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VIRGINIA STATE

# Small Grains In 2011

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## Section 5: Wheat Scab Research

# Recommended Small Grain Varieties

The following are the small grain variety recommendations for Virginia in 2011. 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 | Good | Good |
| Branson | 4 | 1 | Good | Excellent |
| USG 3120 | 3 | 3 | Good | Moderate |
| Jamestown | 2 | 4 | Moderate | Poor |
| USG 3770 | 3 | 4 | n/a | n/a |
| Mid-Season Heading Varieties (121-122 d, Julian) | | | | |
| USG 3201 | 3 | 4 | n/a | n/a |
| Dyna-Gro V9723 | 4 | 2 | Good | Excellent |
| USG 3555 | 4 | 1 | Moderate | Poor |
| Pioneer 25R32 | 3 | 3 | Good | Poor |
| Merl | 4 | 4 | Good | Moderate |
| SS 5205 | 3 | 3 | Good | Excellent |
| USG 3665 | 4 | 2 | Good | Excellent |
| Pioneer 26R15 | 4 | 1 | Good | Excellent |
| Full-Season Heading Varieties (123-124 d, Julian) | | | | |
| USG 3251 | 4 | 2 | n/a | n/a |
| USG 3315 | 3 | 3 | Moderate | Moderate |
| Renwood 3434 | 3 | 1 | Moderate | Excellent |
| SS 8700 | 4 | 2 | n/a | n/a |
| SS 560 | 3 | 1 | Moderate | Moderate |
| Pioneer 26R20 | 4 | 2 | Moderate | Excellent |
| Featherstone VA-258 | 4 | 2 | Moderate | Poor |
| Shirley | 4 | 1 | Good | Excellent |
| SS-MPV 57 | 3 | 2 | Good | Good |

* 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 Resistance | Leaf Rust Resistance | Glume Blotch Resistance | Barley Yellow Dwarf Virus Tolerance |
|---|---|---|---|---|---|
| Early Heading Varieties (119-120 d, Julian) | | | | | |
| SS 520* | Weak | Good | Good | Moderate | Weak |
| Branson | Good | Good | Good | Moderate | Excellent |
| USG 3120 | Excellent | Good | Good | Good | Good |
| Jamestown | Excellent | Good | Good | Moderate | Excellent |
| USG 3770 | Good | Weak | Moderate | n/a | Good |
| Mid-Season Heading Varieties (121-122 d, Julian) | | | | | |
| USG 3201 | Excellent | Weak | Good | n/a | Good |
| Dyna-Gro V9723 | Excellent | Weak | Weak | Good | Good |
| USG 3555 | Good | Good | Weak | Good | Excellent |
| Pioneer 25R32 | Excellent | Excellent | Weak | n/a | Moderate |
| Merl | Good | Good | Weak | Good | Weak |
| SS 5205 | Good | Good | Excellent | Weak | Moderate |
| USG 3665 | Excellent | Good | Excellent | Good | Excellent |
| Pioneer 26R15 | Good | Good | Excellent | Weak | Weak |
| Full-Season Heading Varieties (123-124 d, Julian) | | | | | |
| USG 3251 | Excellent | Moderate | Moderate | n/a | Good |
| USG 3315 | Good | Good | Moderate | Moderate | Excellent |
| Renwood 3434 | Moderate | Excellent | Good | Excellent | Weak |
| SS 8700 | Good | Excellent | Weak | n/a | Excellent |
| SS 560 | Moderate | Good | Weak | Moderate | Weak |
| Pioneer 26R20 | Good | Moderate | Good | Moderate | Good |
| Featherstone VA-258 | Weak | Good | Moderate | Excellent | Moderate |
| Shirley | Moderate | Excellent | Excellent | Good | Excellent |
| SS-MPV 57 | Good | Weak | Weak | Excellent | Weak |

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

† 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 – Atlantic, Barsoy, Callao, Dan, Doyce, Eve, Nomini, Price, Thoroughbred, and Wysor.

## Commercial and Experimental Wheat Entries

Dyna-Gro Seed, 6221 Riverside Drive, Suite 1, Dublin, OH 43017 – Dominion, Dyna-Gro 9012, Dyna-Gro 9171, Dyna-Gro 9922, Dyna-Gro V9723, Shirley.

Featherstone Seed Company, 13941 Genito Road, Amelia, VA 23002 - Featherstone VA 258.

University of Georgia, 1109 Experiment Street, Griffin, GA 30223 – GA-00067-8E35 and GA-001138-8E36.

University of Maryland, CMREC/Beltsville Facility, 12000 Beaver Dam Road, Laurel, MD 20708 – Chesapeake.

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, 26R32, and XW09H.

Progeny Ag Products, 1529 Hwy 193, Wynne, AR 72396 – Progeny 117, Progeny 125, Progeny 166, Progeny 185, Progeny 357, Progeny 870, and Progeny PGX10-2.

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 8340, and SS 8500.

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

UniSouth Genetics, 2640-C Nolensville Road, Nashville, TN 37211 – USG 3120, USG 3201, USG 3251, USG 3315, USG 3438, USG 3555, USG 3592, USG 3665, 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, Dyna-Gro Seed, 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. Bobby Clark (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 2009-2011. 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 in parenthesis near the column heading. 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

Following an extremely dry summer and corresponding low yields in most of the Commonwealth, small grain growers experienced a generally drier and warm early start to planting. Many farmers were able to get an early start on wheat and barley planting since the harvest season for corn and soybeans was greatly abbreviated. By September 20, 9% of the wheat crop was seeded, compared to the average of 4%. By October 20, most areas had received enough rainfall so that 65% of the state was rated adequate for topsoil moisture. The trend toward early seeding and early emergence continued with 46% of intended acreage reported as already planted and 18% of acres emerged compared with the 5 year average of 8% by this date. The end of the first week of November showed continued cool and relatively wet weather throughout much of the state. Still growers managed to have 77% of acres planted. Conditions for early season growth were favorable, especially for the earlier seedings and the Virginia Agricultural Statistics Service reported that 81% of wheat had emerged compared to the 5 year average of 53%. Mid-winter was relatively dry and cold with little snow fall. This resulted in more winter injury to some small grain fields but did allow producers to access their fields. Rain in March was welcome and helped improve condition of both wheat and barley throughout the state.

By early April, both wheat and barley were rated at greater than 80% good or excellent. Crop condition remained quite good in most locations in late April however some areas were beginning to feel the effects of dry weather. The end of the first week of May found 64% of the wheat crop headed, compared to 41%, the 5 year average for this timeframe. By the week ending May 29, barley harvest was well underway. Wheat harvest was estimated to be 30% finished by June 12. While fall infections of barley yellow dwarf virus resulted in damage and visible symptoms in some fields, this was not generally widespread. In general, disease and insect pressure were below normal in most areas of the commonwealth. This, combined with a relatively dry grain fill period and harvest season, allowed producers to harvest a large crop of wheat and barley. The Virginia Ag Statistics Service estimates barley yields at 85 bushels per

acre on 70,000 acres. Similarly, wheat yields are expected to be 70 bushels per acre with total production of over 18 million bushels statewide.

Figure 1. Monthly average temperatures, 2010-11.

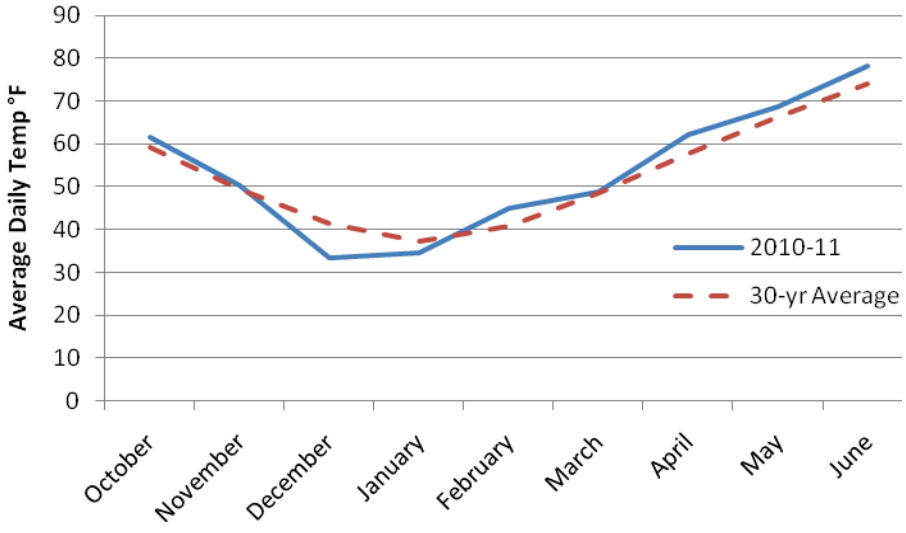
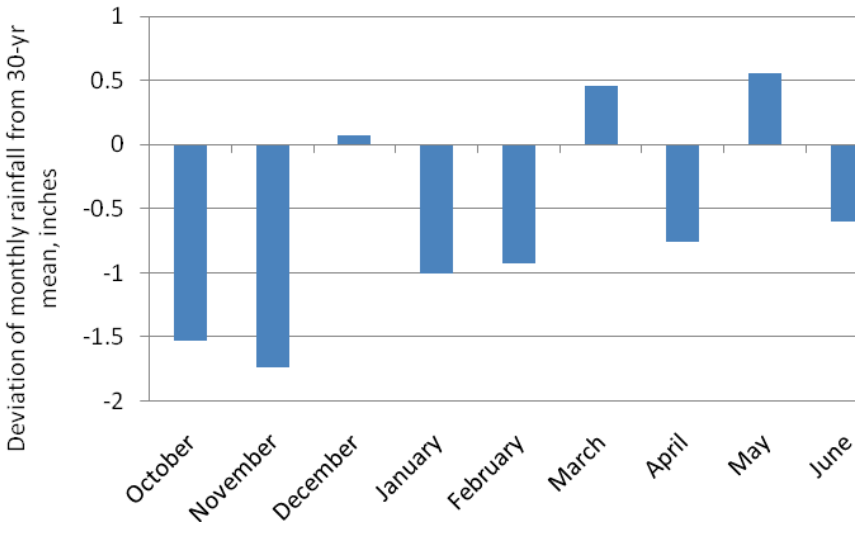



Figure 2. Deviation of monthly rainfall from 30 year mean.



# Section 1: Barley Varieties

The Virginia Tech barley breeding program will continue to develop and improve yield potential and end use quality of new barley lines derived from crosses made between superior hulled breeding lines and cultivars, such as Thoroughbred, with outstanding hulless lines. Other breeding populations derived from crosses with barley lines introduced from various sources, including lines from the Barley Coordinated Agricultural Project (Barley CAP) are being advanced in the program. Significant progress already has been made in the development of winter barley lines. Therefore, we are pleased to report the release of 'Atlantic' winter barley (tested as VA06B-19). Atlantic was officially released in spring of 2011. Atlantic winter barley provides barley producers and end users in the Eastern United States with a widely adapted, early maturing winter cultivar having superior grain quality and high resistance to Powdery mildew based on its performance in State and Uniform winter barley yield nurseries. It also has performed well in tests conducted in one or more of the barley production regions o f Maryland, North Carolina and Virginia. This season (2010-2011), approximately, 71 advance barley lines were evaluated in replicated yield tests at locations in Maryland, Virginia, North Carolina, Kentucky, and Delaware. Subsequently, yield potential of 75 hulled and 75 hulless sister lines derived from crosses between Thoroughbred and other advance hulless barley lines were evaluated in an observation yield test. A barley-based ethanol market continues to provide potential as an initial market for winter barley in the Eastern United States. This will not only create an important market for barley throughout the Eastern United States, it will provide valuable byproducts including carbon dioxide, fuel pellets, high protein feed ingredients for domestic animals and eventually enriched food products for human consumption. Owing to the rising cost of feed ingredients, animal producers are considering alternative options; therefore barley specifically aimed at the feed market could provide that low cost option for producers. The Virginia Tech breeding program will continue to work with interested parties in evaluating the potential of barley for these and other diverse purposes. Through these efforts, the quality and value of winter barley has increased greatly during the past two years.

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 over 50,000 acres in Virginia will require revival of international market opportunities and/or improve domestic value added opportunities.

## 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. They were planted in seven and one-half-inch rows at the Warsaw No-Till location. The no-till tests at Holland and Warsaw were planted at 28 seeds per row foot. All other locations were planted at 32 seeds per row foot.

Three year average (2009, 2010 and 2011) grain yield for Doyce hulless barley in Virginia was 66 bushels per acre with test

weight of 53.5 pounds per bushel. Grain yield of Eve was 69 bushels per acre and Dan 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 1.3 pounds per bushel higher than Eve (57.4 pounds/bushel). Meanwhile, elite hulless experimental line VA07H-31 had the highest three year average grain yield (78 bushels per acre) that were 12 bushels per acre higher than that of Doyce (66 bushels/acre), 11 bushels per acre higher than Dan, 9 bushels per acre higher than Eve and 5 bushels per acre more than test average.

## 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. They were planted in seven and one-half-inch rows at the Warsaw No-Till location. The no-till tests at Holland and Warsaw were planted at 28 seeds per row foot. All other locations were planted at 24 seeds per row foot.

Three year average (2009, 2010 and 2011) grain yields of Thoroughbred hulled barley were 97 bushels per acre with average test weight of 45.2 pounds per bushel compared to the mean yield of 93 bushel per acre and test weight of 45.9 pounds per bushel for the mean of all cultivars tested. Three year average grain yield of Atlantic (93 bushels per acre) was 4 bushels per acre less than Thoroughbred, 2 bushels per acre higher than Callao (91 bushels per acre) similar to test average (93 bushels per acre), and significantly higher than Price (85 bushels per acre). Hulled experimental line VA06B-48 had the highest three year average grain yield (98 bushels per acre) that was 1 bushel per acre higher than Thoroughbred (97 bushels per acre), 7 bushels per acre higher than Callao (91 bushels per acre), 13 bushels per acre higher than Price (85 bushels per acre) and 5 bushel per higher than Atlantic and test average (93 bushels per acre). Though, three year average grain yields of Atlantic (93 bushels/acre) were 4 bushels per acre lower than Thoroughbred, average test weight of Atlantic (46.0 pounds/bushel) was 0.8 pound per bushel higher than Thoroughbred and also Atlantic possesses better resistance to diseases (leaf rust and powdery mildew). However, our current focus is on a better understanding of the genetic basis of yield potential in both hulled and hulless barley and thereby continue to improve yield and value added traits of winter barley lines for specific end uses.

## Summary of barley management practices for the 2011 harvest season (All rates are given on a per acre basis.)

**Blacksburg** - Planted October 7, 2010. Preplant fertilizer was 30-50-60 in September 2010. Site was sprayed with .6 oz Harmony Extra SG® on November 22, 2010. Site was fertilized with 50 lb N plus 0.8 oz Harmony Extra SG® on March 22, 2011 and with 25 lb N on April 25, 2011. Harvest occurred on June 8, 2011.
**Blackstone** - Planted October 13, 2010. Site was fertilized with 375 lb 8-8-24 on October 13, 2010. Site was top-dressed with 60 lb N using 14-0-14 on February 11, 2011 and with 50 lb N using 34-0-0 on March 29, 2011. Site was sprayed with 3 oz Proaxis® for cereal leaf beetle on April 20, 2011. Harvest occurred June 3, 2011.
**Painter** - Planted October 25, 2010. Preplant fertilizer was 30 lb N using 30% UAN on October 24, 2010. Site was fertilized with 60 lb N using 30%UAN and 0.75 oz Harmony Extra SG® February 24, 2011. Site was fertilized with 50 lb N using 30% UAN March 20, 2011. Harvest occurred on June 7, 2011.
**Warsaw** - Planted October 17, 2010. Preplant fertilizer was 30-60-60-5 applied October 12, 2010 and 1 ton lime applied October 11, 2010. Site was fertilized using 12-0-0-1.5 at 25 lb N on February 7, and at 25 lb N on March 14, 2011. Site was fertilized with an additional 13 lb N using 5 gal N-Pact® on April 14, 2011. Site was treated with .4 pt Starane® on February 7, with .75 oz Harmony Extra SG® February 23, and with 12 oz Primo® March 25, 2011. Harvest occurred June 1, 2011.
**Holland** – Planted no-till November 2, 2010. Preplant

fertilization was 300 lb 6-16-36 on October 22, 2010. Site was fertilized with 60 lb N February 17, and 50 lb N March 18, 2011 using UAN. Site was also treated with .6 oz Harmony Extra SG® on both those dates. Harvest occurred on June 2, 2011.

**Orange** - Planted October 12, 2010. Preplant fertilization was 139 lb 18-46-0 using DAP on October 12, 2010. Sixty lb N and Harmony Extra® at 0.4 oz were applied March 15, 2011. Harvest occurred on June 6-7, 2011.

