8	19.5
SS 5205	77.9	B	79.5	B	70.2	62.4	7.15	132.1	19.5
USG 3665	78.7	B	75.3	B	70.3	57.4	6.98	114.8	19.4
SS 8302	71.6	B	74.8	B	69.6	62.7	7.06	119.5	19.4
Progeny 117	81.7	B	72.9	B	70.6	57.6	6.99	126.6	19.3
SS 8404	76.0	B	72.7	B	70.0	55.3	6.93	108.1	19.3
SS-MPV 57	82.9	B	72.3	B	70.7	55.5	7.22	99.4	19.3
AGS 2035	83.7	B	72.2	B	70.8	54.9	7.20	113.7	19.3
Pioneer variety 26R15	80.8	B	71.2	B	70.5	62.6	7.56	134.4	19.2
SS 548	83.4	B	70.3	B	70.8	59.3	6.89	127.0	19.2
SS 560	71.1	B	67.4	C	69.5	59.4	7.07	120.7	19.1
Pioneer variety 26R31	78.7	B	65.1	C	70.3	51.6	6.99	115.8	19.0
Magnolia	81.5	B	59.5	D	70.6	59.0	7.62	141.5	18.9
Merl	78.6	B	59.4	D	70.3	55.0	7.33	111.8	18.9
SS 520	70.0	B	57.0	D	69.4	51.6	7.21	114.5	18.8
Dominion	82.2	B	54.8	D	70.7	54.3	6.88	115.3	18.7
Tribute	71.3	B	54.4	D	69.5	52.3	6.70	123.9	18.7
USG 3120	83.4	B	51.0	D	70.8	52.5	7.17	104.8	18.6
Pioneer 25R32	79.7	B	-6.1	F	70.4	50.1	5.20	121.2	16.6
Renwood 3434	64.6	C	79.9	B	68.8	59.5	6.93	115.1	19.5
USG 3555	66.8	C	72.2	B	69.1	54.6	7.58	118.8	19.3
Vigoro 9922	61.1	C	71.7	B	68.5	61.7	6.14	121.9	19.3
Featherstone 176	65.3	C	70.5	B	68.9	54.3	7.31	130.7	19.2
Sisson	69.1	C	69.1	C	69.3	54.1	6.91	104.1	19.2
Vigoro V9713	68.0	C	66.8	C	69.2	58.0	7.40	122.8	19.1
Pioneer variety 26R12	66.5	C	63.5	C	69.0	58.2	6.89	120.0	19.0
NC-Yadkin	66.3	C	61.7	C	69.0	53.5	7.39	125.9	18.9
Pioneer 26R20	65.1	C	61.1	C	68.9	60.8	5.75	125.5	18.9
SS 8641	63.2	C	57.4	D	68.7	55.0	7.51	128.2	18.8
Coker 9436	66.7	C	55.0	D	69.1	54.3	7.43	102.9	18.7
Jamestown	63.1	C	46.9	E	68.7	57.1	7.31	129.4	18.4
USG 3315	67.4	C	44.8	E	69.1	59.0	7.25	123.6	18.4

Table 35. Milling and baking quality of entries in the Virginia Tech Wheat Test based on evaluation of the 2009 harvest, continued.