**Table 1. Summary of performance of hulless entries in the Virginia Tech Barley Test over locations, 2011 harvest.**

| Hulless Lines | Yield (Bu/a @ 48 lb/bu) (6) | | Test Weight (Lb/bu) (6) | | Date Headed (Julian) (2) | | Height (In) (3) | | Lodging (0-9) (6) | | Leaf Rust (0-9) (1) | | Powdery Mildew (0-9) (3) | | Net Blotch (0-9) (3) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VA07H-31WS | 95 | + | 57.6 | | 114 | + | 39 | | 4 | | 4 | | 6 | + | 2 | - |
| VA09H-4 | 95 | + | 56.6 | - | 113 | | 35 | - | 2 | - | 6 | | 4 | | 3 | |
| VA09H-174 | 93 | + | 56.8 | - | 117 | + | 36 | - | 2 | - | 5 | | 2 | - | 2 | - |
| VA07H-35WS | 93 | + | 57.7 | | 114 | + | 38 | | 5 | + | 4 | | 6 | + | 2 | - |
| VA06H-79 | 93 | + | 57.1 | | 114 | | 38 | | 4 | | 9 | + | 3 | - | 1 | - |
| VA06H-3WS | 92 | + | 57.7 | | 114 | | 38 | | 4 | + | 4 | | 6 | + | 2 | - |
| VA09H-3 | 92 | + | 57.9 | + | 111 | - | 40 | + | 4 | + | 6 | | 1 | - | 4 | + |
| VA09H-112(2R) | 91 | | 59.0 | + | 114 | | 41 | + | 1 | - | 5 | | 2 | - | 5 | + |
| VA06H-25 | 90 | | 57.5 | | 114 | + | 38 | | 5 | + | 5 | | 6 | + | 2 | - |
| VA09H-178WS | 90 | | 55.9 | - | 112 | - | 36 | - | 4 | + | 6 | | 2 | - | 3 | |
| VA08H-5 | 90 | | 58.7 | + | 114 | | 40 | + | 3 | | 2 | - | 6 | + | 3 | |
| VA07H-10WS | 87 | | 57.5 | | 113 | | 39 | + | 4 | | 3 | - | 7 | + | 3 | |
| **Eve** | 87 | | 58.3 | + | 108 | - | 37 | - | 3 | | 3 | - | 1 | - | 6 | + |
| VA09H-110(2R) | 86 | | 57.6 | | 114 | + | 39 | + | 4 | | 4 | | 1 | - | 5 | + |
| VA09H-111(2R) | 85 | | 58.1 | + | 114 | | 40 | + | 3 | - | 5 | | 2 | - | 6 | + |
| VA08H-6WS | 85 | | 58.1 | + | 114 | | 38 | | 4 | | 3 | - | 7 | + | 3 | - |
| VA06H-30 | 85 | | 56.7 | - | 115 | + | 38 | | 5 | + | 4 | | 7 | + | 2 | - |
| VA08H-7WS | 84 | | 58.4 | + | 113 | | 38 | | 4 | | 3 | - | 7 | + | 3 | |
| VA06H-149 | 83 | | 55.7 | - | 115 | + | 37 | | 3 | | 7 | + | 4 | | 4 | |
| VA08H-72 | 80 | - | 57.3 | | 114 | + | 38 | | 4 | | 6 | | 1 | - | 5 | + |
| **Dan** | 79 | - | 59.4 | + | 113 | | 35 | - | 4 | | 3 | - | 3 | - | 5 | + |
| **Doyce** | 78 | - | 53.4 | - | 111 | - | 37 | - | 4 | | 7 | + | 3 | | 6 | + |
| VA08H-79WS | 69 | - | 56.7 | - | 115 | + | 37 | | 3 | - | 7 | + | 9 | + | 2 | - |
| Average | 87 | | 57.4 | | 113 | | 38 | | 3 | | 5 | | 4 | | 3 | |
| LSD (0.05) | 5 | | 0.5 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | |
| C.V. | 10 | | 1.5 | | 0 | | 3 | | --- | | --- | | --- | | --- | |

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.
WS in the line designation indicates a white-seeded line.
2R in the line designation indicates a 2 row line.

**Table 2. Two year average summary of performance of hulless entries in the Virginia Tech Barley Tests, 2010 and 2011 harvests.**

| Hulless Lines | Yield (Bu/a @ 48 lb/bu) (12) | | Test Weight (Lb/bu) (12) | | Date Headed (Julian) (5) | | Height (In) (6) | | Lodging (0-9) (10) | | Leaf Rust (0-9) (3) | | Powdery Mildew (0-9) (4) | | Net Blotch (0-9) (5) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VA07H-31WS | 81 | + | 57.4 | | 115 | + | 35 | | 3 | + | 4 | | 5 | + | 2 | - |
| VA07H-35WS | 80 | + | 57.1 | | 115 | + | 35 | | 4 | + | 4 | | 4 | + | 2 | - |
| VA06H-3WS | 78 | + | 57.3 | | 115 | + | 35 | | 3 | + | 4 | | 4 | + | 2 | |
| VA06H-25 | 77 | | 57.4 | | 115 | + | 36 | | 4 | + | 4 | | 5 | + | 2 | - |
| VA07H-10WS | 76 | | 57.3 | | 113 | - | 36 | + | 3 | | 4 | | 5 | + | 3 | |
| VA06H-79 | 76 | | 56.3 | - | 115 | + | 35 | | 3 | | 9 | + | 2 | - | 1 | - |
| VA06H-30 | 75 | | 56.8 | | 116 | + | 35 | | 3 | + | 4 | | 5 | + | 2 | - |
| VA08H-5 | 75 | | 58.3 | + | 115 | + | 36 | + | 2 | - | 3 | - | 5 | + | 3 | |
| VA06H-149 | 74 | | 55.9 | - | 116 | + | 34 | - | 2 | - | 4 | | 3 | | 3 | |
| VA08H-6WS | 74 | | 57.8 | + | 114 | | 36 | + | 3 | | 3 | - | 6 | + | 3 | |
| **Eve** | 72 | - | 58.2 | + | 108 | - | 35 | | 3 | | 4 | | 0 | - | 5 | + |
| VA08H-72 | 71 | - | 57.5 | | 114 | | 35 | | 2 | - | 6 | + | 1 | - | 4 | + |
| **Doyce** | 69 | - | 54.4 | - | 111 | - | 34 | - | 3 | | 3 | - | 2 | - | 5 | + |
| **Dan** | 68 | - | 59.1 | + | 114 | | 34 | - | 3 | | 3 | - | 2 | - | 4 | + |
| Average | 75 | | 57.2 | | 114 | | 35 | | 3 | | 4 | | 4 | | 3 | |
| LSD (0.05) | 3 | | 0.5 | | 1 | | 1 | | 0 | | 1 | | 1 | | 1 | |
| C.V. | 11 | | 2.2 | | 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.

WS in the line designation indicates a white-seeded line.

**Table 3. Three year average summary of performance of hulless entries in the Virginia Tech Barley Tests, 2009, 2010, and 2011 harvests.**

| | Yield | | Test | | Date | | | | | | Leaf | | Powdery | | Net | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Bu/a @ | | Weight | | Headed | | Height | | Lodging | | Rust | | Mildew | | Blotch | |
| **Hulless Lines** | 48 lb/bu) | | (Lb/bu) | | (Julian) | | (In) | | (0-9) | | (0-9) | | (0-9) | | (0-9) | |
| | (17) | | (17) | | (8) | | (9) | | (16) | | (5) | | (7) | | (7) | |
| VA07H-31WS | 78 | + | 56.8 | | 116 | + | 36 | | 3 | | 3 | | 4 | + | 2 | - |
| VA07H-35WS | 76 | + | 56.6 | | 116 | + | 36 | | 4 | + | 4 | | 4 | + | 2 | - |
| VA06H-3WS | 75 | | 57.0 | + | 116 | + | 35 | | 3 | | 3 | | 3 | + | 2 | - |
| VA06H-25 | 75 | | 56.7 | | 116 | + | 36 | | 4 | + | 3 | | 4 | + | 2 | - |
| VA06H-79 | 75 | | 55.9 | - | 116 | + | 35 | | 3 | - | 8 | + | 2 | - | 1 | - |
| VA07H-10WS | 74 | | 57.0 | + | 114 | | 37 | + | 3 | | 3 | | 4 | + | 3 | |
| **Eve** | 69 | - | 57.4 | + | 109 | - | 35 | | 3 | | 3 | | 1 | - | 5 | + |
| **Dan** | 67 | - | 58.7 | + | 115 | | 34 | - | 3 | | 2 | - | 2 | - | 3 | + |
| **Doyce** | 66 | - | 53.5 | - | 112 | - | 34 | - | 3 | | 2 | - | 2 | - | 5 | + |
| Average | 73 | | 56.6 | | 114 | | 35 | | 3 | | 4 | | 3 | | 3 | |
| LSD (0.05) | 3 | | 0.4 | | 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.

WS in the line designation indicates a white-seeded line.

**Table 4. Summary of performance of hulless entries in the Virginia Tech Barley Test, Southern Piedmont AREC, Blackstone, VA, 2011 harvest.**

| Hulless Lines | Yield (Bu/a @ 48 lb/bu) | | Test Weight (Lb/bu) | | Lodging (0-9) | | Net Blotch (0-9) | |
|---|---|---|---|---|---|---|---|---|
| VA08H-5 | 92 | | 58.7 | + | 5 | | 2 | - |
| VA09H-4 | 90 | | 57.4 | | 4 | | 5 | |
| VA09H-3 | 87 | | 58.5 | | 5 | | 5 | |
| VA07H-10WS | 87 | | 57.5 | | 3 | | 4 | |
| VA09H-110(2R) | 87 | | 58.3 | | 6 | | 6 | + |
| VA06H-3WS | 86 | | 58.0 | | 6 | | 2 | - |
| VA06H-79 | 86 | | 58.2 | | 4 | | 2 | - |
| VA07H-31WS | 85 | | 58.3 | | 4 | | 3 | |
| VA09H-174 | 84 | | 57.9 | | 6 | | 3 | - |
| VA08H-72 | 82 | | 57.9 | | 5 | | 7 | + |
| VA06H-25 | 82 | | 57.7 | | 5 | | 2 | - |
| VA08H-6WS | 82 | | 58.5 | | 5 | | 3 | |
| VA08H-7WS | 81 | | 59.0 | + | 5 | | 3 | |
| **Eve** | 81 | | 59.5 | + | 4 | | 5 | |
| VA09H-112(2R) | 80 | | 58.7 | + | 2 | - | 7 | + |
| VA07H-35WS | 79 | | 57.0 | | 6 | | 2 | - |
| VA06H-149 | 78 | | 56.0 | - | 5 | | 5 | + |
| VA09H-111(2R) | 76 | | 57.6 | | 4 | | 7 | + |
| VA09H-178WS | 76 | | 56.4 | - | 5 | | 4 | |
| VA06H-30 | 73 | | 57.1 | | 5 | | 2 | - |
| **Dan** | 67 | | 59.8 | + | 5 | | 4 | |
| **Doyce** | 63 | - | 54.0 | - | 5 | | 7 | + |
| VA08H-79WS | 58 | - | 55.7 | - | 6 | | 2 | - |
| Average | 80 | | 57.7 | | 5 | | 4 | |
| LSD (0.05) | 14 | | 0.9 | | 2 | | 1 | |
| C.V. | 12 | | 1.1 | | --- | | --- | |

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.

WS in the line designation indicates a white-seeded line.

2R in the line designation indicates a 2 row line.

**Table 5. Summary of performance of hulless entries in the Virginia Tech Barley Test planted no-till at the Tidewater AREC, Holland, VA, 2011 harvest.**

| Hulless Lines | Yield (Bu/a @ 48 lb/bu) | | Test Weight (Lb/bu) | | Lodging (0-9) | |
|---|---|---|---|---|---|---|
| VA07H-35WS | 89 | + | 57.3 | | 7 | + |
| VA07H-31WS | 84 | | 57.8 | | 7 | + |
| VA06H-3WS | 80 | | 58.4 | + | 5 | |
| VA09H-4 | 80 | | 55.8 | - | 3 | - |
| VA09H-174 | 79 | | 56.5 | | 3 | - |
| VA06H-30 | 79 | | 57.1 | | 6 | |
| VA07H-10WS | 78 | | 57.4 | | 5 | |
| VA09H-178WS | 74 | | 55.2 | - | 6 | |
| VA06H-79 | 73 | | 55.8 | - | 5 | |
| VA09H-3 | 73 | | 56.3 | | 6 | |
| VA06H-149 | 73 | | 55.0 | - | 5 | |
| **Doyce** | 73 | | 53.1 | - | 6 | |
| VA09H-112(2R) | 71 | | 57.8 | | 2 | - |
| VA06H-25 | 70 | | 57.8 | | 7 | + |
| VA09H-111(2R) | 70 | | 57.4 | | 2 | - |
| VA08H-7WS | 69 | | 57.3 | | 6 | |
| **Eve** | 69 | | 58.1 | + | 5 | |
| VA08H-72 | 68 | | 56.8 | | 5 | |
| VA09H-110(2R) | 68 | | 56.4 | | 5 | |
| VA08H-6WS | 66 | | 57.8 | | 6 | |
| **Dan** | 66 | | 59.3 | + | 5 | |
| VA08H-79WS | 64 | | 56.1 | | 4 | |
| VA08H-5 | 62 | | 57.8 | | 5 | |
| Average | 73 | | 56.9 | | 5 | |
| LSD (0.05) | 13 | | 1.0 | | 2 | |
| C.V. | 12 | | 1.2 | | --- | |

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.
WS in the line designation indicates a white-seeded line.
2R in the line designation indicates a 2 row line.

**Table 6. Summary of performance of hulless entries in the Virginia Tech Barley Test, Eastern Virginia AREC, Warsaw, VA, 2011 harvest.**

| Hulless Lines | Yield (Bu/a @ 48 lb/bu) | | Test Weight (Lb/bu) | | Date Headed (Julian) | | Height (In) | | Lodging (0-9) | | Powdery Mildew (0-9) | | Net Blotch (0-9) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VA06H-79 | 138 | + | 58.4 | | 110 | | 36 | | 6 | | 3 | | 1 | - |
| VA09H-174 | 137 | + | 58.3 | | 114 | + | 35 | | 2 | - | 2 | - | 2 | - |
| VA09H-3 | 135 | + | 59.0 | | 108 | - | 37 | | 7 | | 1 | - | 5 | + |
| VA09H-178WS | 134 | + | 57.4 | - | 108 | - | 34 | | 6 | | 2 | - | 2 | - |
| VA06H-25 | 133 | + | 58.6 | | 112 | + | 36 | | 8 | + | 7 | + | 1 | - |
| VA06H-3WS | 133 | + | 59.0 | | 111 | | 35 | | 7 | + | 5 | | 1 | - |
| VA07H-31WS | 132 | + | 58.8 | | 111 | + | 37 | | 7 | | 7 | + | 1 | - |
| VA07H-35WS | 132 | + | 58.6 | | 112 | + | 35 | | 7 | | 7 | + | 1 | - |
| VA09H-4 | 128 | | 58.1 | | 111 | | 34 | - | 3 | - | 3 | | 3 | |
| VA08H-5 | 124 | | 60.0 | + | 111 | | 37 | | 5 | | 5 | | 2 | |
| VA06H-149 | 124 | | 57.9 | - | 112 | + | 36 | | 3 | - | 4 | | 4 | |
| VA06H-30 | 123 | | 58.1 | | 112 | + | 35 | | 8 | + | 7 | + | 1 | - |
| VA09H-112(2R) | 121 | | 60.0 | + | 111 | | 40 | + | 1 | - | 1 | - | 5 | + |
| VA07H-10WS | 120 | | 58.9 | | 110 | | 36 | | 6 | | 7 | + | 1 | - |
| VA09H-110(2R) | 117 | | 58.3 | | 111 | + | 35 | | 6 | | 1 | - | 6 | + |
| VA09H-111(2R) | 114 | | 59.0 | | 111 | | 39 | + | 7 | | 2 | - | 7 | + |
| VA08H-7WS | 111 | | 59.7 | + | 110 | | 36 | | 4 | | 6 | + | 1 | - |
| VA08H-6WS | 109 | - | 59.1 | + | 111 | + | 36 | | 5 | | 8 | + | 2 | - |
| **Eve** | 104 | - | 58.5 | | 104 | - | 37 | | 5 | | 0 | - | 9 | + |
| VA08H-72 | 101 | - | 58.7 | | 111 | | 35 | | 5 | | 1 | - | 5 | + |
| **Doyce** | 98 | - | 53.6 | - | 108 | - | 35 | | 6 | | 3 | | 7 | + |
| **Dan** | 92 | - | 60.0 | + | 110 | - | 33 | - | 9 | + | 3 | | 6 | + |
| VA08H-79WS | 88 | - | 58.2 | | 113 | + | 35 | | 3 | - | 9 | + | 1 | - |
| Average | 119 | | 58.5 | | 110 | | 36 | | 5 | | 4 | | 3 | |
| LSD (0.05) | 10 | | 0.6 | | 1 | | 2 | | 2 | | 2 | | 1 | |
| C.V. | 6 | | 0.8 | | 0 | | 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.
WS in the line designation indicates a white-seeded line.
2R in the line designation indicates a 2 row line.

**Table 7. Summary of performance of hulless entries in the Virginia Tech Barley Test, Eastern Shore AREC, Painter, VA, 2011 harvest.**

| Hulless Lines | Yield (Bu/a @ 48 lb/bu) | | Test Weight (Lb/bu) | | Lodging (0-9) | | Powdery Mildew (0-9) | |
|---|---|---|---|---|---|---|---|---|
| VA09H-174 | 81 | + | 59.5 | | 2 | | 2 | - |
| VA06H-79 | 79 | | 59.4 | | 2 | | 3 | |
| **Dan** | 78 | | 61.6 | + | 2 | | 4 | |
| VA09H-112(2R) | 76 | | 60.5 | | 1 | - | 1 | - |
| **Eve** | 76 | | 59.7 | | 3 | | 1 | - |
| VA07H-31WS | 75 | | 60.1 | | 5 | + | 6 | + |
| VA06H-149 | 74 | | 58.0 | - | 1 | | 4 | |
| VA09H-3 | 74 | | 60.4 | | 3 | + | 2 | - |
| VA09H-4 | 74 | | 58.0 | - | 1 | | 4 | |
| VA08H-72 | 71 | | 59.7 | | 1 | | 1 | - |
| VA09H-178WS | 70 | | 56.5 | - | 4 | + | 2 | - |
| VA08H-5 | 70 | | 61.3 | + | 1 | - | 5 | |
| VA09H-110(2R) | 69 | | 59.2 | | 0 | - | 2 | - |
| VA09H-111(2R) | 69 | | 60.0 | | 0 | - | 2 | - |
| **Doyce** | 69 | | 52.6 | - | 1 | | 3 | - |
| VA07H-10WS | 68 | | 60.2 | | 1 | - | 6 | + |
| VA07H-35WS | 68 | | 60.4 | | 4 | + | 5 | + |
| VA06H-3WS | 64 | | 59.4 | | 5 | + | 5 | |
| VA06H-30 | 64 | | 59.9 | | 3 | | 6 | + |
| VA08H-6WS | 64 | | 60.6 | | 1 | - | 7 | + |
| VA06H-25 | 62 | | 60.1 | | 5 | + | 5 | + |
| VA08H-7WS | 60 | - | 60.8 | + | 1 | - | 7 | + |
| VA08H-79WS | 50 | - | 59.3 | | 1 | - | 8 | + |
| Average | 70 | | 59.4 | | 2 | | 4 | |
| LSD (0.05) | 10 | | 1.4 | | 1 | | 1 | |
| C.V. | 10 | | 1.6 | | --- | | --- | |

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

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

WS in the line designation indicates a white-seeded line.

2R in the line designation indicates a 2 row line.