ENTRY	Milling Quality Score		Baking Quality Score		Straight Grade Flour Yield, %	Softness Equivalent %	Flour Protein %	Lactic Acid SRC %	Cookie Diameter CM.
Progeny 136	54.2	D	81.0	B	67.8	64.6	6.04	124.0	19.6
USG 3725	52.1	D	75.4	B	67.6	64.5	6.36	123.2	19.4
Chesapeake	54.4	D	60.7	C	67.8	56.2	7.26	110.5	18.9
Coker 9553	52.2	D	60.1	C	67.6	56.7	7.79	122.8	18.9
Panola	52.6	D	54.9	D	67.6	54.7	6.85	121.6	18.7
USG 3342	59.2	D	48.6	E	68.3	58.3	8.23	103.3	18.5
VA05W-258	57.4	D	47.0	E	68.1	56.7	7.08	128.6	18.4
USG 3209	58.9	D	46.6	E	68.3	56.2	6.78	118.2	18.4
Coker 9804	52.1	D	24.8	F	67.6	54.7	6.66	119.2	17.7
Oglethorpe	58.2	D	4.9	F	68.2	53.0	6.92	129.9	17.0
Experimental Lines									
VA05W-358	92.5	A	73.5	B	71.7	56.8	6.71	93.2	19.3
VA07W-600	74.5	B	83.2	B	69.9	60.6	6.71	126.9	19.7
VA06W-423	84.2	B	73.3	B	70.9	60.4	6.87	142.2	19.3
VA07W-415	80.8	B	68.5	C	70.5	56.0	7.00	122.2	19.2
VA05W-640	78.9	B	59.9	D	70.3	57.5	7.54	141.4	18.9
VA04W-92	61.6	C	80.4	B	68.5	59.3	6.93	120.1	19.6
VA06W-392	64.3	C	79.0	B	68.8	57.7	6.89	109.1	19.5
VA07W-643	64.8	C	69.1	C	68.9	54.3	6.97	120.0	19.2
VA06W-587	70.0	C	68.1	C	69.4	57.6	6.45	117.1	19.1
VA05W-151	68.5	C	67.7	C	69.3	57.2	7.20	135.5	19.1
VA06W-412	63.0	C	64.4	C	68.7	58.9	7.11	125.7	19.0
VA06W-194	66.5	C	59.1	D	69.0	59.7	7.30	136.6	18.8
VA05W-168	69.3	C	46.2	E	69.3	55.0	6.86	124.9	18.4
VA07W-607	59.8	D	75.5	B	68.4	55.9	7.19	121.6	19.4
VA06W-93	54.3	D	72.3	B	67.8	56.7	6.94	118.9	19.3
VA06W-558	59.3	D	65.5	C	68.3	55.8	6.86	124.9	19.1
VA05W-251	59.0	D	52.9	D	68.3	52.1	6.94	104.0	18.6
VA05W-139	52.5	D	30.2	E	67.6	54.2	7.27	146.1	17.9
VA07W-138	49.7	E	31.7	E	67.3	52.0	8.05	133.6	17.9
Average	71.4		65.5		69.55	57.32	6.97	120.8	19.06

Table 36. Milling and baking quality of entries in the Virginia Tech Wheat Test based on evaluation of the 2008 and 2009 harvests.

ENTRY	Milling Quality Score		Baking Quality Score		Softness Equivalent Score		MICRO T.W. LB/BU	Flour Yield %	Softness Equivalent %	Flour Protein %	Cookie Diameter CM.	TOP Grain
Branson	74.2	B	102.4	A	85.5	A	60.7	71.0	62.3	7.8	20.09	7.0
SS 8309	78.0	B	98.9	A	92.9	A	60.6	71.4	65.1	6.8	19.92	6.0
SS 5205	75.4	B	94.3	A	83.2	B	61.6	71.1	61.5	7.7	19.72	7.5
Shirley	73.1	B	88.4	A	73.8	B	61.0	70.7	58.0	7.3	19.59	6.5
SS 8302	71.5	B	80.3	B	86.0	A	61.2	70.7	62.5	7.6	19.32	5.5
Pioneer 26R15	77.6	B	79.6	B	84.5	B	60.7	71.4	62.0	8.0	19.26	6.5
USG 3665	77.4	B	78.8	B	76.9	B	60.9	71.5	59.0	7.6	19.27	8.0
SS 8404	73.8	B	78.4	B	66.6	C	61.6	70.9	55.3	7.7	19.25	5.0
SS MPV-57	79.7	B	77.2	B	66.9	C	60.7	71.7	55.4	7.9	19.22	5.0
Red Ruby	76.0	B	76.1	B	88.7	A	60.7	71.1	63.6	7.2	19.20	7.0
Sisson	70.9	B	73.4	B	68.2	C	61.7	70.6	55.8	7.6	19.10	7.0
SS 520	71.6	B	62.6	C	62.4	C	61.0	70.7	53.6	7.8	18.76	7.5
Merl	76.6	B	60.9	C	69.4	C	62.6	71.3	56.2	7.9	18.72	7.5
Pioneer 26R31	78.2	B	57.6	D	61.0	C	60.9	71.6	53.1	7.7	18.59	6.0
Dominion	78.6	B	50.2	D	60.0	D	61.1	71.6	52.9	7.8	18.37	6.0
Renwood 3434	66.5	C	83.0	B	76.4	B	61.3	70.0	59.0	7.6	19.38	6.5
Vigoro V9713	66.7	C	71.8	B	74.5	B	61.0	69.9	58.2	8.0	19.04	7.0
Featherstone 176	66.4	C	68.4	C	64.9	C	61.1	69.9	54.6	7.9	18.93	6.0
SS 560	68.1	C	66.5	C	75.0	B	60.5	70.0	58.5	7.7	18.87	5.5
USG 3555	65.7	C	62.9	C	66.4	C	61.0	69.7	55.2	8.1	18.79	5.0
Pioneer 26R12	68.2	C	62.1	C	76.6	B	61.5	70.2	59.0	7.5	18.75	6.5
USG 3315	66.7	C	55.2	D	77.0	B	62.5	69.9	59.1	7.7	18.52	6.0
Tribute	69.6	C	54.4	D	65.9	C	62.2	70.2	54.9	7.4	18.50	6.0
USG 3342	61.9	C	52.4	D	76.0	B	61.1	69.3	58.8	8.7	18.43	5.0
USG 3209	60.6	C	49.2	E	69.5	C	61.1	69.1	56.3	7.6	18.31	5.0
Jamestown	62.9	C	47.3	E	70.8	B	63.0	69.3	56.9	7.9	18.25	7.5
VA05 W-258	61.9	C	47.0	E	69.7	C	60.5	69.4	56.5	7.8	18.24	5.0
Coker 9553	57.6	D	61.5	C	73.2	B	61.6	68.8	57.7	8.2	18.73	6.5
Chesapeake	58.6	D	60.7	C	68.8	C	61.6	68.9	56.1	7.8	18.69	6.0
Panola	57.8	D	46.8	E	66.9	C	60.6	68.8	55.3	7.5	18.26	6.5
Experimental Lines												
VA06 W-423	78.7	B	70.4	B	78.6	B	61.0	71.5	59.8	7.5	19.00	6.5
VA06 W-392	67.6	C	83.5	B	75.2	B	61.4	70.2	58.4	7.5	19.40	7.0
VA05 W-251	65.2	C	66.8	C	62.4	C	61.2	70.0	53.6	7.6	18.84	6.5
VA06 W-194	66.0	C	62.5	C	76.3	B	61.1	69.8	59.0	7.8	18.72	6.5
VA05 W-151	69.3	C	59.0	D	70.3	B	63.0	70.4	56.7	7.9	18.64	8.0
VA05 W-168	69.6	C	48.8	E	68.8	C	64.4	70.3	56.0	7.5	18.31	7.0
VA06 W-93	59.3	D	83.1	B	73.6	B	62.0	69.0	57.8	7.6	19.39	7.5
VA05 W-139	58.6	D	37.8	E	63.3	C	61.8	69.0	54.1	8.0	17.96	4.5
Average	69.1		67.3		72.8		61.4	70.3	57.5	7.7	18.9	6.4
Std Error	5.2		3.6		2.2		0.4	0.2	0.8	0.1	0.20	0.6
F-test for cultivar	5.2		3.6		11.4		4.0	11.1	9.9	8.0	3.5	NS

Table 37. Milling and baking quality of entries in the Virginia Tech Wheat Test based on evaluation of the 2007, 2008, and 2009 harvests.