**Table 8. Summary of performance of hulless entries in the Virginia Tech Barley Test, Northern Piedmont AREC, Orange, VA, 2011 harvest.**

| Hulless Lines | Yield (Bu/a @ 48 lb/bu) | | Test Weight (Lb/bu) | | Height (In) | | Lodging (0-9) | | Powdery Mildew (0-9) | |
|---|---|---|---|---|---|---|---|---|---|---|
| VA09H-112(2R) | 105 | | 57.2 | + | 47 | + | 2 | | 2 | |
| VA09H-4 | 105 | | 53.5 | | 39 | - | 0 | - | 4 | |
| VA06H-79 | 100 | | 54.9 | | 42 | | 4 | | 2 | - |
| VA09H-111(2R) | 100 | | 56.0 | + | 44 | + | 4 | | 2 | - |
| VA09H-178WS | 99 | | 52.8 | | 41 | | 5 | | 1 | - |
| VA08H-6WS | 98 | | 54.2 | | 42 | | 5 | | 7 | + |
| VA08H-5 | 95 | | 55.4 | | 44 | + | 3 | | 7 | + |
| VA09H-174 | 94 | | 51.9 | - | 40 | - | 0 | - | 1 | - |
| **Eve** | 93 | | 56.1 | + | 40 | - | 2 | | 0 | - |
| **Doyce** | 93 | | 52.2 | | 41 | - | 2 | | 4 | |
| VA09H-3 | 91 | | 55.4 | | 43 | + | 6 | | 1 | - |
| **Dan** | 90 | | 56.6 | + | 39 | - | 2 | | 3 | |
| VA07H-31WS | 89 | | 52.2 | | 43 | | 3 | | 7 | + |
| VA08H-7WS | 89 | | 55.0 | | 42 | | 6 | | 8 | + |
| VA06H-3WS | 88 | | 53.2 | | 42 | | 4 | | 8 | + |
| VA07H-35WS | 87 | | 54.8 | | 43 | | 5 | | 6 | |
| VA06H-25 | 86 | | 52.6 | | 41 | | 6 | | 6 | |
| VA09H-110(2R) | 81 | | 55.1 | | 45 | + | 4 | | 2 | - |
| VA07H-10WS | 78 | | 53.4 | | 42 | | 6 | | 7 | + |
| VA08H-72 | 78 | | 53.7 | | 43 | | 6 | | 2 | - |
| VA06H-30 | 76 | | 49.9 | - | 42 | | 6 | | 8 | + |
| VA08H-79WS | 73 | | 54.3 | | 42 | | 2 | | 9 | + |
| VA06H-149 | 71 | - | 51.2 | - | 41 | - | 6 | | 4 | |
| Average | 90 | | 54.0 | | 42 | | 4 | | 4 | |
| LSD (0.05) | 18 | | 2.0 | | 1 | | 3 | | 2 | |
| C.V. | 14 | | 2.6 | | 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.
WS in the line designation indicates a white-seeded line.
2R in the line designation indicates a 2 row line.

**Table 9. Summary of performance of hulless entries in the Virginia Tech Barley Test, Kentland Farm, Blacksburg, VA, 2011 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) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VA06H-25 | 107 | + | 58.0 | | 117 | | 38 | + | 0 | | 5 | | 2 | |
| VA07H-31WS | 104 | + | 58.2 | | 117 | | 37 | | 0 | | 4 | | 3 | |
| VA07H-35WS | 104 | + | 58.1 | | 117 | | 37 | | 0 | | 4 | | 2 | |
| VA06H-3WS | 103 | + | 58.1 | | 117 | | 37 | | 0 | | 4 | | 4 | |
| **Eve** | 98 | + | 58.4 | + | 113 | - | 35 | | 1 | | 3 | - | 6 | + |
| VA08H-7WS | 95 | | 58.4 | + | 117 | | 37 | | 0 | | 3 | - | 5 | + |
| VA08H-5 | 95 | | 59.1 | + | 117 | | 38 | + | 0 | | 2 | - | 5 | + |
| VA06H-30 | 95 | | 57.9 | | 118 | + | 37 | | 0 | | 4 | | 3 | |
| VA09H-3 | 95 | | 57.9 | | 115 | - | 39 | + | 0 | | 6 | | 3 | |
| VA08H-6WS | 94 | | 58.7 | + | 116 | | 37 | | 0 | | 3 | - | 3 | |
| VA09H-4 | 93 | | 57.0 | - | 116 | | 32 | - | 0 | | 6 | | 3 | |
| VA07H-10WS | 93 | | 57.6 | | 116 | | 39 | + | 0 | | 3 | - | 5 | |
| VA09H-112(2R) | 92 | | 59.6 | + | 116 | | 38 | + | 0 | | 5 | | 3 | |
| VA09H-110(2R) | 92 | | 58.4 | + | 118 | + | 37 | | 1 | | 4 | | 3 | |
| VA09H-174 | 86 | | 56.8 | - | 120 | + | 33 | - | 0 | | 5 | | 2 | |
| VA09H-178WS | 86 | | 57.3 | | 116 | - | 34 | - | 0 | | 6 | | 3 | |
| **Dan** | 84 | - | 59.2 | + | 117 | | 33 | - | 1 | | 3 | - | 5 | + |
| VA09H-111(2R) | 84 | - | 59.0 | + | 117 | | 37 | | 0 | | 5 | | 3 | |
| VA08H-79WS | 82 | - | 56.9 | - | 118 | + | 36 | | 1 | | 7 | + | 3 | |
| VA06H-79 | 81 | - | 55.9 | - | 117 | | 35 | | 0 | | 9 | + | 2 | |
| VA08H-72 | 80 | - | 57.3 | | 117 | | 37 | | 0 | | 6 | | 3 | |
| VA06H-149 | 77 | - | 56.0 | - | 118 | + | 35 | | 0 | | 7 | + | 3 | |
| **Doyce** | 75 | - | 55.2 | - | 115 | - | 34 | - | 2 | + | 7 | + | 5 | + |
| Average | 91 | | 57.8 | | 117 | | 36 | | 0 | | 5 | | 3 | |
| LSD (0.05) | 7 | | 0.6 | | 1 | | 2 | | 1 | | 1 | | 1 | |
| C.V. | 6 | | 0.7 | | 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.
WS in the line designation indicates a white-seeded line.
2R in the line designation indicates a 2 row line.

**Table 10. Summary of performance of hulled entries in the Virginia Tech Barley Test over locations, 2011 harvest.**

| Hulled Lines | Yield (Bu/a) (6) | | Test Weight (Lb/bu) (6) | | Date Headed (Julian) (2) | | Height (In) (3) | | Lodging (0-9) (6) | | Leaf Rust (0-9) (1) | | Powdery Mildew (0-9) (2) | | Net Blotch (0-9) (3) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VA08B-85 | 116 | + | 47.9 | + | 111 | | 34 | | 5 | | 2 | - | 0 | - | 3 | |
| VA09B-4 | 116 | + | 45.0 | - | 113 | + | 33 | - | 4 | - | 4 | | 0 | - | 3 | |
| VA08B-108 | 115 | + | 46.3 | | 110 | | 35 | | 4 | - | 3 | | 0 | - | 4 | |
| VA08B-84 | 113 | | 47.7 | + | 110 | - | 34 | | 5 | | 1 | - | 0 | - | 4 | |
| VA08B-96 | 113 | | 45.8 | - | 109 | - | 36 | + | 5 | | 2 | - | 0 | - | 3 | - |
| VA06B-48 | 112 | | 45.8 | - | 109 | - | 35 | | 4 | | 7 | + | 0 | - | 2 | - |
| VA08B-89 | 112 | | 47.8 | + | 110 | | 35 | | 4 | | 1 | - | 1 | | 3 | |
| VA09B-29 | 111 | | 45.2 | - | 114 | + | 36 | | 3 | - | 4 | | 1 | | 4 | |
| VA08B-109 | 111 | | 47.0 | | 111 | + | 34 | | 4 | | 2 | - | 0 | - | 2 | - |
| VA06B-25 | 111 | | 46.6 | | 108 | - | 35 | | 4 | | 5 | | 0 | - | 4 | + |
| VA08B-90 | 110 | | 46.1 | | 111 | + | 33 | - | 6 | + | 7 | + | 0 | - | 2 | - |
| VA06B-22 | 109 | | 47.2 | + | 109 | - | 34 | | 4 | | 5 | | 0 | - | 5 | + |
| VA08B-111 | 109 | | 46.8 | | 109 | - | 33 | - | 4 | | 2 | - | 1 | | 2 | - |
| VA07B-53 | 108 | | 47.3 | + | 109 | - | 34 | | 5 | | 6 | + | 0 | - | 4 | |
| **Thoroughbred** | 108 | | 46.2 | | 114 | + | 37 | + | 4 | | 9 | + | 7 | + | 2 | - |
| VA09B-3 | 107 | | 45.0 | - | 114 | + | 34 | | 5 | | 5 | + | 1 | | 2 | - |
| VA07B-64 | 107 | | 46.4 | | 112 | + | 35 | | 5 | | 6 | + | 0 | - | 6 | + |
| VA09B-34 | 107 | | 48.3 | + | 110 | - | 38 | + | 4 | | 3 | - | 1 | | 4 | |
| VA07B-61 | 106 | | 47.5 | + | 109 | - | 35 | | 5 | | 5 | | 0 | - | 4 | + |
| VA08B-82 | 105 | | 46.7 | | 110 | | 34 | | 5 | | 3 | - | 2 | + | 4 | |
| VA07B-59 | 104 | | 46.9 | | 109 | - | 34 | | 6 | + | 5 | | 0 | - | 4 | |
| VA08B-94 | 103 | | 46.2 | | 111 | + | 36 | + | 6 | + | 2 | - | 0 | - | 3 | |
| **Atlantic** | 103 | | 46.2 | | 109 | - | 34 | | 5 | | 6 | + | 0 | - | 4 | |
| **Callao** | 102 | - | 46.0 | | 109 | - | 33 | - | 7 | + | 6 | + | 0 | - | 3 | - |
| VA08B-95 | 102 | - | 44.9 | - | 110 | | 35 | | 6 | + | 2 | - | 8 | + | 1 | - |
| **Barsoy** | 101 | - | 46.5 | | 108 | - | 38 | + | 4 | | 9 | + | 1 | + | 2 | - |
| **Price** | 100 | - | 46.0 | | 112 | + | 34 | - | 4 | | 4 | | 0 | - | 8 | + |
| MD02B27-08-16 | 99 | - | 47.0 | | 111 | + | 36 | + | 4 | - | 2 | - | 0 | - | 7 | + |
| | | | | | | | | | | | | | | | | |
| Average | 108 | | 46.5 | | 110 | | 35 | | 5 | | 4 | | 1 | | 3 | |
| LSD (O.05) | 6 | | 0.7 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | |
| C.V. | 9 | | 2.5 | | 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.

**Table 11. Two year average summary of performance of hulled entries in the Virginia Tech Barley Tests, 2010 and 2011 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) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (12) | | (12) | | (5) | | (6) | | (10) | | (3) | | (4) | | (5) | |
| VA08B-90 | 102 | + | 46.4 | | 112 | + | 30 | - | 5 | + | 3 | | 0 | - | 2 | - |
| VA08B-84 | 102 | + | 47.5 | + | 111 | | 31 | | 5 | | 1 | - | 0 | - | 3 | |
| VA08B-108 | 101 | + | 46.4 | | 111 | + | 32 | | 3 | - | 3 | - | 0 | - | 3 | |
| VA06B-22 | 100 | | 47.5 | + | 109 | - | 32 | | 4 | | 3 | | 0 | - | 4 | |
| VA06B-48 | 100 | | 46.2 | | 109 | - | 32 | | 4 | | 4 | | 0 | - | 2 | - |
| VA06B-25 | 100 | | 47.0 | | 109 | - | 32 | | 4 | | 4 | | 0 | - | 4 | |
| **Thoroughbred** | 100 | | 45.8 | - | 115 | + | 34 | + | 3 | - | 7 | + | 5 | + | 2 | - |
| VA07B-53 | 99 | | 47.7 | + | 110 | - | 32 | | 5 | | 4 | | 0 | - | 3 | |
| VA07B-64 | 99 | | 46.7 | | 112 | + | 32 | | 4 | | 4 | | 0 | - | 4 | + |
| VA07B-61 | 99 | | 47.3 | | 110 | - | 32 | | 5 | | 4 | | 0 | - | 3 | |
| VA08B-111 | 98 | | 47.1 | | 110 | - | 30 | - | 4 | | 2 | - | 1 | | 2 | - |
| Average | 100 | | 46.9 | | 111 | | 32 | | 4 | | 4 | | 1 | | 3 | |
| VA08B-94 | 96 | | 46.4 | | 113 | + | 33 | + | 5 | + | 1 | - | 0 | - | 2 | |
| VA07B-59 | 96 | | 47.5 | + | 109 | - | 32 | | 5 | + | 3 | | 0 | - | 3 | |
| **Atlantic** | 95 | | 46.9 | | 109 | - | 31 | | 5 | | 4 | | 0 | - | 3 | |
| VA08B-95 | 94 | | 45.2 | - | 111 | + | 33 | | 5 | + | 1 | - | 5 | + | 1 | - |
| **Callao** | 93 | - | 46.7 | | 109 | - | 30 | - | 6 | + | 4 | | 0 | - | 2 | - |
| **Price** | 90 | - | 46.4 | | 112 | + | 32 | | 3 | - | 4 | | 0 | - | 8 | + |
| **Barsoy** | 88 | - | 46.3 | | 109 | - | 36 | + | 4 | | 8 | + | 1 | | 2 | - |
| Average | 97 | | 46.7 | | 110 | | 32 | | 4 | | 4 | | 1 | | 3 | |
| LSD (O.05) | 4 | | 0.7 | | 1 | | 1 | | 1 | | 1 | | 0 | | 1 | |
| C.V. | 10 | | 3.7 | | 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, 2009, 2010, and 2011 harvests.**

| Hulled Lines | Yield (Bu/a) (17) | | Test Weight (Lb/bu) (17) | | Date Headed (Julian) (8) | | Height (In) (9) | | Lodging (0-9) (16) | | Leaf Rust (0-9) (5) | | Powdery Mildew (0-9) (7) | | Net Blotch (0-9) (7) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VA06B-48 | 98 | + | 45.3 | - | 110 | - | 32 | - | 3 | - | 4 | | 0 | - | 2 | - |
| VA07B-64 | 97 | + | 46.1 | | 112 | + | 32 | | 4 | | 4 | | 0 | - | 4 | + |
| **Thoroughbred** | 97 | + | 45.2 | - | 115 | + | 35 | + | 3 | - | 7 | + | 5 | + | 2 | - |
| VA06B-22 | 96 | | 46.4 | | 110 | - | 32 | | 4 | | 3 | - | 0 | - | 3 | |
| VA07B-61 | 96 | | 46.6 | + | 110 | - | 33 | | 4 | | 3 | - | 0 | - | 3 | |
| VA07B-59 | 93 | | 46.7 | + | 110 | - | 33 | | 4 | | 3 | - | 0 | - | 3 | |
| **Atlantic** | 93 | | 46.0 | | 110 | - | 32 | | 4 | | 4 | | 0 | - | 3 | |
| **Callao** | 91 | | 45.7 | | 110 | - | 31 | - | 5 | + | 4 | | 0 | - | 2 | - |
| **Price** | 85 | - | 45.7 | | 112 | + | 32 | - | 3 | - | 4 | | 0 | - | 7 | + |
| **Barsoy** | 83 | - | 45.3 | - | 110 | - | 36 | + | 4 | | 7 | + | 1 | | 2 | - |
| Average | 93 | | 45.9 | | 111 | | 33 | | 4 | | 4 | | 1 | | 3 | |
| LSD (O.05) | 3 | | 0.6 | | 0 | | 1 | | 0 | | 1 | | 0 | | 1 | |
| C.V. | 10 | | 3.7 | | 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 and 9 = highly susceptible.