ENTRY	Milling Quality Score		Baking Quality Score		Softness Equivalent Score		MICRO T.W. LB/BU	Flour Yield %	Softness Equivalent %	Flour Protein %	Cookie Diameter CM.	TOP Grain
Branson	72.9	B	97.5	A	86.0	B	60.9	70.9	63.3	7.7	19.79	7.0
SS 8309	77.7	B	96.7	A	92.9	A	61.0	71.6	65.8	6.9	19.72	6.0
SS 5205	76.6	B	93.8	A	83.2	B	62.2	71.5	62.3	7.5	19.59	7.0
Shirley	72.1	B	84.2	B	73.1	C	61.1	70.7	58.6	7.2	19.34	6.0
USG 3665	76.4	B	80.3	B	78.7	B	61.5	71.5	60.6	7.4	19.20	7.3
Pioneer 26R15	76.1	B	79.3	B	84.8	B	60.9	71.3	62.9	7.9	19.14	6.3
SS MPV-57	76.9	B	76.4	B	69.2	C	60.9	71.4	57.2	7.7	19.08	5.3
Sisson	70.7	B	75.8	B	69.9	C	61.9	70.6	57.4	7.5	19.05	7.0
SS 8404	73.0	B	75.0	B	65.3	C	62.6	70.9	55.8	7.7	19.03	5.3
SS 8302	70.6	B	73.3	B	86.3	B	61.8	70.6	63.5	7.6	18.99	5.3
Merl	75.5	B	69.0	C	71.4	C	63.0	71.3	57.9	7.7	18.85	7.3
Dominion	77.4	B	54.9	D	58.6	D	61.8	71.6	53.4	7.8	18.40	6.0
SS 520	71.9	B	54.3	D	62.8	C	61.3	70.8	54.8	7.6	18.40	6.3
Renwood 3434	66.0	C	74.9	B	76.9	B	61.6	69.8	60.0	7.5	19.02	6.3
Featherstone 176	66.2	C	68.6	C	63.3	C	62.0	69.9	55.0	7.8	18.83	5.7
SS 560	68.3	C	65.4	C	75.1	B	60.6	70.1	59.4	7.6	18.73	5.7
USG 3555	65.7	C	64.1	C	63.8	C	61.5	69.7	55.2	7.9	18.70	5.0
Pioneer 26R12	68.4	C	61.2	C	77.1	B	62.1	70.2	60.0	7.5	18.61	6.3
USG 3315	67.6	C	58.1	D	75.4	B	62.9	70.1	59.5	7.8	18.50	5.7
Tribute	70.0	C	55.8	D	66.4	C	63.1	70.4	56.1	7.4	18.44	5.7
USG 3342	64.2	C	55.3	D	73.3	C	62.1	69.7	58.7	8.6	18.41	5.0
Jamestown	64.1	C	46.6	E	67.0	C	63.8	69.5	56.5	7.8	18.13	6.0
USG 3209	61.9	C	45.4	E	66.7	C	61.5	69.2	56.3	7.4	18.10	4.7
VA05 W-258	62.3	C	43.4	E	69.2	C	61.0	69.4	57.2	7.7	18.04	4.3
Chesapeake	59.8	D	58.4	D	69.2	C	62.4	68.9	57.2	7.8	18.52	5.3
Panola	58.1	D	47.7	E	68.0	C	61.1	68.7	56.7	7.3	18.19	6.3
Experimental Lines												
VA05 W-251	66.3	C	65.9	C	62.6	C	61.6	70.1	54.7	7.4	18.72	6.3
VA05 W-151	69.5	C	60.3	C	66.2	C	63.8	70.4	56.2	7.8	18.57	7.0
VA05 W-168	69.7	C	55.9	D	67.5	C	64.5	70.4	56.5	7.4	18.42	6.3
Average	69.5		66.8		72.1		61.9	70.4	58.2	7.6	18.8	6.0
Std Error	1.9		6.4		2.2		0.4	0.2	0.8	0.1	0.20	0.6
F-test for cultivar	8.0		5.5		15.0		7.7	14.9	14.8	7.3	5.26	1.8

Section 5: Wheat Scab Research

One of the primary research objectives of the Virginia Tech wheat breeding program is to identify and develop cultivars possessing resistance to Fusarium Head Blight (FHB) or scab. Each year all wheat entries in Virginia's Official State Variety Trials are evaluated for FHB resistance in an inoculated, irrigated nursery at the Blacksburg test site. Data from this test for the current crop year and two- and three-year averages for FHB incidence, FHB severity and FHB Index (incidence x severity / 100) are included in this bulletin (Tables 38 – 40) to aid producers in selection of cultivars on the basis of FHB resistance. Cultivars possessing complete resistance or immunity to FHB have not been identified and resistance levels in currently available cultivars vary from moderately resistant to highly susceptible.

A major goal of the breeding program is to identify and incorporate unique and complementary types of FHB resistance into cultivars to enhance the overall level of resistance. Genes controlling FHB resistance have been identified on more than six chromosomes in wheat and some of these genes are complementary in nature and effect different disease resistance components such as FHB incidence, severity, and DON toxin content. Incorporating such multiple resistance genes having additive effects on FHB resistance into cultivars will enhance the overall level of resistance. Because the individual resistance genes are located on different wheat chromosomes and each gene confers only partial resistance to FHB, identifying wheat lines having multiple resistance genes is difficult using traditional breeding techniques. To overcome this limitation, our program is currently identifying and using DNA markers located close to these resistance genes on the same chromosome as "tags" for selecting wheat lines possessing different combinations of these complementary resistance genes.

Entries were inoculated by spraying a *Fusarium graminearum* spore suspension directly onto spikes at the 80% flowering stage. A normal FHB infection level was obtained in 2010. Among 83 lines and varieties tested in 2010, the FHB index varied from 1% to 27% with FHB incidence ranging from 8% to 48% and FHB severity ranging from 5% to 50% (Table 38). Twenty one lines and 35 varieties had FHB index values lower than the mean (<5%) and expressed moderate resistant to FHB in 2010. Based on two year mean data for 2009 and 2010 (Table 39), eight lines and 25 varieties had FHB index values lower than the test mean (<9%). Five experimental lines and 15 varieties tested across three years (2008-2010) had average FHB index values lower than the test mean of 12% (Table 40). Varieties expressing resistance to FHB based on three-year mean data are: Dominion, Progeny 166, USG3315, Massey, Coker 9553, Jamestown, USG 3665, Branson, Progeny 117, SS-MPV57, SS 8302, Coker9804, USG 3555, Progeny 185, SS 8309, Pioneer 26R15.

Table 38. Summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab) and glume blotch resistance, 2010 harvest.

LINE	Heading date (Julian)	FHB Incidence[1] (%)	FHB Severity[2] (%)	FHB Index[3] (0-100)	Rank FHB Index
VA07W-601	126	8	8	1	1
USG 3770	122	8	8	1	2
Pioneer 25R32	126	8	10	1	3
VA08W-92	122	8	10	1	4
USG 3251	127	13	8	1	5
VA07W-594	126	18	5	1	6
VA06W-146	126	8	15	1	7
VA06W-194	125	10	10	1	8
SS 520	123	10	13	1	9
SS 8700	127	10	13	1	10
VA06W-558	124	13	10	1	11
USG 3120	121	13	10	1	12
VA08W-232	121	13	10	1	13
Dominion	126	13	13	1	14
VA08W-165	126	10	15	2	15
VA05W-251	124	15	10	2	16
VA08W-176	126	15	10	2	17
SS 8309	125	13	13	2	18
SS 8302	125	10	18	2	19
VA07W-138	126	10	20	2	20
VA07W-569	126	15	15	2	21
Massey	123	15	13	2	22
Progeny 117	122	15	13	2	23
NC05-19896	125	15	13	2	24
Dyna Gro 9012	125	15	13	2	25
SS-MPV 57	126	13	18	2	26
SS 8404	125	15	15	2	27
SY 9978	125	15	15	2	28
Panola	124	13	15	2	29
VA05W-168	124	13	20	3	30
USG 3201	125	13	20	3	31
VA06W-93	124	20	13	3	32
Branson	124	10	30	3	33
W1566	126	13	25	3	34
VA08W-295	124	15	20	4	35
GA-031238-7E34	125	25	15	4	36
USG 3315	126	25	13	4	37
SS 8600	125	13	23	4	38
GA 991336-6E9	123	15	30	4	39
COKER 9553	123	20	20	4	40
Vigoro V9723	124	25	18	4	41
Pioneer 26R20	126	25	15	4	42
Renwood 3434	126	25	18	4	43
USG 3592	124	13	40	5	44

Table 38. Summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab) and glume blotch resistance, 2010 harvest, continued.