**Table 13. Summary of performance of hulled entries in the Virginia Tech Barley Test, Southern Piedmont AREC, Blackstone, VA, 2011 harvest.**

| Hulled Lines | Yield (Bu/a) | | Test Weight (Lb/bu) | | Lodging (0-9) | | Net Blotch (0-9) | |
|---|---|---|---|---|---|---|---|---|
| VA08B-85 | 116 | | 48.7 | + | 5 | | 3 | |
| VA09B-29 | 115 | | 45.2 | - | 5 | | 4 | + |
| VA08B-108 | 115 | | 46.4 | | 4 | | 2 | |
| VA08B-96 | 114 | | 45.6 | - | 6 | | 3 | |
| VA06B-25 | 114 | | 47.1 | | 5 | | 3 | |
| VA07B-53 | 114 | | 48.7 | + | 5 | | 3 | |
| VA09B-34 | 114 | | 48.7 | + | 4 | | 1 | - |
| VA06B-48 | 114 | | 46.7 | | 5 | | 3 | |
| VA08B-94 | 113 | | 47.7 | | 5 | | 2 | |
| **Barsoy** | 112 | | 47.1 | | 5 | | 2 | |
| **Thoroughbred** | 110 | | 47.2 | | 5 | | 3 | |
| VA07B-61 | 110 | | 48.2 | | 5 | | 3 | |
| VA06B-22 | 109 | | 47.7 | | 5 | | 4 | |
| VA09B-4 | 109 | | 46.2 | | 6 | | 4 | + |
| VA08B-89 | 107 | | 48.2 | | 5 | | 2 | |
| VA08B-90 | 106 | | 48.0 | | 5 | | 1 | |
| VA07B-64 | 105 | | 46.7 | | 5 | | 4 | |
| VA08B-95 | 105 | | 46.1 | | 5 | | 1 | - |
| MD02B27-08-16 | 104 | | 48.1 | | 4 | | 3 | |
| **Price** | 103 | | 47.0 | | 5 | | 6 | + |
| VA08B-84 | 103 | | 48.5 | + | 5 | | 4 | + |
| VA08B-109 | 102 | | 46.3 | | 6 | | 1 | - |
| VA92-42-46 | 102 | | 46.7 | | 5 | | 6 | + |
| **Atlantic** | 102 | | 47.0 | | 5 | | 3 | |
| VA09B-3 | 101 | | 44.8 | - | 6 | | 1 | |
| VA07B-59 | 101 | | 48.2 | | 5 | | 2 | |
| **Nomini** | 100 | | 46.4 | | 5 | | 2 | |
| VA08B-82 | 99 | | 47.1 | | 6 | | 3 | |
| VA08B-111 | 98 | | 46.8 | | 5 | | 2 | |
| **Callao** | 95 | | 46.0 | | 7 | + | 2 | |
| **Wysor** | 92 | - | 44.9 | - | 6 | | 2 | |
| | | | | | | | | |
| Average | 107 | | 47.0 | | 5 | | 3 | |
| LSD (O.05) | 14 | | 1.3 | | 1 | | 1 | |
| C.V. | 9 | | 2.0 | | --- | | --- | |

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 14. Summary of performance of hulled entries in the Virginia Tech Barley Test planted no-till at the Tidewater AREC, Holland, VA, 2011 harvest.**

| Hulled Lines | Yield (Bu/a) | | Test Weight (Lb/bu) | | Lodging (0-9) | |
|---|---|---|---|---|---|---|
| **Wysor** | * | | * | | * | |
| **Nomini** | * | | * | | * | |
| VA92-42-46 | * | | * | | * | |
| VA08B-95 | 89 | | 44.8 | - | 7 | |
| **Thoroughbred** | 88 | | 45.9 | | 6 | |
| VA09B-4 | 87 | | 45.8 | | 5 | |
| **Callao** | 86 | | 46.5 | | 7 | |
| VA08B-96 | 85 | | 46.7 | | 6 | |
| MD02B27-08-16 | 84 | | 48.8 | + | 5 | |
| VA09B-3 | 82 | | 45.5 | | 6 | |
| VA07B-61 | 81 | | 47.8 | | 8 | + |
| VA07B-59 | 81 | | 46.5 | | 7 | |
| VA08B-109 | 81 | | 46.7 | | 7 | |
| VA06B-48 | 81 | | 44.4 | - | 6 | |
| VA06B-25 | 80 | | 46.4 | | 7 | |
| VA08B-108 | 80 | | 46.7 | | 6 | |
| VA08B-111 | 80 | | 47.1 | | 5 | - |
| VA06B-22 | 80 | | 47.4 | | 7 | |
| VA09B-29 | 79 | | 47.3 | | 4 | - |
| VA09B-34 | 79 | | 47.6 | | 5 | |
| VA07B-53 | 78 | | 47.6 | | 7 | |
| VA08B-84 | 77 | | 46.4 | | 7 | |
| VA07B-64 | 77 | | 45.9 | | 7 | |
| VA08B-90 | 76 | | 47.2 | | 7 | |
| **Price** | 75 | | 47.9 | | 5 | |
| VA08B-94 | 74 | | 46.8 | | 6 | |
| VA08B-85 | 74 | | 47.1 | | 6 | |
| **Barsoy** | 73 | | 47.1 | | 5 | |
| VA08B-82 | 72 | | 47.5 | | 7 | |
| VA08B-89 | 72 | | 47.7 | | 7 | |
| **Atlantic** | 71 | | 45.6 | | 7 | |
| | | | | | | |
| Average | 79 | | 46.7 | | 6 | |
| LSD (O.05) | 13 | | 1.9 | | 1 | |
| C.V. | 11 | | 2.9 | | --- | |

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.

* Line or variety was severely deer-damaged at this location.

**Table 15. Summary of performance of hulled entries in the Virginia Tech Barley Test, Eastern Virginia AREC, Warsaw, VA, 2011 harvest.**

| Hulled Lines | Yield (Bu/a) | | Test Weight (Lb/bu) | | Date Headed (Julian) | | Height (In) | | Lodging (0-9) | | Powdery Mildew (0-9) | | Net Blotch (0-9) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VA08B-96 | 167 | + | 46.1 | | 106 | - | 34 | | 4 | | 0 | - | 3 | - |
| VA09B-4 | 167 | + | 46.6 | | 110 | + | 33 | | 2 | - | 0 | | 3 | - |
| VA09B-29 | 164 | + | 45.9 | - | 111 | + | 36 | | 1 | - | 2 | + | 5 | |
| VA08B-85 | 162 | | 48.3 | + | 107 | | 34 | | 6 | + | 0 | - | 3 | |
| VA08B-90 | 160 | | 47.0 | | 107 | | 33 | - | 5 | | 0 | - | 2 | - |
| VA09B-3 | 159 | | 46.9 | | 110 | + | 33 | | 4 | | 1 | | 1 | - |
| **Thoroughbred** | 158 | | 48.8 | + | 111 | + | 35 | | 2 | - | 8 | + | 1 | - |
| VA08B-108 | 158 | | 46.5 | | 107 | | 34 | | 4 | | 0 | - | 5 | |
| VA08B-84 | 158 | | 48.9 | + | 106 | | 34 | | 5 | | 0 | | 4 | |
| VA08B-109 | 157 | | 48.6 | + | 108 | + | 34 | | 4 | | 0 | | 2 | - |
| VA08B-111 | 155 | | 47.5 | | 106 | - | 33 | | 5 | | 3 | + | 2 | - |
| **Nomini** | 155 | | 46.2 | | 106 | | 41 | + | 1 | - | 0 | - | 2 | - |
| VA06B-25 | 155 | | 47.2 | | 104 | - | 35 | | 4 | | 1 | | 6 | + |
| VA06B-48 | 154 | | 46.0 | | 105 | - | 34 | | 4 | | 1 | | 3 | - |
| VA07B-64 | 154 | | 47.5 | | 108 | + | 35 | | 4 | | 0 | - | 8 | + |
| **Atlantic** | 153 | | 46.7 | | 105 | - | 35 | | 4 | | 0 | - | 6 | + |
| VA06B-22 | 152 | | 46.9 | | 105 | - | 35 | | 3 | | 0 | | 6 | + |
| VA07B-53 | 150 | | 47.1 | | 105 | - | 34 | | 5 | | 0 | - | 6 | + |
| VA08B-89 | 150 | | 48.4 | + | 106 | | 34 | | 4 | | 1 | | 4 | |
| **Barsoy** | 149 | | 48.0 | | 105 | - | 36 | | 4 | | 3 | + | 2 | - |
| VA07B-59 | 149 | | 47.4 | | 105 | - | 34 | | 4 | | 0 | - | 6 | |
| VA07B-61 | 146 | | 47.6 | | 105 | - | 35 | | 4 | | 0 | - | 7 | + |
| **Wysor** | 143 | | 44.4 | - | 107 | | 40 | + | 5 | | 0 | - | 5 | |
| VA08B-82 | 142 | | 46.5 | | 107 | | 34 | | 7 | + | 3 | + | 4 | |
| **Price** | 141 | | 46.7 | | 108 | + | 33 | - | 4 | | 1 | | 9 | + |
| MD02B27-08-16 | 139 | | 47.1 | | 107 | | 35 | | 4 | | 0 | - | 9 | + |
| VA08B-94 | 136 | | 45.9 | - | 108 | + | 36 | | 7 | + | 1 | | 3 | - |
| VA92-42-46 | 133 | - | 45.0 | - | 107 | | 41 | + | 5 | | 0 | - | 9 | + |
| VA09B-34 | 133 | - | 49.6 | + | 107 | | 35 | | 4 | | 1 | | 6 | + |
| **Callao** | 133 | - | 47.0 | | 106 | - | 33 | - | 7 | + | 0 | - | 4 | |
| VA08B-95 | 120 | - | 43.6 | - | 107 | | 34 | | 7 | + | 9 | + | 0 | - |
| | | | | | | | | | | | | | | |
| Average | 150 | | 47.0 | | 107 | | 35 | | 4 | | 1 | | 4 | |
| LSD (O.05) | 13 | | 1.1 | | 1 | | 2 | | 2 | | 1 | | 1 | |
| C.V. | 6 | | 1.6 | | 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 16. Summary of performance of hulled entries in the Virginia Tech Barley Test, Eastern Shore AREC, Painter, VA, 2011 harvest.**

| Hulled Lines | Yield (Bu/a) | | Test Weight (Lb/bu) | | Lodging (0-9) | | Powdery Mildew (0-9) | |
|---|---|---|---|---|---|---|---|---|
| VA08B-109 | 88 | | 47.1 | | 4 | | 0 | - |
| VA08B-84 | 86 | | 47.8 | | 5 | | 0 | - |
| VA08B-90 | 86 | | 43.8 | - | 5 | | 0 | - |
| **Callao** | 86 | | 46.3 | | 6 | + | 0 | |
| VA08B-89 | 86 | | 47.6 | | 5 | | 1 | |
| VA07B-64 | 84 | | 47.5 | | 4 | | 1 | |
| VA06B-48 | 84 | | 46.3 | | 5 | | 0 | - |
| VA06B-25 | 82 | | 47.7 | | 3 | | 0 | - |
| **Price** | 82 | | 46.7 | | 3 | - | 0 | - |
| VA07B-61 | 82 | | 48.5 | | 4 | | 0 | - |
| VA09B-4 | 82 | | 45.0 | | 5 | | 0 | - |
| VA07B-59 | 82 | | 48.3 | | 5 | | 0 | |
| **Atlantic** | 82 | | 47.8 | | 5 | | 0 | - |
| MD02B27-08-16 | 81 | | 47.0 | | 4 | | 0 | - |
| **Nomini** | 81 | | 46.2 | | 5 | | 0 | - |
| VA06B-22 | 81 | | 47.9 | | 3 | | 0 | |
| VA08B-108 | 81 | | 45.5 | | 3 | - | 0 | - |
| **Wysor** | 79 | | 46.2 | | 5 | | 0 | - |
| VA08B-85 | 78 | | 47.9 | | 5 | | 0 | - |
| **Thoroughbred** | 77 | | 47.2 | | 4 | | 7 | + |
| VA08B-82 | 76 | | 46.2 | | 5 | | 2 | + |
| VA09B-34 | 76 | | 48.2 | | 5 | | 0 | - |
| **Barsoy** | 75 | | 46.5 | | 4 | | 0 | - |
| VA08B-96 | 75 | | 45.8 | | 3 | - | 0 | - |
| VA07B-53 | 74 | | 48.9 | + | 5 | | 0 | - |
| VA92-42-46 | 74 | | 46.0 | | 4 | | 0 | - |
| VA09B-29 | 74 | | 46.0 | | 3 | - | 0 | - |
| VA09B-3 | 74 | | 45.7 | | 4 | | 1 | |
| VA08B-111 | 74 | | 45.8 | | 5 | | 0 | - |
| VA08B-94 | 72 | | 47.9 | | 6 | + | 0 | - |
| VA08B-95 | 66 | - | 44.7 | - | 5 | | 7 | + |
| | | | | | | | | |
| Average | 79 | | 46.8 | | 4 | | 1 | |
| LSD (O.05) | 12 | | 1.9 | | 1 | | 1 | |
| C.V. | 10 | | 2.9 | | --- | | --- | |

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 17. Summary of performance of hulled entries in the Virginia Tech Barley Test, Northern Piedmont AREC, Orange, VA, 2011 harvest.**

| Hulled Lines | Yield (Bu/a) | | Test Weight (Lb/bu) | | Height (In) | | Lodging (0-9) | |
|---|---|---|---|---|---|---|---|---|
| VA08B-85 | 136 | + | 46.8 | + | 37 | - | 4 | |
| VA08B-108 | 134 | + | 45.7 | | 38 | | 3 | |
| VA09B-4 | 133 | | 43.0 | | 36 | - | 2 | |
| VA08B-89 | 128 | | 46.4 | + | 37 | | 3 | |
| VA08B-82 | 126 | | 45.1 | | 37 | | 2 | |
| VA06B-48 | 125 | | 44.6 | | 38 | | 3 | |
| VA09B-3 | 124 | | 43.9 | | 37 | | 4 | |
| VA09B-29 | 121 | | 43.1 | | 38 | | 2 | |
| VA08B-84 | 121 | | 45.6 | | 37 | - | 5 | |
| VA06B-22 | 121 | | 45.4 | | 37 | - | 2 | |
| VA09B-34 | 121 | | 47.0 | + | 42 | + | 5 | |
| VA08B-90 | 120 | | 44.6 | | 37 | - | 7 | |
| VA07B-53 | 119 | | 44.4 | | 37 | | 5 | |
| VA08B-109 | 117 | | 44.7 | | 37 | - | 2 | |
| VA08B-111 | 117 | | 46.2 | | 36 | - | 6 | |
| VA07B-64 | 116 | | 44.6 | | 36 | - | 4 | |
| VA07B-61 | 114 | | 45.6 | | 38 | | 3 | |
| VA06B-25 | 114 | | 43.4 | | 38 | | 3 | |
| **Atlantic** | 109 | | 43.6 | | 36 | - | 4 | |
| **Callao** | 109 | | 43.4 | | 35 | - | 8 | + |
| **Nomini** | 108 | | 43.7 | | 45 | + | 5 | |
| VA07B-59 | 104 | | 43.8 | | 37 | | 6 | |
| **Barsoy** | 104 | | 44.2 | | 42 | + | 5 | |
| MD02B27-08-16 | 104 | | 45.9 | | 41 | + | 1 | |
| VA08B-94 | 103 | | 42.4 | - | 39 | | 8 | + |
| **Price** | 101 | | 43.4 | | 37 | | 3 | |
| VA08B-95 | 101 | | 43.3 | | 38 | | 8 | + |
| VA08B-96 | 97 | | 44.2 | | 40 | | 6 | |
| **Thoroughbred** | 97 | | 42.8 | | 41 | + | 8 | + |
| **Wysor** | 95 | | 42.5 | | 42 | + | 7 | |
| VA92-42-46 | 90 | - | 43.0 | | 46 | + | 4 | |
| | | | | | | | | |
| Average | 114 | | 44.4 | | 38 | | 4 | |
| LSD (O.05) | 20 | | 2.0 | | 2 | | 3 | |
| C.V. | 12 | | 3.2 | | 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 18. Summary of performance of hulled entries in the Virginia Tech Barley Test, Kentland Farm, Blacksburg, VA, 2011 harvest.**

| Hulled Lines | Yield (Bu/a) | | Test Weight (Lb/bu) | | Date Headed (Julian) | | Height (In) | | Lodging (0-9) | | Leaf Rust (0-9) | | Net Blotch (0-9) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VA08B-96 | 137 | + | 46.7 | | 113 | | 34 | | 5 | | 2 | - | 3 | - |
| VA08B-84 | 133 | + | 49.1 | + | 113 | | 32 | | 2 | | 1 | - | 3 | |
| VA08B-85 | 133 | + | 48.4 | + | 115 | | 33 | | 4 | | 2 | - | 3 | - |
| VA08B-111 | 129 | + | 47.6 | + | 113 | | 31 | - | 1 | | 2 | - | 3 | |
| VA08B-95 | 128 | + | 46.7 | | 114 | | 35 | | 3 | | 2 | - | 3 | |
| VA08B-89 | 128 | + | 48.3 | + | 114 | | 33 | | 1 | | 1 | - | 5 | |
| VA08B-109 | 122 | | 48.2 | + | 115 | | 32 | | 3 | | 2 | - | 3 | |
| VA08B-108 | 122 | | 46.9 | | 114 | | 32 | | 1 | | 3 | | 4 | |
| VA09B-34 | 122 | | 48.8 | + | 113 | - | 35 | | 1 | | 3 | - | 4 | |
| VA08B-82 | 121 | | 47.4 | | 113 | | 32 | | 3 | | 3 | - | 3 | |
| VA08B-94 | 119 | | 46.9 | | 115 | + | 34 | | 3 | | 2 | - | 5 | |
| **Nomini** | 118 | | 45.0 | - | 112 | - | 40 | + | 0 | - | 6 | + | 1 | - |
| **Thoroughbred** | 118 | | 45.4 | | 116 | + | 36 | + | 1 | | 9 | + | 3 | - |
| VA06B-25 | 117 | | 47.5 | + | 112 | - | 31 | - | 4 | | 5 | | 3 | |
| VA09B-4 | 116 | | 43.6 | - | 116 | + | 31 | - | 2 | | 4 | | 3 | |
| VA06B-22 | 114 | | 47.8 | + | 113 | - | 31 | - | 3 | | 5 | | 4 | |
| VA09B-29 | 114 | | 43.6 | - | 118 | + | 34 | | 2 | | 4 | | 3 | |
| VA06B-48 | 113 | | 46.7 | | 113 | | 32 | | 2 | | 7 | + | 2 | - |
| VA08B-90 | 111 | | 46.2 | | 115 | + | 31 | - | 6 | + | 7 | + | 2 | - |
| VA07B-53 | 111 | | 47.2 | | 113 | | 31 | - | 5 | | 6 | + | 3 | - |
| VA92-42-46 | 105 | | 44.8 | - | 115 | | 41 | + | 2 | | 1 | - | 7 | + |
| VA09B-3 | 104 | | 43.6 | - | 117 | + | 31 | - | 6 | | 5 | + | 2 | - |
| VA07B-61 | 104 | | 47.3 | | 113 | - | 31 | | 5 | | 5 | | 4 | |
| VA07B-59 | 104 | | 47.5 | + | 113 | - | 31 | - | 7 | + | 5 | | 4 | |
| **Callao** | 101 | | 47.5 | + | 112 | - | 31 | | 6 | | 6 | + | 2 | - |
| **Atlantic** | 100 | | 46.5 | | 113 | - | 31 | - | 6 | + | 6 | + | 4 | |
| VA07B-64 | 100 | | 46.4 | | 115 | + | 33 | | 4 | | 6 | + | 5 | + |
| **Barsoy** | 95 | - | 45.9 | | 111 | - | 35 | | 2 | | 9 | + | 3 | |
| **Price** | 94 | - | 44.4 | - | 115 | + | 31 | - | 4 | | 4 | | 8 | + |
| **Wysor** | 93 | - | 43.2 | - | 114 | | 40 | + | 2 | | 9 | + | 3 | |
| MD02B27-08-16 | 83 | - | 45.1 | - | 115 | + | 33 | | 5 | | 2 | - | 9 | + |
| | | | | | | | | | | | | | | |
| Average | 113 | | 46.4 | | 114 | | 33 | | 3 | | 4 | | 4 | |
| LSD (O.05) | 14 | | 1.1 | | 1 | | 2 | | 3 | | 1 | | 1 | |
| C.V. | 8 | | 1.7 | | 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 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 infection was obtained in 2011. Among 23 hulless lines and varieties tested in 2011, the FHB index ranged from 1 to 16 with FHB incidence ranging from 25% to 80% and FHB severity from 3% to 20% (Table 19). All lines had severity less than 10% except Doyce. Based on two year mean data for 2010 and 2011 (Table 20), three lines and two varieties had FHB index values lower than the test mean (<2). Six hulless barley lines (VA06H-3WS, VA06H-25, VA06H-79, VA07H-10WS, VA07H-31WS, and VA07H-35WS) and two varieties (Eve and Dan) tested across three years (2009-2011) had average FHB index values lower than the test mean of 4 (Table 21).