LINE	Heading date (Julian)	FHB Incidence[1] (%)		FHB Severity[2] (%)		FHB Index[3] (0-100)	Rank FHB Index
USG 3665	124	18		28		5	45
VA08W-286	127	20		20		5	46
GA-001170-7E26	124	23		20		5	47
Vigoro 9922	126	18		20		5	48
Shirley	126	20		25		5	49
VA06W-44	123	20		25		5	50
Pioneer 26R15	125	25		20		5	51
Coker 9804	125	25		20		5	52
NC-Cape Fear	123	20		20		5	53
Jamestown	123	23		23		5	54
VA05W-139	125	13		45		5	55
Progeny 166	125	13		30		5	56
VA07W-415	126	20		28		6	57
SS 560	126	20		30		6	58
Pioneer 26R22	126	30		20		6	59
VA06W-612	126	33		18		6	60
VA08W-193	123	28		20		6	61
Progeny 185	124	18		33		7	62
VA06W-412	125	13		50	+	7	63
VA05W-258	126	30		23		7	64
VA05W-640	124	23		28		8	65
USG 3555	124	35		20		8	66
Oakes	126	35		25		8	67
VA08W-294	125	30		23		8	68
SS 8641	124	25		40		10	69
MD00W389-08-4	124	33		25		10	70
VA06W-587	124	23		28		10	71
VA06W-392	124	33		23		11	72
VA08W-223	123	25		43		11	73
NC-Yadkin	125	35		28		11	74
VA08W-196	122	33		33		13	75
VA05W-151	123	25		50	+	14	76
SS 5205	125	48	+	30		14	77
Chesapeake	125	38		33		14	78
Pioneer 26R12	125	45	+	30		15	79
VA05W-70	124	35		30		16	80

Table 38. Summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab) and glume blotch resistance, 2010 harvest, continued.

LINE	Heading date (Julian)	FHB Incidence[1] (%)		FHB Severity[2] (%)		FHB Index[3] (0-100)		Rank FHB Index
Pioneer 26R31	123	40		38		17	+	81
Merl	125	40		40		18	+	82
Featherstone 176	124	45	+	45		27	+	83
Average	125	20		22		5		
LSD (0.05)		23		24		12		

Released cultivars are shown in bold print. Varieties are ordered by ascending index averages.

A plus or minus sign indicates a performance significantly above or below the average.

Entries were planted in 2-row plots, 4 ft in length at Blacksburg, VA and were inoculated at 50% and 100% heading stages with Fusarium graminearum spore suspension (50,000 spores/ml).

[1]Scab Incidence (%): Percentage of infected spikes among 10 randomly selected spikes.

[2]Scab Severity (%): Percentage of infected spikelets among 10 infected spikes.

[3]Scab Index = Incidence X Severity/100; it is an overall indicator of scab resistance/susceptibility level.

Table 39. Two year average summary of reaction of entries in the Virginia Tech State Wheat Tests to Fusarium head blight (scab) and glume blotch resistance, 2009 and 2010 harvests.

LINE	Heading date (Julian)	FHB Incidence[1] (%)	FHB Severity[2] (%)	FHB Index[3] (0-100)	Rank FHB Index
VA06W-558	125	15	14	2	1
SS 8309	127	14	15	2	2
Pioneer 25R32	127	13	18	3	3
COKER 9553	125	16	18	3	4
Vigoro V9723	125	23	16	4	5
Dominion	126	24	14	4	6
Coker 9804	126	20	20	4	7
USG 3665	126	16	31	4	8
Progeny 166	126	16	25	5	9
VA06W-93	126	23	19	5	10
SS 560	127	18	28	5	11
Jamestown	125	19	26	5	12
Massey	125	19	21	5	13
SS 8302	126	23	23	6	14
Oakes	127	28	24	6	15
USG 3315	127	25	23	6	16
SS 520	124	20	24	6	17
VA05W-251	126	26	20	8	18
VA05W-139	127	20	39	8	19
Branson	125	20	35	8	20
VA06W-194	126	23	26	8	21
VA05W-168	126	20	33	8	22
NC-Cape Fear	124	23	31	8	23
USG 3555	125	31	25	8	24
SS 8404	126	24	29	8	25
VA05W-640	125	24	29	8	26
Progeny 117	125	24	25	8	27
NC-Yadkin	126	28	28	8	28
Progeny 185	125	25	31	8	29
USG 3120	123	30	23	9	30

Table 39. Two year average summary of reaction of entries in the Virginia Tech State Wheat Tests to Fusarium head blight (scab) and glume blotch resistance, 2009 and 2010 harvests, continued.

LINE	Heading date (Julian)	FHB Incidence[1] (%)		FHB Severity[2] (%)		FHB Index[3] (0-100)		Rank FHB Index
Vigoro 9922	127	25		30		9		31
VA07W-138	127	25		29		9		32
Panola	126	23		30		9		33
Pioneer 26R15	126	31		30		10		34
VA07W-415	127	26		35		10		35
SS-MPV 57	127	25		31		10		36
VA06W-587	125	24		30		10		37
Renwood 3434	128	33		29		11		38
Pioneer 26R20	127	33		30		11		39
Pioneer 26R31	125	31		38		13		40
VA06W-392	125	33		34		13		41
VA06W-412	126	28		48	+	13		42
VA05W-151	125	30		40		14		43
VA05W-258	127	35		35		14		44
Shirley	127	33		39		16		45
Pioneer 26R12	126	43	+	36		17		46
GA 991336-6E9	125	43	+	39		18		47
Merl	126	44	+	40		18		48
USG 3592	126	36		49	+	20	+	49
Chesapeake	126	41	+	44		20	+	50
Featherstone 176	125	39		40		21	+	51
Average	126	26		29		9		
LSD (0.05)		15		18		10		

Released cultivars are shown in bold print. Varieties are ordered by ascending index averages.

A plus or minus sign indicates a performance significantly above or below the average.

Entries were planted in 2-row plots, 4 ft in length at Blacksburg, VA and were inoculated at 50% and 100% heading stages with Fusarium graminearum spore suspension (50,000 spores/ml).

[1]Scab Incidence (%): Percentage of infected spikes among 10 randomly selected spikes.

[2]Scab Severity (%): Percentage of infected spikelets among 10 infected spikes.

[3]Scab Index = Incidence X Severity/100; it is an overall indicator of scab resistance/susceptibility level.

Table 40. Three year average summary of reaction of entries in the Virginia Tech State Wheat Tests to Fusarium head blight (scab) and glume blotch resistance, 2008 - 2010 harvests.

LINE	Heading date (Julian)	FHB Incidence[1] (%)	FHB Severity[2] (%)	FHB Index[3] (0-100)	Rank FHB Index
Dominion	127	28	18	6	1
Progeny 166	126	18	30	6	2
USG 3315	127	28	20	6	3
Massey	127	23	25	7	4
COKER 9553	125	21	29	7	5
Jamestown	125	24	31	8	6
USG 3665	127	22	36	8	7
VA05W-251	126	28	23	8	8
VA06W-93	127	28	24	8	9
VA06W-194	127	22	34	8	10
Branson	125	23	34	8	11
Progeny 117	125	24	31	9	12
SS-MPV 57	127	29	29	10	13
SS 8302	127	27	32	10	14
Coker 9804	126	26	34	10	15
USG 3555	126	35	32	12	16
Progeny 185	126	30	37	12	17
SS 8309	127	26	31	12	18
VA05W-168	126	26	41	12	19
Pioneer 26R15	127	32	39	12	20
VA05W-151	126	31	38	13	21
VA05W-139	127	29	44	14	22
VA06W-392	126	34	37	14	23
SS 560	129	35	34	14	24
Pioneer 26R31	126	35	41	15	25
Renwood 3434	128	39	35	15	26
SS 8404	127	33	39	16	27
VA05W-258	128	39	39	16	28
Pioneer 26R12	127	40	37	16	29
Panola	126	33	38	16	30
Shirley	127	36	40	17	31
Merl	126	39	45	18	32

Table 40. Three year average summary of reaction of entries in the Virginia Tech State Wheat Tests to Fusarium head blight (scab) and glume blotch resistance, 2008 - 2010 harvests, continued.

LINE	Heading date (Julian)	FHB Incidence[1] (%)		FHB Severity[2] (%)		FHB Index[3] (0-100)		Rank FHB Index
SS 520	125	33		40		19		33
Featherstone 176	125	40		41		20	+	34
Chesapeake	126	44	+	43		20	+	35
USG 3592	126	40		51	+	22	+	36
Average	126	31		35		12		
LSD (0.05)		11		15		8		

Released cultivars are shown in bold print. Varieties are ordered by ascending index averages.

A plus or minus sign indicates a performance significantly above or below the average.

Entries were planted in 2-row plots, 4 ft in length at Blacksburg, VA and were inoculated at 50% and 100% heading stages with Fusarium graminearum spore suspension (50,000 spores/ml).

[1]Scab Incidence (%): Percentage of infected spikes among 10 randomly selected spikes.

[2]Scab Severity (%): Percentage of infected spikelets among 10 infected spikes.

[3]Scab Index = Incidence X Severity/100; it is an overall indicator of scab resistance/susceptibility level.