A low FHB infection level was obtained for hulled barley in 2011. Among 31 barley lines and varieties tested in 2011, the FHB index varied from 1 to 11 with FHB incidence ranging from 30% to 85% and FHB severity ranging from 3% to 12% (Table 22). Nine lines and two varieties had FHB index values lower than the mean (<4) and expressed moderate resistance to FHB. Based on two year mean data for 2010 and 2011 (Table 23), five lines and five varieties had FHB index values lower than the test mean (<7). One hulled barley lines (VA92-42-46) and four varieties (Wysor, Barsoy, Thoroughbred, and Nomini) tested across three years (2009-2011) had average FHB index values lower than the test mean of 6 (Table 24).

**Table 19. Summary of reaction of entries in the Virginia Tech State Hulless Barley Test to Fusarium head blight (scab), 2011 harvest.**

| LINE | FHB Incidence[1] (%) | FHB Severity[2] (%) | FHB Index[3] (0-100) | Rank FHB Index |
|---|---|---|---|---|
| **Dan** | 25 | 3 | 1 | 1 |
| VA06H-3WS | 30 | 3 | 1 | 2 |
| VA07H-31WS | 30 | 3 | 1 | 3 |
| VA09H-112(2R) | 30 | 3 | 1 | 4 |
| **Eve** | 35 | 4 | 2 | 5 |
| VA08H-5BS | 35 | 5 | 2 | 6 |
| VA08H-6WS | 40 | 4 | 2 | 7 |
| VA06H-25 | 40 | 5 | 3 | 8 |
| VA07H-35WS | 45 | 5 | 3 | 9 |
| VA06H-30 | 40 | 5 | 3 | 10 |
| VA06H-149 | 50 | 5 | 3 | 11 |
| VA08H-7WS | 45 | 5 | 3 | 12 |
| VA09H-3 | 50 | 5 | 3 | 13 |
| VA09H-4 | 45 | 6 | 3 | 14 |
| VA06H-79 | 55 | 6 | 4 | 15 |
| VA07H-10WS | 55 | 6 | 4 | 16 |
| VA08H-72 | 55 | 7 | 4 | 17 |
| VA08H-79WS | 50 | 6 | 4 | 18 |
| VA09H-110(2R) | 50 | 6 | 4 | 19 |
| VA09H-174 | 45 | 7 | 4 | 20 |
| VA09H-178WS | 65 | 8 | 5 | 21 |
| VA09H-111(2R) | 70 | 9 | 8 | 22 |
| **Doyce** | 80 | 20 | 16 | 23 |
| Average | 46 | 6 | 4 | |
| LSD (0.05) | 34 | 5 | 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 20. Two year average summary of reaction of entries in the Virginia Tech State Hulless Barley Tests to Fusarium head blight (scab), 2010 and 2011 harvests.**

| LINE | FHB Incidence[1] (%) | FHB Severity[2] (%) | FHB Index[3] (0-100) | Rank FHB Index |
|---|---|---|---|---|
| **Eve** | 21 | 8 | 1 | 1 |
| **Dan** | 13 | 3 | 1 | 2 |
| VA06H-3WS | 16 | 3 | 1 | 3 |
| VA07H-31WS | 18 | 10 | 1 | 4 |
| VA08H-6WS | 23 | 6 | 1 | 5 |
| VA06H-25 | 24 | 6 | 2 | 6 |
| VA06H-79 | 30 | 6 | 2 | 7 |
| VA07H-10WS | 34 | 7 | 2 | 8 |
| VA07H-35WS | 26 | 5 | 2 | 9 |
| VA08H-5BS | 20 | 8 | 2 | 10 |
| VA08H-72 | 29 | 6 | 2 | 11 |
| VA06H-30 | 22 | 10 | 2 | 12 |
| VA06H-149 | 29 | 8 | 2 | 13 |
| **Doyce** | 46 | 14 | 8 | 14 |
| Average | 25 | 7 | 2 | |
| LSD (0.05) | 14 | 7 | 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 21. Three year average summary of reaction of entries in the Virginia Tech State Hulless Barley Tests to Fusarium head blight (scab), 2009 - 2011 harvests.**

| LINE | FHB Incidence[1] (%) | FHB Severity[2] (%) | FHB Index[3] (0-100) | Rank FHB Index |
|---|---|---|---|---|
| **Eve** | 18 | 10 | 1 | 1 |
| **Dan** | 15 | 9 | 2 | 2 |
| VA06H-3WS | 17 | 9 | 2 | 3 |
| VA06H-25 | 18 | 8 | 2 | 4 |
| VA06H-79 | 27 | 8 | 2 | 5 |
| VA07H-10WS | 28 | 7 | 2 | 6 |
| VA07H-31WS | 20 | 11 | 2 | 7 |
| VA07H-35WS | 23 | 11 | 3 | 8 |
| VA06H-182 | 28 | 13 | 4 | 9 |
| **Doyce** | 61 | 22 | 17 | 10 |
| Average | 26 | 11 | 4 | |
| LSD (0.05) | 11 | 8 | 4 | |

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), 2011 harvest.**

| LINE | FHB Incidence[1] (%) | FHB Severity[2] (%) | FHB Index[3] (0-100) | Rank FHB Index |
|---|---|---|---|---|
| VA09B-4 | 30 | 4 | 1 | 1 |
| MD02B27-08-16 | 30 | 3 | 1 | 2 |
| VA92-42-46 | 30 | 5 | 2 | 3 |
| VA08B-108 | 40 | 4 | 2 | 4 |
| VA08B-82 | 40 | 4 | 2 | 5 |
| VA09B-34 | 40 | 4 | 2 | 6 |
| **Thoroughbred** | 40 | 4 | 3 | 7 |
| **Barsoy** | 35 | 6 | 3 | 8 |
| VA08B-84 | 50 | 5 | 3 | 9 |
| VA09B-3 | 45 | 5 | 3 | 10 |
| VA09B-29 | 50 | 5 | 3 | 11 |
| **Wysor** | 55 | 7 | 4 | 12 |
| **Nomini** | 50 | 7 | 4 | 13 |
| **Price** | 50 | 7 | 4 | 14 |
| VA06B-48 | 55 | 6 | 4 | 15 |
| VA07B-61 | 50 | 8 | 4 | 16 |
| VA07B-64 | 55 | 6 | 4 | 17 |
| VA08B-90 | 55 | 7 | 4 | 18 |
| VA08B-94 | 60 | 6 | 4 | 19 |
| VA08B-85 | 60 | 6 | 4 | 20 |
| VA08B-89 | 55 | 6 | 4 | 21 |
| **Callao** | 65 | 8 | 5 | 22 |
| VA08B-95 | 65 | 7 | 5 | 23 |
| VA08B-109 | 65 | 7 | 5 | 24 |
| VA07B-53 | 70 | 8 | 6 | 25 |
| VA08B-111 | 60 | 9 | 6 | 26 |
| **Atlantic** | 70 | 8 | 7 | 27 |
| VA07B-59 | 70 | 12 | 9 | 28 |
| VA08B-96 | 75 | 11 | 9 | 29 |
| VA06B-25 | 90 | 11 | 10 | 30 |
| VA06B-22 | 85 | 12 | 11 | 31 |
| Average | 55 | 7 | 4 | |
| LSD (0.05) | 36 | 5 | 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 (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), 2010 and 2011 harvests.**

| LINE | FHB Incidence[1] (%) | FHB Severity[2] (%) | FHB Index[3] (0-100) | Rank FHB Index |
|---|---|---|---|---|
| **Barsoy** | 20 | 8 | 2 | 1 |
| VA08B-108 | 29 | 8 | 2 | 2 |
| **Wysor** | 36 | 8 | 3 | 3 |
| VA92-42-46 | 30 | 9 | 3 | 4 |
| **Price** | 33 | 10 | 3 | 5 |
| **Thoroughbred** | 29 | 12 | 3 | 6 |
| VA08B-94 | 38 | 11 | 3 | 7 |
| VA07B-64 | 40 | 12 | 4 | 8 |
| **Nomini** | 40 | 12 | 5 | 9 |
| VA07B-53 | 51 | 11 | 6 | 10 |
| **Callao** | 63 | 13 | 8 | 11 |
| VA08B-95 | 60 | 14 | 8 | 12 |
| VA08B-90 | 53 | 17 | 9 | 13 |
| VA07B-61 | 55 | 17 | 10 | 14 |
| VA07B-59 | 60 | 17 | 11 | 15 |
| VA08B-84 | 41 | 20 | 11 | 16 |
| **Atlantic** | 58 | 23 | 12 | 17 |
| VA06B-25 | 64 | 20 | 12 | 18 |
| VA06B-48 | 58 | 22 | 13 | 19 |
| VA06B-22 | 65 | 19 | 13 | 20 |
| VA08B-111 | 53 | 23 | 14 | 21 |
| Average | 46 | 15 | 7 | |
| LSD (0.05) | 29 | 15 | 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.)

**Table 24. Three year average summary of reaction of entries in the Virginia Tech State Barley Tests to Fusarium head blight (scab), 2009 - 2011 harvests.**

| LINE | FHB Incidence[1] (%) | FHB Severity[2] (%) | FHB Index[3] (0-100) | Rank FHB Index |
|---|---|---|---|---|
| **Wysor** | 27 | 9 | 2 | 1 |
| **Thoroughbred** | 22 | 13 | 2 | 2 |
| VA92-42-46 | 23 | 14 | 3 | 3 |
| **Barsoy** | 23 | 10 | 3 | 4 |
| **Nomini** | 32 | 16 | 5 | 5 |
| **Price** | 37 | 15 | 6 | 6 |
| **Callao** | 48 | 15 | 7 | 7 |
| VA07B-61 | 43 | 15 | 7 | 8 |
| VA07B-64 | 40 | 19 | 8 | 9 |
| **Atlantic** | 50 | 22 | 10 | 10 |
| VA06B-22 | 50 | 21 | 10 | 11 |
| VA07B-59 | 51 | 19 | 10 | 12 |
| VA06B-48 | 47 | 21 | 11 | 13 |
| Average | 38 | 16 | 6 | |
| LSD (0.05) | 21 | 9 | 6 | |

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 trials 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 and 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 day length 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- and over-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 2011 were Featherstone VA-258, W1566, Progeny 870, Dyna-Gro 9171, SS 520, Shirley, SS 8340, USG 3438, Branson, Progeny 125, and Merl. SS 8340 and Merl also had test weight that was significantly higher than the mean of all lines tested. Average yield of all lines tested in 2010-11 was 91 bu/ac.

Featherstone VA-258 had the highest two year average yield. Shirley, W1566, SS 520, USG 3665, USG 3251, Branson, Pioneer 26R20, USG 3120, SS 8700, and USG 3555 all had grain yield significantly above the mean over the 2010 and 2011 harvests. The two year average grain yield over all location and varieties was 86 bu/ac.

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 for sporadic or consistent rain showers to interrupt harvest. These wetting and drying cycles and subsequent delays and significantly reduce grain test weight and quality. Growers can circumvent this problem by planting varieties that differ significantly in maturity. 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.

## Summary of wheat management practices for the 2011 harvest season (All rates are given on a per acre basis.)

**Blacksburg** - Planted October 6, 2010. Preplant fertilizer was 30-50-60 September 2010. Site was sprayed with .6 oz Harmony Extra SG® on November 22, 2010. Site was fertilized with 50 lb N plus 0.8 oz Harmony Extra SG® on March 22, 2011 and with 25 lb N on April 25, 2011. Harvest occurred on June 29, 2011.

**Blackstone** - Planted October 13, 2010. Site was fertilized with 375 lb 8-8-24 on October 13, 2010. Site was top-dressed with 60 lb N using 14-0-14 on February 11, 2011 and with 50 lb N using 34-0-0 March 29, 2011. Site was spayed with 3 oz Proaxis® for cereal leaf beetle on April 20, 2011. Harvest occurred June 10, 2011.

**Warsaw** - Planted October 19, 2010. Preplant fertilizer was 30-60-60-5 applied October 12, 2010 and 1 ton lime applied October 11, 2010. Site was fertilized using 12-0-0-1.5 at 25 lb N with .4 pt Starane® on February 7, and at 25 lb N using 12-0-0-1.5 on March 14, 2011. Site was fertilized with an additional 25 lb N using 24-0-0-3 on March 30, 2011. Site was treated with .9 oz Finesse® on February 23, 2011. Harvest occurred June 11, 2011.

**Warsaw No-Till** – Planted October 19, 2010. Applied ½ pt 2-4 D ester + 2 pt Gramaxone® October 11, 2010. Preplant fertilizer was 30-60-60-5 October 12, 2010 + 1 ton lime applied October 11, 2010. Site was fertilized using 12-0-0-1.5 at 25 lb N on February 7 with .4 pt Starane®, and at 25 lb N using 12-0-0-1.5 on March 14, 2011. Site was fertilized with an additional 25 lb N using 24-0-0-3 on March 30, 2011. Site was treated with .9 oz Finesse® on February 23, 2011. Harvest occurred June 10, 2011.

**Painter** - Planted October 25, 2010. Preplant fertilizer was 30 lb N using 30% UAN on October 24, 2010. Site was fertilized with 60 lb N using 30%UAN and 0.75 oz Harmony Extra SG® February 24, 2011. Site was fertilized with 70 lb N using 30% UAN March 20, 2011. Harvest occurred on June 14-15, 2011.

**Holland -** Planted no-till November 2, 2010. Preplant fertilization was 300 lb 6-16-36 on October 22, 2010. Site was fertilized with 60 lb N on February 17 and with 70 lb N on March 18, 2011 using UAN. Site was also treated with .6 oz Harmony Extra SG® on both those dates. Harvest occurred on June 8, 2011.

**Orange** - Planted October 12, 2010. Preplant fertilization was 139 lb 18-46-0 using DAP on October 12, 2010. Sixty lb N and Harmony Extra® at 0.4 oz were applied March 15, 2011. Harvest occurred on June 15, 2011.

**Shenandoah Valley** - Planted on October 6, 2009. Preplant fertilizer was 30 lb N + 1 qt Roundup ®. Fifty lb N was applied March 4, 2011 and 60 lb was applied on April 4, 2011. Harvest occurred June 30, 2011.

**Table 25. Summary of performance of entries in the Virginia Tech Wheat Test, 2011 harvest.**

| Line | Yield (Bu/a) (8) | | Test Weight (Lb/bu) (8) | | Date Headed (Julian) (4) | | Height (In) (4) | | Lodging (0-9) (7) | | Leaf Rust (0-9) (4) | | Powdery Mildew (0-9) (4) | | Barley Yellow Dwarf Virus (0-9) (2) | | Hessian Fly Resistance (Biotype)[1] | Awns[2] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VA07W-415 | 99 | + | 58.8 | - | 121 | | 38 | + | 2 | | 2 | | 0 | - | 3 | + | BCDOL | AL |
| **Featherstone VA-258** | 99 | + | 58.9 | - | 122 | + | 39 | + | 3 | + | 1 | - | 2 | | 1 | | O | AL |
| **W1566** | 98 | + | 58.2 | - | 121 | | 41 | + | 3 | | 6 | + | 1 | - | 1 | | --- | AL |
| **Progeny 870** | 98 | + | 57.7 | - | 120 | - | 35 | - | 1 | - | 3 | | 3 | + | 1 | | BDO | A |
| **Dyna-Gro 9171** | 97 | + | 57.8 | - | 120 | - | 35 | - | 1 | - | 3 | | 3 | + | 2 | | BCD | A |
| **SS 520** | 97 | + | 58.5 | - | 119 | - | 38 | + | 3 | + | 3 | + | 1 | | 2 | | --- | AL |
| Pioneer XW09H | 97 | + | 58.6 | - | 122 | + | 37 | | 1 | - | 3 | + | 3 | + | 3 | + | BCDOL | A |
| **Shirley** | 96 | + | 57.9 | - | 122 | + | 35 | - | 1 | - | 0 | - | 0 | - | 1 | | --- | AL |
| VA08MAS-369 | 96 | + | 60.7 | + | 122 | + | 36 | - | 2 | | 3 | | 1 | - | 1 | | --- | AL |
| VA06W-412 | 96 | + | 60.3 | + | 122 | + | 36 | - | 1 | - | 1 | - | 1 | | 1 | | --- | AL |
| **SS 8340** | 96 | + | 60.2 | + | 121 | | 37 | | 1 | - | 3 | | 3 | + | 1 | | BCO | A |
| **USG 3438** | 95 | + | 57.4 | - | 120 | - | 35 | - | 1 | - | 3 | | 3 | + | 3 | + | --- | A |
| VA07W-429 | 95 | + | 57.6 | - | 120 | - | 37 | | 2 | | 0 | - | 1 | - | 2 | | --- | AL |
| **VA05W-251*** | 94 | + | 58.9 | - | 121 | | 35 | - | 3 | | 0 | - | 1 | - | 1 | | --- | AL |
| **Branson** | 94 | + | 58.9 | - | 120 | - | 37 | | 2 | - | 4 | + | 1 | - | 1 | | BD | AL |
| **VA05W-151*** | 94 | + | 60.6 | + | 120 | - | 35 | - | 4 | + | 3 | | 3 | + | 1 | | --- | AL |
| **Progeny 125** | 94 | + | 59.6 | | 118 | - | 36 | - | 1 | - | 4 | + | 5 | + | 1 | | --- | AL |
| **Merl** | 94 | + | 60.3 | + | 120 | - | 37 | | 1 | - | 4 | + | 1 | - | 1 | | --- | AL |
| VA10W-119 | 94 | + | 60.0 | + | 120 | - | 38 | + | 3 | + | 2 | | 2 | | 1 | | BCOL | A |
| **USG 3555** | 93 | | 58.3 | - | 120 | - | 33 | - | 2 | | 4 | + | 1 | - | 1 | | --- | AL |
| **Jamestown** | 93 | | 61.2 | + | 119 | - | 35 | - | 2 | | 3 | | 1 | - | 1 | | BCD | A |
| VA09W-110 | 93 | | 58.3 | - | 123 | + | 34 | - | 2 | | 0 | - | 2 | | 1 | | --- | TA |
| **Dyna-Gro V9723** | 93 | | 58.5 | - | 120 | - | 41 | + | 2 | | 5 | + | 3 | + | 1 | | B | TA |
| VA08W-294 | 93 | | 60.2 | + | 122 | + | 37 | | 2 | | 0 | - | 0 | - | 0 | - | --- | TA |
| **SS 8700** | 93 | | 58.1 | - | 123 | + | 38 | + | 2 | | 4 | + | 0 | - | 1 | | CO | A |
| **USG 3770** | 93 | | 60.2 | + | 120 | - | 37 | | 1 | - | 3 | | 3 | + | 2 | | --- | A |
| **COKER 9553** | 93 | | 61.1 | + | 119 | - | 38 | + | 1 | - | 2 | | 1 | - | 2 | | --- | A |
| **USG 3120** | 93 | | 60.1 | + | 118 | - | 37 | | 2 | | 1 | - | 1 | - | 1 | | O | A |
| **USG 3251** | 93 | | 58.7 | - | 123 | + | 38 | + | 1 | - | 3 | + | 2 | | 2 | | --- | A |
| VA08MAS-412 | 93 | | 57.5 | - | 121 | | 36 | | 1 | - | 0 | - | 1 | - | 1 | | BCDO | TA |

**Table 25, continued. Summary of performance of entries in the Virginia Tech Wheat Test, 2011 harvest.**

| Line | Yield (Bu/a) (8) | | Test Weight (Lb/bu) (8) | | Date Headed (Julian) (4) | | Height (In) (4) | | Lodging (0-9) (7) | | Leaf Rust (0-9) (4) | | Powdery Mildew (0-9) (4) | | Barley Yellow Dwarf Virus (0-9) (2) | | Hessian Fly Resistance (Biotype)[1] | Awns[2] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **USG 3315** | 92 | | 59.6 | | 122 | + | 37 | | 2 | | 3 | + | 1 | - | 1 | | D | AL |
| **VA05W-139*** | 92 | | 59.3 | | 123 | + | 35 | - | 0 | - | 2 | | 2 | | 1 | | --- | AL |
| **USG 3665** | 92 | | 58.9 | - | 121 | | 39 | + | 2 | | 4 | + | 2 | | 2 | | O | TA |
| **USG 3201** | 92 | | 60.2 | + | 121 | | 37 | | 1 | - | 2 | | 3 | + | 1 | | --- | A |
| **Pioneer 26R15** | 92 | | 58.6 | - | 121 | | 38 | + | 1 | - | 3 | | 2 | | 1 | | B | A |
| **Pioneer 25R32** | 92 | | 59.7 | | 122 | + | 37 | | 2 | | 5 | + | 1 | - | 2 | | BCDOL | A |
| VA08W-295 | 92 | | 60.4 | + | 122 | + | 37 | | 2 | | 1 | - | 2 | | 2 | | --- | AL |
| **Progeny 357** | 92 | | 56.4 | - | 122 | + | 38 | + | 1 | - | 3 | + | 5 | + | 2 | | --- | A |
| **Pioneer 26R20** | 91 | | 59.4 | | 122 | + | 38 | + | 2 | | 3 | | 1 | | 2 | | CO | A |
| VA09W-67 | 91 | | 60.3 | + | 122 | + | 37 | | 1 | - | 1 | - | 2 | | 1 | - | --- | AL |
| VA09W-188WS | 91 | | 57.8 | - | 119 | - | 39 | + | 3 | + | 2 | | 1 | - | 1 | | O | A |
| VA08W-193 | 91 | | 58.7 | - | 121 | | 35 | - | 1 | - | 1 | - | 1 | - | 2 | | --- | AL |
| **Dyna-Gro 9012** | 91 | | 60.1 | + | 121 | | 36 | | 2 | | 2 | | 3 | + | 2 | | --- | A |
| VA08W-92 | 91 | | 61.7 | + | 119 | - | 37 | | 3 | + | 0 | - | 1 | | 1 | | --- | AL |
| **Renwood 3434** | 91 | | 58.4 | - | 122 | + | 32 | - | 2 | | 4 | + | 0 | - | 2 | | --- | AL |
| **SS 8500** | 91 | | 59.3 | | 120 | - | 39 | + | 1 | - | 5 | + | 1 | - | 2 | | --- | A |
| **Dyna-Gro 9922** | 91 | | 59.4 | | 120 | - | 39 | + | 1 | - | 4 | + | 1 | - | 2 | | O | A |
| VA08W-632 | 91 | | 59.1 | | 121 | | 37 | | 1 | - | 1 | - | 0 | - | 2 | | --- | AL |
| **NC-Cape Fear** | 91 | | 60.2 | + | 119 | - | 36 | - | 4 | + | 2 | | 0 | - | 1 | | --- | AL |
| VA09W-75 | 91 | | 59.9 | + | 121 | | 36 | | 2 | | 0 | - | 0 | - | 1 | | --- | TA |
| VA09W-112 | 91 | | 61.6 | + | 122 | + | 36 | | 2 | | 1 | - | 1 | - | 2 | | --- | AL |
| **SS-MPV 57** | 90 | | 59.5 | | 122 | + | 39 | + | 2 | | 4 | + | 2 | + | 2 | | --- | TA |
| VA09W-52 | 90 | | 59.1 | | 121 | | 38 | | 3 | | 1 | - | 2 | | 1 | | O | AL |
| **Chesapeake** | 90 | | 60.1 | + | 121 | | 36 | - | 3 | + | 5 | + | 0 | - | 2 | | --- | AL |
| VA09W-45 | 90 | | 58.7 | - | 120 | - | 35 | - | 3 | + | 1 | - | 1 | - | 2 | | CDO | AL |
| **Pioneer 26R12** | 90 | | 60.6 | + | 122 | + | 38 | + | 2 | | 2 | | 3 | + | 1 | | --- | A |
| VA09W-73 | 90 | | 59.6 | | 123 | + | 36 | | 2 | | 2 | - | 1 | | 1 | | --- | TA |
| **SY 9978** | 90 | | 58.4 | - | 121 | | 39 | + | 3 | + | 3 | | 1 | | 2 | | BDOL | A |
| VA08W-630 | 90 | | 59.1 | | 121 | | 36 | - | 2 | | 1 | - | 3 | + | 3 | + | --- | AL |
| VA06W-392 | 90 | | 58.9 | - | 121 | | 35 | - | 3 | + | 0 | - | 2 | | 1 | | --- | AL |
| **SS 5205** | 89 | | 59.6 | | 121 | | 33 | - | 3 | | 1 | - | 1 | - | 1 | | D | AL |

**Table 25, continued. Summary of performance of entries in the Virginia Tech Wheat Test, 2011 harvest.**

| Line | Yield (Bu/a) (8) | | Test Weight (Lb/bu) (8) | | Date Headed (Julian) (4) | | Height (In) (4) | | Lodging (0-9) (7) | | Leaf Rust (0-9) (4) | | Powdery Mildew (0-9) (4) | | Barley Yellow Dwarf Virus (0-9) (2) | | Hessian Fly Resistance (Biotype)[1] | Awns[2] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SS 5205** | 89 | | 59.6 | | 121 | | 33 | - | 3 | | 1 | - | 1 | - | 1 | | D | AL |
| **Progeny 117** | 89 | | 59.3 | | 119 | - | 40 | + | 3 | + | 4 | + | 4 | + | 1 | | --- | AL |
| **OAKES** | 89 | | 60.2 | + | 123 | + | 37 | | 2 | | 3 | | 4 | + | 2 | | --- | AL |
| **Pioneer 26R22** | 89 | | 58.2 | - | 121 | | 38 | + | 2 | | 4 | + | 4 | + | 3 | + | O | A |
| VA05W-70 | 89 | | 60.3 | + | 122 | + | 35 | - | 2 | | 1 | - | 0 | - | 2 | | --- | AL |
| Progeny PGX10-2 | 89 | | 60.2 | + | 122 | + | 38 | + | 3 | + | 3 | | 2 | | 2 | | --- | AL |
| VA09W-46 | 88 | - | 58.5 | - | 121 | | 35 | - | 3 | + | 1 | - | 3 | + | 2 | | O | AL |
| VA08W-176 | 88 | - | 60.6 | + | 122 | + | 37 | | 2 | | 1 | - | 1 | | 2 | | --- | AL |
| **Progeny 185** | 88 | - | 58.7 | - | 121 | | 39 | + | 1 | - | 4 | + | 4 | + | 1 | | --- | AL |
| **Dominion** | 88 | - | 59.0 | - | 122 | + | 34 | - | 2 | | 3 | | 0 | - | 2 | | --- | AL |
| GA 00067-8E35 | 87 | - | 59.2 | | 120 | - | 36 | | 3 | + | 0 | - | 3 | + | 1 | | --- | A |
| **SS 560** | 87 | - | 58.5 | - | 122 | + | 36 | | 1 | - | 4 | + | 2 | | 3 | + | --- | TA |
| **Pioneer 26R31** | 87 | - | 58.7 | - | 121 | | 33 | - | 2 | | 4 | + | 1 | - | 2 | | O | AL |
| **NC-Yadkin** | 87 | - | 58.7 | - | 121 | | 36 | | 3 | + | 1 | - | 0 | - | 1 | | --- | AL |
| VA09W-659 | 87 | - | 61.6 | + | 121 | | 37 | | 3 | + | 4 | + | 3 | + | 2 | | --- | AL |
| **SS 8404** | 86 | - | 61.1 | + | 122 | + | 34 | - | 1 | - | 2 | | 3 | + | 1 | | --- | A |
| **SS 8302** | 86 | - | 59.5 | | 122 | + | 39 | + | 1 | - | 6 | + | 5 | + | 3 | + | O | A |
| GA 001138-8E36 | 86 | - | 59.7 | | 123 | + | 41 | + | 2 | | 0 | - | 2 | | 1 | | O | A |
| **USG 3592** | 85 | - | 59.6 | | 122 | + | 39 | + | 3 | + | 1 | - | 2 | + | 2 | | --- | AL |
| VA09W-641 | 85 | - | 59.8 | + | 117 | - | 36 | | 5 | + | 1 | - | 3 | + | 1 | | --- | AL |
| **SS 8309** | 83 | - | 59.1 | | 122 | + | 37 | | 1 | - | 4 | + | 2 | | 2 | | O | AL |
| NC05-19896 | 82 | - | 59.6 | | 121 | | 34 | - | 4 | + | 1 | - | 2 | | 1 | | --- | AL |
| **Progeny 166** | 82 | - | 58.3 | - | 121 | | 41 | + | 2 | | 2 | | 7 | + | 2 | | --- | AL |
| VA09W-623 | 81 | - | 60.8 | + | 121 | | 36 | | 4 | + | 3 | | 1 | - | 2 | | --- | AL |
| VA09W-657 | 81 | - | 60.4 | + | 121 | | 37 | | 3 | + | 2 | | 1 | - | 2 | | --- | AL |

**Table 25, continued. Summary of performance of entries in the Virginia Tech Wheat Test, 2011 harvest.**

| Line | Yield (Bu/a) (8) | | Test Weight (Lb/bu) (8) | | Date Headed (Julian) (4) | | Height (In) (4) | | Lodging (0-9) (7) | | Leaf Rust (0-9) (4) | | Powdery Mildew (0-9) (4) | | Barley Yellow Dwarf Virus (0-9) (2) | | Hessian Fly Resistance (Biotype)[1] | Awns[2] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VA09W-656 | 79 | - | 60.0 | + | 122 | + | 37 | | 3 | | 1 | - | 1 | - | 1 | | --- | AL |
| **Massey** | 74 | - | 58.8 | - | 122 | + | 42 | + | 3 | + | 8 | + | 1 | - | 2 | | B | AL |
| Average | 91 | | 59.4 | | 121 | | 37 | | 2 | | 2 | | 2 | | 1 | | | |
| LSD (O.05) | 3 | | 0.4 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | | |
| C.V. | 8 | | 1.2 | | 1 | | 3 | | --- | | --- | | --- | | --- | | | |

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, C, D, 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

[*] Released line yet to be named.

WS in the line designation indicates a white-seeded line; MAS in the line designation indicates a line derived using marker-assisted selection.

**Table 26. Two year average summary of performance of entries in the Virginia Tech Wheat Tests, 2010 and 2011 harvests.**

| Line | Yield (Bu/a) (15) | | Test Weight (Lb/bu) (15) | | Date Headed (Julian) (8) | | Height (In) (8) | | Lodging (0-9) (11) | | Leaf Rust (0-9) (8) | | Powdery Mildew (0-9) (6) | | Barley Yellow Dwarf Virus (0-9) (5) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Featherstone VA-258** | 92 | + | 59.6 | - | 122 | + | 38 | + | 2 | + | 2 | - | 2 | | 2 | |
| **Shirley** | 91 | + | 58.1 | - | 122 | + | 33 | - | 1 | - | 0 | - | 0 | - | 1 | |
| VA07W-415 | 91 | + | 59.6 | - | 121 | + | 37 | + | 2 | + | 1 | - | 0 | - | 3 | + |
| **VA05W-151*** | 91 | + | 61.4 | + | 120 | - | 34 | - | 3 | + | 3 | | 3 | + | 2 | |
| **W1566** | 90 | + | 58.7 | - | 122 | + | 39 | + | 2 | | 5 | + | 1 | - | 2 | |
| **VA05W-251*** | 89 | + | 59.6 | - | 121 | | 34 | - | 2 | + | 0 | - | 1 | - | 1 | |
| **SS 520** | 89 | + | 59.2 | - | 119 | - | 37 | + | 2 | + | 3 | | 2 | | 3 | + |
| **USG 3665** | 89 | + | 59.6 | - | 121 | | 37 | + | 2 | | 3 | + | 2 | | 2 | |
| **USG 3251** | 88 | + | 59.1 | - | 123 | + | 36 | + | 1 | - | 3 | | 2 | | 1 | |
| **Branson** | 88 | + | 59.3 | - | 119 | - | 34 | - | 1 | | 3 | + | 1 | - | 2 | |
| **Pioneer 26R20** | 88 | + | 60.0 | | 122 | + | 36 | + | 2 | | 2 | | 1 | - | 2 | |
| **USG 3120** | 88 | + | 60.9 | + | 118 | - | 36 | + | 2 | | 1 | - | 1 | - | 1 | - |
| VA06W-412 | 88 | + | 60.8 | + | 122 | + | 34 | - | 1 | - | 1 | - | 1 | - | 1 | |
| **SS 8700** | 88 | + | 58.6 | - | 123 | + | 36 | + | 2 | | 4 | + | 1 | - | 1 | - |
| **USG 3555** | 88 | + | 58.9 | - | 120 | - | 32 | - | 2 | | 4 | + | 1 | - | 1 | - |
| VA08W-294 | 87 | | 60.6 | + | 122 | + | 35 | | 2 | | 0 | - | 0 | - | 1 | - |
| VA08W-92 | 87 | | 62.4 | + | 119 | - | 35 | | 2 | + | 1 | - | 1 | | 2 | |
| **USG 3315** | 87 | | 60.0 | | 122 | + | 35 | | 2 | | 3 | + | 1 | - | 1 | |
| **Dyna-Gro V9723** | 87 | | 59.1 | - | 120 | - | 39 | + | 2 | | 5 | + | 3 | + | 1 | |
| **USG 3201** | 87 | | 60.7 | + | 121 | - | 34 | - | 1 | - | 2 | | 3 | + | 1 | |
| **Merl** | 87 | | 60.9 | + | 121 | | 35 | - | 1 | - | 4 | + | 1 | - | 2 | |
| **Pioneer 26R15** | 87 | | 59.0 | - | 121 | | 36 | + | 1 | - | 3 | | 1 | | 2 | |
| **USG 3770** | 87 | | 60.4 | + | 120 | - | 37 | + | 2 | | 3 | | 4 | + | 1 | |
| **Jamestown** | 87 | | 61.2 | + | 119 | - | 34 | - | 1 | - | 2 | | 1 | - | 1 | - |
| **SS-MPV 57** | 86 | | 59.6 | - | 122 | + | 37 | + | 2 | | 4 | + | 2 | + | 3 | + |
| **Renwood 3434** | 86 | | 59.2 | - | 122 | + | 31 | - | 1 | - | 3 | + | 0 | - | 3 | + |
| **VA05W-139*** | 86 | | 60.1 | | 123 | + | 33 | - | 0 | - | 2 | - | 1 | | 2 | + |
| VA08W-295 | 86 | | 61.1 | + | 122 | + | 35 | | 2 | | 1 | - | 2 | | 2 | |
| **Pioneer 26R22** | 86 | | 58.9 | - | 121 | | 36 | + | 2 | | 4 | + | 3 | + | 2 | |

**Table 26, continued. Two year average summary of performance of entries in the Virginia Tech Wheat Tests, 2010 and 2011 harvests.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Date Headed (Julian) | | Height (In) | | Lodging (0-9) | | Leaf Rust (0-9) | | Powdery Mildew (0-9) | | Barley Yellow Dwarf Virus (0-9) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (15) | | (15) | | (8) | | (8) | | (11) | | (8) | | (6) | | (5) | |
| **Pioneer 25R32** | 86 | | 60.1 | | 122 | + | 35 | | 2 | | 4 | + | 1 | - | 2 | |
| **Chesapeake** | 86 | | 60.6 | + | 120 | - | 34 | - | 2 | + | 4 | + | 0 | - | 2 | |
| **SY 9978** | 86 | | 58.9 | - | 121 | - | 38 | + | 3 | + | 2 | | 1 | | 1 | |
| **Dyna-Gro 9922** | 86 | | 60.0 | | 120 | - | 37 | + | 1 | - | 4 | + | 1 | - | 2 | |
| **COKER 9553** | 85 | | 61.7 | + | 119 | - | 37 | + | 1 | - | 2 | | 1 | - | 2 | |
| VA08W-193 | 85 | | 59.5 | - | 121 | + | 33 | - | 1 | - | 1 | - | 1 | - | 2 | |
| **Progeny 117** | 85 | | 59.9 | | 119 | - | 38 | + | 3 | + | 4 | + | 4 | + | 1 | |
| VA05W-70 | 85 | | 61.0 | + | 122 | + | 33 | - | 2 | | 1 | - | 0 | - | 2 | |
| **Pioneer 26R12** | 85 | | 61.4 | + | 122 | + | 36 | | 1 | - | 2 | - | 2 | + | 2 | |
| **NC-Cape Fear** | 85 | | 60.9 | + | 119 | - | 34 | - | 3 | + | 2 | - | 1 | - | 2 | |
| **USG 3592** | 85 | | 60.1 | | 121 | + | 37 | + | 3 | + | 2 | - | 2 | + | 2 | |
| **OAKES** | 84 | - | 61.0 | + | 122 | + | 35 | | 2 | | 3 | | 4 | + | 1 | - |
| **SS 5205** | 84 | - | 60.3 | | 121 | | 31 | - | 2 | | 1 | - | 1 | - | 2 | |
| VA06W-392 | 84 | - | 59.8 | | 121 | | 34 | - | 3 | + | 0 | - | 2 | | 2 | |
| VA08W-176 | 84 | - | 61.4 | + | 123 | + | 35 | | 1 | | 1 | - | 1 | | 2 | |
| **Progeny 185** | 84 | - | 59.4 | - | 120 | - | 37 | + | 1 | - | 4 | + | 4 | + | 2 | |
| **SS 560** | 84 | - | 59.2 | - | 122 | + | 34 | - | 1 | - | 4 | + | 2 | | 3 | + |
| **Pioneer 26R31** | 82 | - | 58.8 | - | 121 | | 32 | - | 1 | - | 3 | + | 1 | - | 4 | + |
| **Dominion** | 82 | - | 59.6 | - | 122 | + | 32 | - | 1 | | 3 | | 0 | - | 3 | + |
| **NC-Yadkin** | 82 | - | 59.3 | - | 121 | | 34 | - | 2 | + | 1 | - | 0 | - | 1 | |
| **SS 8404** | 82 | - | 61.2 | + | 122 | + | 33 | - | 1 | - | 2 | - | 3 | + | 1 | - |
| **SS 8302** | 81 | - | 60.3 | | 122 | + | 36 | + | 1 | - | 5 | + | 4 | + | 3 | + |
| **SS 8309** | 80 | - | 59.9 | | 122 | + | 36 | + | 1 | - | 3 | + | 2 | | 2 | |
| **Progeny 166** | 80 | - | 59.5 | - | 120 | - | 40 | + | 2 | | 2 | | 7 | + | 2 | |

**Table 26, continued. Two year average summary of performance of entries in the Virginia Tech Wheat Tests, 2010 and 2011 harvests.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Date Headed (Julian) | | Height (In) | | Lodging (0-9) | | Leaf Rust (0-9) | | Powdery Mildew (0-9) | | Barley Yellow Dwarf Virus (0-9) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (15) | | (15) | | (8) | | (8) | | (11) | | (8) | | (6) | | (5) | |
| NC05-19896 | 80 | - | 60.5 | + | 121 | | 33 | - | 3 | + | 1 | - | 2 | | 2 | |
| **Massey** | 71 | - | 59.6 | - | 122 | + | 40 | + | 3 | + | 8 | + | 1 | | 2 | + |
| Average | 86 | | 60.0 | | 121 | | 35 | | 2 | | 3 | | 2 | | 2 | |
| LSD (O.05) | 2 | | 0.4 | | 0 | | 1 | | 0 | | 1 | | 1 | | 1 | |
| C.V. | 8 | | 1.9 | | 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 and 9 = highly susceptible.

**Table 27. Three year average summary of performance of entries in the Virginia Tech Wheat Tests, 2009, 2010, and 2011 harvests.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Date Headed (Julian) | | Height (In) | | Lodging (0-9) | | Leaf Rust (0-9) | | Powdery Mildew (0-9) | | Barley Yellow Dwarf Virus (0-9) | | Wheat Spindle Streak Virus (0-9) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (22) | | (22) | | (12) | | (12) | | (16) | | (11) | | (10) | | (5) | | (1) | |
| **Featherstone VA-258** | 88 | + | 58.4 | - | 123 | + | 38 | + | 2 | + | 1 | - | 1 | | 2 | | 2 | |
| **Shirley** | 88 | + | 57.1 | - | 123 | | 34 | - | 1 | - | 0 | - | 0 | - | 1 | - | 2 | |
| **VA05W-151*** | 88 | + | 60.5 | + | 121 | | 34 | - | 3 | + | 3 | + | 2 | + | 2 | | 2 | |
| VA07W-415 | 87 | + | 58.0 | - | 122 | | 37 | + | 2 | + | 1 | - | 0 | - | 3 | + | 1 | |
| **VA05W-251*** | 86 | + | 58.5 | | 122 | | 34 | - | 2 | + | 0 | - | 1 | | 1 | - | 0 | |
| **Branson** | 86 | + | 58.2 | - | 120 | - | 35 | - | 1 | | 3 | | 1 | - | 2 | | 1 | |
| **Pioneer 26R20** | 85 | + | 58.5 | | 123 | + | 36 | + | 2 | | 2 | - | 1 | - | 2 | | 1 | |
| **Dyna-Gro V9723** | 85 | + | 58.0 | - | 121 | | 40 | + | 2 | | 4 | + | 2 | + | 1 | - | 4 | |
| **SS 520** | 85 | + | 58.0 | - | 120 | - | 36 | + | 3 | + | 2 | | 1 | | 3 | + | 6 | |
| **USG 3665** | 85 | + | 58.3 | - | 122 | | 37 | + | 1 | | 3 | + | 1 | | 2 | | 0 | |
| VA06W-412 | 85 | + | 59.6 | + | 123 | | 34 | - | 1 | - | 1 | - | 1 | | 1 | - | 1 | |
| **USG 3120** | 85 | + | 59.6 | + | 119 | - | 36 | + | 2 | | 1 | - | 1 | - | 1 | - | 3 | |
| **Merl** | 85 | + | 59.9 | + | 121 | | 35 | - | 1 | - | 3 | + | 1 | - | 2 | | 2 | |
| **USG 3555** | 84 | + | 57.9 | - | 121 | | 33 | - | 1 | | 3 | + | 1 | - | 1 | - | 0 | |
| **Pioneer 26R15** | 84 | + | 57.7 | - | 122 | | 36 | + | 1 | - | 2 | | 1 | | 2 | | 2 | |
| **SS-MPV 57** | 84 | + | 58.6 | | 124 | + | 37 | + | 2 | | 3 | + | 2 | + | 3 | + | 1 | |
| **Pioneer 25R32** | 83 | | 59.0 | | 121 | | 36 | | 2 | + | 3 | + | 1 | - | 2 | | 0 | |
| **VA05W-139*** | 83 | | 58.8 | | 123 | + | 34 | - | 0 | - | 1 | - | 1 | - | 2 | + | 3 | |
| **Renwood 3434** | 83 | | 58.0 | - | 123 | | 32 | - | 1 | - | 2 | | 0 | - | 3 | + | 3 | |
| **USG 3315** | 83 | | 59.1 | | 123 | | 35 | | 2 | | 3 | + | 1 | - | 1 | - | 1 | |
| **Jamestown** | 83 | | 60.2 | + | 119 | - | 33 | - | 1 | | 2 | - | 1 | - | 1 | - | 6 | |
| **Chesapeake** | 82 | | 59.5 | + | 121 | | 34 | - | 2 | + | 4 | + | 0 | - | 2 | | 2 | |
| **Dyna-Gro 9922** | 82 | | 58.8 | | 122 | | 37 | + | 1 | - | 3 | + | 1 | - | 2 | | 2 | |
| **COKER 9553** | 82 | | 60.7 | + | 120 | - | 36 | + | 1 | | 2 | - | 1 | - | 2 | | 6 | + |
| **Progeny 185** | 82 | | 58.5 | | 121 | | 37 | + | 1 | - | 3 | + | 3 | + | 2 | | 3 | |
| **Progeny 117** | 82 | | 58.8 | | 120 | - | 38 | + | 3 | + | 3 | + | 3 | + | 1 | - | 2 | |
| VA06W-392 | 82 | | 58.6 | | 122 | | 34 | - | 3 | + | 0 | - | 2 | + | 2 | | 5 | |
| **SS 5205** | 81 | | 59.1 | | 122 | | 32 | - | 2 | | 1 | - | 1 | - | 2 | | 4 | |
| **OAKES** | 81 | | 60.1 | + | 123 | + | 36 | | 2 | | 2 | | 3 | + | 1 | - | 6 | |

**Table 27, continued. Three year average summary of performance of entries in the Virginia Tech Wheat Tests, 2009, 2010, and 2011 harvests.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Date Headed (Julian) | | Height (In) | | Lodging (0-9) | | Leaf Rust (0-9) | | Powdery Mildew (0-9) | | Barley Yellow Dwarf Virus (0-9) | | Wheat Spindle Streak Virus (0-9) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (22) | | (22) | | (12) | | (12) | | (16) | | (11) | | (10) | | (5) | | (1) | |
| **NC-Yadkin** | 81 | | 58.4 | - | 122 | | 35 | - | 2 | | 0 | - | 0 | - | 1 | - | 0 | |
| **NC-Cape Fear** | 81 | | 59.7 | + | 119 | - | 34 | - | 3 | + | 1 | - | 0 | - | 2 | | 1 | |
| **SS 560** | 80 | - | 58.2 | - | 123 | + | 34 | - | 1 | - | 3 | + | 1 | | 3 | + | 2 | |
| **Pioneer 26R12** | 80 | - | 59.9 | + | 123 | | 36 | + | 1 | - | 2 | - | 2 | + | 2 | | 4 | |
| **Pioneer 26R31** | 80 | - | 57.9 | - | 122 | | 32 | - | 1 | - | 3 | | 1 | - | 4 | + | 5 | |
| **Dominion** | 79 | - | 58.4 | - | 123 | | 33 | - | 2 | | 2 | | 0 | - | 3 | + | 5 | |
| **USG 3592** | 79 | - | 58.9 | | 123 | | 37 | + | 3 | + | 1 | - | 2 | + | 2 | | 6 | + |
| **SS 8309** | 78 | - | 58.8 | | 123 | | 36 | + | 1 | - | 3 | | 1 | | 2 | | 0 | |
| **SS 8302** | 77 | - | 59.3 | + | 123 | | 37 | + | 1 | - | 4 | + | 4 | + | 3 | + | 4 | |
| **Progeny 166** | 77 | - | 58.2 | - | 121 | | 40 | + | 2 | | 2 | - | 6 | + | 2 | | 9 | + |
| **SS 8404** | 77 | - | 59.8 | + | 123 | | 33 | - | 1 | - | 2 | - | 3 | + | 1 | - | 7 | + |
| **Massey** | 69 | - | 58.7 | | 122 | | 40 | + | 3 | + | 8 | + | 1 | | 2 | + | 1 | |
| Average | 82 | | 58.8 | | 122 | | 35 | | 2 | | 2 | | 1 | | 2 | | 3 | |
| LSD (O.05) | 2 | | 0.4 | | 1 | | 1 | | 0 | | 0 | | 0 | | 0 | | 3 | |
| C.V. | 8 | | 2.1 | | 2 | | 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 28. Summary of performance of entries in the Virginia Tech Wheat Test planted conventionally-tilled at Warsaw, 2011 harvest.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Date Headed (Julian) | | Height (In) | | Lodging (0-9) | | Leaf Rust (0-9) | | Powdery Mildew (0-9) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Featherstone VA-258** | 120 | + | 61.2 | | 119 | + | 36 | + | 0 | | 1 | - | 2 | |
| VA08MAS-369 | 117 | + | 61.9 | + | 118 | | 32 | | 0 | | 2 | | 0 | - |
| **W1566** | 115 | + | 60.6 | | 119 | + | 38 | + | 0 | | 6 | + | 0 | - |
| VA08MAS-412 | 115 | + | 59.1 | - | 118 | | 32 | | 1 | | 0 | - | 0 | - |
| VA07W-415 | 115 | + | 61.4 | | 118 | | 34 | | 0 | | 2 | | 0 | - |
| **SS 520** | 113 | + | 60.7 | | 116 | - | 34 | | 1 | + | 4 | | 2 | |
| VA09W-45 | 113 | + | 60.6 | | 117 | - | 32 | | 0 | | 1 | | 1 | |
| **VA05W-151*** | 113 | + | 63.0 | + | 117 | - | 32 | | 1 | + | 1 | | 3 | + |
| VA08W-294 | 111 | + | 61.3 | | 118 | | 33 | | 0 | | 0 | - | 0 | - |
| **Dyna-Gro 9171** | 111 | + | 60.3 | - | 116 | - | 32 | | 1 | + | 2 | | 4 | + |
| **USG 3665** | 111 | + | 61.1 | | 119 | | 34 | | 0 | | 5 | + | 2 | |
| **Pioneer 26R20** | 111 | + | 62.0 | + | 118 | | 34 | | 0 | | 3 | | 2 | |
| **VA05W-251*** | 111 | + | 61.6 | | 118 | | 32 | | 1 | | 0 | - | 1 | |
| **SS 8340** | 110 | | 62.4 | + | 117 | | 33 | | 0 | | 2 | | 3 | + |
| VA09W-641 | 110 | | 62.3 | + | 114 | - | 34 | | 1 | + | 1 | | 3 | + |
| **USG 3315** | 110 | | 61.3 | | 119 | + | 33 | | 0 | | 4 | | 0 | - |
| **Merl** | 109 | | 61.8 | + | 117 | | 32 | | 0 | | 3 | | 0 | - |
| VA07W-429 | 109 | | 59.1 | - | 117 | | 33 | | 0 | | 0 | - | 0 | - |
| **Chesapeake** | 109 | | 62.4 | + | 117 | | 32 | | 0 | | 3 | | 0 | - |
| VA09W-188WS | 109 | | 60.2 | - | 116 | - | 35 | + | 1 | + | 2 | | 1 | - |
| VA09W-67 | 108 | | 61.6 | | 119 | + | 33 | | 0 | | 0 | - | 3 | + |
| **SS-MPV 57** | 108 | | 60.9 | | 120 | + | 35 | + | 0 | | 3 | | 3 | |
| VA10W-119 | 108 | | 61.8 | + | 117 | - | 35 | + | 0 | | 3 | | 2 | |
| VA06W-412 | 107 | | 61.4 | | 118 | | 32 | | 0 | | 1 | | 1 | |
| **USG 3201** | 107 | | 62.2 | + | 118 | | 33 | | 0 | | 2 | | 3 | + |
| **SY 9978** | 107 | | 60.8 | | 117 | | 36 | + | 1 | + | 3 | | 1 | |
| VA09W-52 | 107 | | 61.0 | | 117 | | 33 | | 0 | | 1 | | 1 | |
| **Branson** | 107 | | 61.2 | | 117 | | 33 | | 0 | | 4 | | 2 | |
| VA09W-110 | 107 | | 59.6 | - | 120 | + | 30 | - | 0 | | 0 | - | 2 | |
| **Progeny 870** | 107 | | 59.7 | - | 116 | - | 31 | - | 1 | + | 2 | | 3 | + |

**Table 28, continued. Summary of performance of entries in the Virginia Tech Wheat Test planted conventionally-tilled at Warsaw, 2011 harvest.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Date Headed (Julian) | | Height (In) | | Lodging (0-9) | | Leaf Rust (0-9) | | Powdery Mildew (0-9) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pioneer XW09H | 107 | | 59.2 | - | 119 | + | 32 | | 0 | | 4 | + | 3 | + |
| VA06W-392 | 107 | | 60.8 | | 118 | | 31 | - | 1 | | 0 | - | 3 | |
| **SS 8700** | 106 | | 60.5 | | 120 | + | 35 | + | 0 | | 4 | | 1 | |
| **USG 3438** | 106 | | 59.7 | - | 117 | - | 30 | - | 1 | + | 2 | | 3 | + |
| **USG 3555** | 106 | | 60.1 | - | 117 | | 30 | - | 0 | | 5 | + | 1 | - |
| VA09W-75 | 106 | | 61.2 | | 118 | | 32 | | 0 | | 1 | | 0 | - |
| VA08W-193 | 106 | | 60.5 | | 117 | | 31 | - | 0 | | 1 | | 0 | - |
| VA09W-73 | 106 | | 60.8 | | 120 | + | 33 | | 0 | | 3 | | 2 | |
| VA09W-46 | 106 | | 61.1 | | 117 | | 31 | - | 1 | | 2 | | 3 | |
| **NC-Cape Fear** | 105 | | 62.3 | + | 116 | - | 31 | - | 1 | + | 2 | | 0 | - |
| VA08W-176 | 105 | | 62.0 | + | 120 | + | 33 | | 0 | | 0 | - | 1 | - |
| VA08W-92 | 105 | | 63.5 | + | 116 | - | 33 | | 0 | | 0 | - | 2 | |
| **Pioneer 26R15** | 105 | | 60.4 | - | 117 | - | 34 | | 0 | | 4 | | 2 | |
| **Dominion** | 104 | | 61.0 | | 119 | | 29 | - | 0 | | 3 | | 0 | - |
| **Shirley** | 104 | | 58.9 | - | 118 | | 30 | - | 0 | | 1 | - | 0 | - |
| VA08W-632 | 104 | | 60.7 | | 117 | | 34 | | 0 | | 0 | - | 1 | |
| **USG 3592** | 104 | | 61.5 | | 119 | + | 35 | + | 1 | | 0 | - | 2 | |
| **Progeny 117** | 104 | | 61.1 | | 117 | | 36 | + | 0 | | 4 | | 4 | + |
| **Renwood 3434** | 104 | | 60.1 | - | 118 | | 29 | - | 0 | | 4 | + | 0 | - |
| VA08W-630 | 104 | | 60.7 | | 117 | | 31 | - | 1 | | 1 | | 4 | + |
| **USG 3770** | 104 | | 62.0 | + | 117 | | 33 | | 0 | | 2 | | 3 | |
| GA 00067-8E35 | 103 | | 61.7 | | 117 | | 33 | | 0 | | 0 | - | 3 | |
| **Dyna-Gro 9922** | 103 | | 61.6 | | 117 | | 35 | + | 0 | | 6 | + | 0 | - |
| **USG 3120** | 103 | | 61.8 | + | 115 | - | 34 | | 0 | | 0 | - | 1 | - |
| VA05W-70 | 103 | | 61.1 | | 119 | + | 30 | - | 0 | | 1 | - | 0 | - |
| **Pioneer 26R22** | 103 | | 59.5 | - | 118 | | 34 | | 0 | | 5 | + | 4 | + |
| **SS 8500** | 103 | | 61.6 | | 117 | | 34 | + | 0 | | 6 | + | 1 | |
| **USG 3251** | 103 | | 59.5 | - | 119 | + | 35 | + | 0 | | 3 | | 2 | |
| VA08W-295 | 103 | | 61.9 | + | 118 | | 33 | | 0 | | 0 | - | 2 | |
| **Jamestown** | 102 | | 63.6 | + | 116 | - | 32 | | 0 | | 3 | | 0 | - |

**Table 28, continued. Summary of performance of entries in the Virginia Tech Wheat Test planted conventionally-tilled at Warsaw, 2011 harvest.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Date Headed (Julian) | | Height (In) | | Lodging (0-9) | | Leaf Rust (0-9) | | Powdery Mildew (0-9) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pioneer 25R32** | 102 | | 61.6 | | 118 | | 33 | | 0 | | 4 | + | 2 | |
| VA09W-657 | 102 | | 61.8 | + | 118 | | 34 | | 0 | | 1 | | 1 | |
| GA 001138-8E36 | 102 | | 60.5 | | 119 | + | 38 | + | 0 | | 0 | - | 2 | |
| **COKER 9553** | 101 | | 62.9 | + | 116 | - | 34 | + | 1 | | 2 | | 1 | - |
| **Progeny 125** | 101 | | 62.1 | + | 116 | - | 32 | | 0 | | 4 | + | 5 | + |
| **VA05W-139*** | 101 | | 60.7 | | 120 | + | 31 | - | 0 | | 3 | | 2 | |
| **NC-Yadkin** | 101 | | 60.9 | | 117 | | 32 | | 0 | | 0 | - | 0 | - |
| **Progeny 357** | 100 | | 58.0 | - | 119 | + | 34 | | 0 | | 3 | | 5 | + |
| **Pioneer 26R12** | 100 | | 62.8 | + | 119 | + | 33 | | 0 | | 1 | | 3 | |
| **Dyna-Gro V9723** | 100 | | 60.3 | - | 117 | | 35 | + | 0 | | 5 | + | 2 | |
| Progeny PGX10-2 | 100 | | 61.4 | | 118 | | 34 | | 0 | | 1 | | 3 | + |
| **SS 5205** | 99 | | 61.8 | + | 118 | | 29 | - | 0 | | 2 | | 2 | |
| VA09W-112 | 99 | | 62.8 | + | 119 | + | 31 | - | 0 | | 1 | | 1 | - |
| VA09W-623 | 99 | | 62.6 | + | 118 | | 33 | | 1 | | 3 | | 1 | |
| **SS 560** | 98 | | 60.1 | - | 120 | + | 32 | | 0 | | 4 | | 3 | |
| **Dyna-Gro 9012** | 98 | | 61.8 | + | 118 | | 33 | | 0 | | 2 | | 3 | + |
| NC05-19896 | 97 | - | 61.4 | | 118 | | 31 | - | 0 | | 1 | - | 2 | |
| **Pioneer 26R31** | 95 | - | 60.4 | - | 117 | | 29 | - | 0 | | 4 | | 1 | |
| **Progeny 185** | 95 | - | 59.6 | - | 118 | | 34 | | 0 | | 5 | + | 4 | + |
| VA09W-656 | 95 | - | 60.9 | | 119 | + | 33 | | 0 | | 1 | - | 0 | - |
| VA09W-659 | 95 | - | 63.0 | + | 119 | | 33 | | 0 | | 4 | | 3 | + |
| **OAKES** | 95 | - | 60.9 | | 120 | + | 32 | | 0 | | 2 | | 4 | + |
| **SS 8309** | 93 | - | 60.3 | - | 119 | | 33 | | 0 | | 4 | | 3 | |
| **SS 8302** | 93 | - | 60.9 | | 118 | | 34 | | 0 | | 6 | + | 6 | + |
| **SS 8404** | 93 | - | 63.1 | + | 119 | + | 31 | - | 0 | | 2 | | 4 | + |
| **Progeny 166** | 91 | - | 59.3 | - | 118 | | 35 | + | 1 | + | 1 | - | 7 | + |
| **Massey** | 82 | - | 60.1 | - | 119 | + | 37 | + | 1 | + | 8 | + | 1 | |

**Table 28, continued. Summary of performance of entries in the Virginia Tech Wheat Test planted conventionally-tilled at Warsaw, 2011 harvest.**

| Line | Yield (Bu/a) | Test Weight (Lb/bu) | Date Headed (Julian) | Height (In) | Lodging (0-9) | Leaf Rust (0-9) | Powdery Mildew (0-9) |
|---|---|---|---|---|---|---|---|
| Average | 104 | 61.1 | 118 | 33 | 0 | 2 | 2 |
| LSD (O.05) | 7 | 0.7 | 1 | 1 | 0 | 2 | 1 |
| C.V. | 4 | 0.8 | 1 | 3 | --- | --- | --- |

Released cultivars are shown in bold print. * Released line yet to be named.

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.

WS in the line designation indicates a white-seeded line; MAS in the line designation indicates a line derived using marker-assisted selection.

**Table 29. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern Shore AREC, Painter, VA, 2011 harvest.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Leaf Rust (0-9) | | Powdery Mildew (0-9) | |
|---|---|---|---|---|---|---|---|---|
| **Shirley** | 97 | + | 59.1 | | 0 | - | 0 | - |
| **SS 8700** | 96 | + | 57.4 | - | 4 | + | 1 | - |
| **SS 520** | 95 | + | 58.3 | - | 2 | | 2 | |
| **Jamestown** | 91 | | 60.2 | + | 2 | | 3 | |
| **COKER 9553** | 91 | | 60.0 | + | 2 | | 1 | - |
| **NC-Cape Fear** | 91 | | 60.9 | + | 1 | | 1 | - |
| VA09W-112 | 90 | | 61.5 | + | 0 | - | 2 | |
| **USG 3120** | 90 | | 60.1 | + | 1 | - | 3 | |
| VA07W-429 | 89 | | 58.2 | - | 1 | | 2 | |
| VA07W-415 | 88 | | 58.5 | - | 2 | | 2 | - |
| **Merl** | 88 | | 59.8 | | 4 | + | 2 | - |
| VA05W-70 | 88 | | 59.8 | | 1 | | 0 | - |
| **VA05W-151*** | 88 | | 60.0 | + | 3 | + | 6 | + |
| **VA05W-251*** | 87 | | 58.8 | | 0 | - | 3 | |
| VA06W-412 | 87 | | 60.4 | + | 2 | | 4 | |
| **Pioneer 26R20** | 87 | | 59.6 | | 1 | | 2 | |
| **Progeny 870** | 87 | | 57.6 | - | 2 | | 4 | |
| VA10W-119 | 87 | | 59.0 | | 1 | - | 4 | |
| Pioneer XW09H | 86 | | 58.4 | - | 2 | | 5 | + |
| **Progeny 125** | 86 | | 59.2 | | 3 | + | 6 | + |
| VA08W-92 | 86 | | 61.6 | + | 0 | - | 3 | |
| **SS 8340** | 86 | | 60.0 | + | 2 | | 6 | + |
| **Pioneer 26R12** | 86 | | 59.6 | | 2 | | 5 | + |
| **W1566** | 86 | | 57.8 | - | 4 | + | 2 | |
| **Chesapeake** | 86 | | 59.7 | | 6 | + | 1 | - |
| VA09W-110 | 85 | | 58.5 | - | 0 | - | 3 | |
| VA08W-294 | 85 | | 59.2 | | 0 | - | 1 | - |
| **USG 3665** | 85 | | 57.8 | - | 1 | | 3 | |
| **USG 3251** | 85 | | 57.9 | - | 3 | | 3 | |
| **Renwood 3434** | 85 | | 58.9 | | 3 | | 0 | - |
| **USG 3592** | 85 | | 59.4 | | 0 | - | 4 | |
| **Featherstone VA-258** | 85 | | 58.4 | - | 0 | - | 3 | |
| **NC-Yadkin** | 84 | | 59.0 | | 0 | - | 1 | - |
| **SY 9978** | 84 | | 59.4 | | 1 | | 2 | |
| **Dyna-Gro 9922** | 84 | | 59.6 | | 3 | + | 2 | |
| VA06W-392 | 84 | | 59.1 | | 0 | - | 4 | |
| **Dominion** | 84 | | 59.2 | | 2 | | 1 | - |
| **SS 8500** | 84 | | 59.8 | | 3 | + | 2 | - |
| GA 00067-8E35 | 84 | | 59.3 | | 0 | - | 5 | + |
| VA08MAS-412 | 84 | | 57.8 | - | 0 | - | 1 | - |
| **USG 3315** | 83 | | 59.1 | | 2 | | 2 | - |
| VA09W-52 | 83 | | 59.1 | | 1 | | 4 | |
| VA08W-295 | 83 | | 60.6 | + | 1 | | 4 | |
| **Pioneer 26R15** | 83 | | 58.8 | | 3 | + | 3 | |

**Table 29, continued. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern Shore AREC, Painter, VA, 2011 harvest.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Leaf Rust (0-9) | | Powdery Mildew (0-9) | |
|---|---|---|---|---|---|---|---|---|
| GA 001138-8E36 | 83 | | 60.3 | + | 0 | - | 3 | |
| VA09W-75 | 83 | | 59.2 | | 0 | - | 1 | - |
| VA08MAS-369 | 83 | | 60.9 | + | 4 | + | 4 | |
| VA08W-176 | 82 | | 60.3 | + | 1 | | 4 | |
| **USG 3201** | 82 | | 59.9 | + | 2 | | 5 | + |
| **USG 3555** | 82 | | 57.7 | - | 3 | + | 2 | |
| VA09W-45 | 82 | | 58.0 | - | 1 | | 2 | |
| VA08W-630 | 82 | | 59.0 | | 0 | - | 5 | |
| **Progeny 357** | 82 | | 56.7 | - | 4 | + | 6 | + |
| VA08W-193 | 82 | | 58.2 | - | 1 | - | 2 | |
| **Branson** | 82 | | 58.7 | | 3 | | 3 | |
| VA08W-632 | 82 | | 59.0 | | 0 | - | 0 | - |
| **Progeny 117** | 81 | | 58.4 | - | 2 | | 7 | + |
| **Pioneer 26R31** | 81 | | 59.4 | | 3 | | 4 | |
| **USG 3438** | 81 | | 57.8 | - | 2 | | 4 | |
| VA09W-657 | 81 | | 60.0 | + | 2 | | 4 | |
| NC05-19896 | 81 | | 59.5 | | 1 | - | 3 | |
| **Dyna-Gro 9171** | 81 | | 57.6 | - | 3 | | 5 | |
| **Dyna-Gro 9012** | 81 | | 60.1 | + | 2 | | 6 | + |
| **OAKES** | 81 | | 59.5 | | 2 | | 6 | + |
| VA09W-73 | 81 | | 59.0 | | 0 | - | 3 | |
| **Pioneer 25R32** | 80 | | 58.9 | | 4 | + | 3 | |
| **SS-MPV 57** | 80 | | 58.9 | | 2 | | 6 | + |
| VA09W-67 | 80 | | 60.1 | + | 0 | - | 4 | |
| **SS 560** | 80 | | 58.4 | - | 5 | + | 4 | |
| VA09W-188WS | 80 | | 57.1 | - | 2 | | 2 | |
| **VA05W-139*** | 80 | | 58.8 | | 1 | | 4 | |
| VA09W-623 | 80 | | 60.9 | + | 2 | | 3 | |
| VA09W-641 | 79 | | 59.1 | | 0 | - | 5 | + |
| Progeny PGX10-2 | 79 | | 59.5 | | 2 | | 5 | |
| **SS 5205** | 79 | | 59.6 | | 0 | - | 2 | |
| VA09W-659 | 79 | | 61.5 | + | 3 | | 7 | + |
| **Dyna-Gro V9723** | 78 | | 57.7 | - | 4 | + | 5 | + |
| VA09W-46 | 78 | | 58.4 | - | 1 | | 5 | + |
| **Progeny 185** | 77 | | 58.6 | | 2 | | 6 | + |
| **USG 3770** | 77 | | 60.1 | + | 2 | | 6 | + |
| VA09W-656 | 77 | | 60.4 | + | 0 | - | 2 | |
| **SS 8404** | 75 | | 60.4 | + | 1 | | 5 | |
| **SS 8309** | 72 | - | 58.8 | | 5 | + | 3 | |
| **Progeny 166** | 71 | - | 59.0 | | 1 | | 7 | + |
| **SS 8302** | 71 | - | 59.0 | | 6 | + | 7 | + |
| **Massey** | 68 | - | 58.3 | - | 8 | + | 1 | - |
| **Pioneer 26R22** | 64 | - | 57.9 | - | 3 | | 7 | + |

**Table 29, continued. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern Shore AREC, Painter, VA, 2011 harvest.**

| Line | Yield (Bu/a) | Test Weight (Lb/bu) | Leaf Rust (0-9) | Powdery Mildew (0-9) |
|---|---|---|---|---|
| Average | 83 | 59.2 | 2 | 3 |
| LSD (O.05) | 9 | 0.7 | 1 | 1 |
| C.V. | 8 | 0.9 | --- | --- |

Released cultivars are shown in bold print. * Released line yet to be named.

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.

WS in the line designation indicates a white-seeded line; MAS in the line designation indicates a line derived using marker-assisted selection.

**Table 30. Summary of performance of entries in the Virginia Tech Wheat Test, Southern Piedmont AREC, Blackstone, VA, 2011 harvest.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Lodging (0-9) | | Barley Yellow Dwarf Virus (0-9) | |
|---|---|---|---|---|---|---|---|---|
| VA09W-112 | 102 | + | 62.1 | + | 2 | | 2 | |
| VA09W-110 | 102 | + | 58.7 | - | 3 | | 2 | |
| VA08MAS-369 | 100 | + | 61.6 | + | 1 | | 1 | |
| **W1566** | 100 | + | 59.5 | | 3 | | 1 | |
| VA06W-412 | 100 | + | 60.8 | | 1 | | 2 | |
| **SS 5205** | 99 | | 60.7 | | 3 | | 1 | |
| **SY 9978** | 99 | | 59.7 | | 5 | + | 2 | |
| **USG 3120** | 99 | | 61.0 | | 4 | | 2 | |
| VA08MAS-412 | 99 | | 59.6 | | 1 | | 2 | |
| **Featherstone VA-258** | 99 | | 59.9 | | 4 | | 1 | |
| VA05W-70 | 98 | | 61.6 | + | 4 | | 2 | |
| **VA05W-251*** | 98 | | 59.9 | | 4 | | 1 | |
| VA07W-429 | 98 | | 59.5 | | 2 | | 3 | |
| **Dyna-Gro V9723** | 98 | | 59.4 | | 3 | | 2 | |
| **Shirley** | 98 | | 59.6 | | 1 | | 2 | |
| **SS 8340** | 98 | | 61.3 | + | 1 | | 1 | |
| VA08W-294 | 98 | | 61.5 | + | 2 | | 1 | - |
| **Progeny 870** | 97 | | 59.2 | | 1 | | 1 | |
| **USG 3315** | 97 | | 60.2 | | 2 | | 1 | |
| **VA05W-151*** | 97 | | 60.9 | | 5 | + | 2 | |
| VA09W-73 | 97 | | 60.2 | | 2 | | 1 | |
| **USG 3555** | 97 | | 59.4 | | 2 | | 1 | |
| **Renwood 3434** | 96 | | 59.1 | - | 1 | | 2 | |
| VA07W-415 | 96 | | 59.5 | | 4 | | 3 | + |
| **Merl** | 96 | | 61.3 | + | 1 | | 2 | |
| VA08W-295 | 95 | | 61.3 | + | 2 | | 2 | |
| **VA05W-139*** | 95 | | 59.8 | | 0 | | 2 | |
| GA 001138-8E36 | 95 | | 61.3 | + | 3 | | 1 | |
| **USG 3665** | 95 | | 59.5 | | 2 | | 2 | |
| **USG 3438** | 95 | | 58.4 | - | 2 | | 4 | + |
| **Dyna-Gro 9171** | 95 | | 58.6 | - | 2 | | 2 | |
| **COKER 9553** | 95 | | 61.9 | + | 1 | | 3 | |
| VA08W-193 | 94 | | 60.1 | | 1 | | 3 | |
| **Chesapeake** | 94 | | 61.3 | + | 4 | | 2 | |
| VA08W-176 | 94 | | 61.8 | + | 1 | | 2 | |
| **SS-MPV 57** | 94 | | 60.2 | | 0 | | 3 | |
| VA08W-632 | 94 | | 60.1 | | 2 | | 2 | |
| **USG 3770** | 93 | | 61.1 | | 1 | | 2 | |
| **Pioneer 26R15** | 93 | | 59.0 | - | 1 | | 2 | |
| **Jamestown** | 93 | | 61.9 | + | 1 | | 1 | |
| **SS 8500** | 93 | | 59.6 | | 0 | - | 2 | |
| **USG 3251** | 93 | | 58.4 | - | 1 | | 2 | |
| **Pioneer 26R31** | 93 | | 60.2 | | 1 | | 2 | |
| VA09W-75 | 92 | | 60.5 | | 1 | | 1 | |

**Table 30, continued. Summary of performance of entries in the Virginia Tech Wheat Test, Southern Piedmont AREC, Blackstone, VA, 2011 harvest.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Lodging (0-9) | | Barley Yellow Dwarf Virus (0-9) | |
|---|---|---|---|---|---|---|---|---|
| **SS 520** | 92 | | 59.6 | | 4 | | 3 | + |
| **NC-Cape Fear** | 92 | | 60.8 | | 5 | + | 2 | |
| GA 00067-8E35 | 92 | | 59.1 | - | 4 | | 2 | |
| **Branson** | 92 | | 59.2 | | 4 | | 2 | |
| VA09W-67 | 92 | | 61.1 | | 2 | | 1 | |
| **USG 3592** | 92 | | 60.4 | | 4 | | 2 | |
| Progeny PGX10-2 | 92 | | 60.7 | | 4 | | 3 | |
| **Dyna-Gro 9922** | 92 | | 59.9 | | 0 | | 3 | |
| **Progeny 125** | 91 | | 60.3 | | 1 | | 2 | |
| Pioneer XW09H | 91 | | 58.0 | - | 0 | - | 3 | + |
| **Pioneer 25R32** | 91 | | 59.9 | | 3 | | 3 | |
| **SS 8404** | 91 | | 61.0 | | 1 | | 1 | |
| **OAKES** | 91 | | 61.6 | + | 1 | | 2 | |
| VA09W-188WS | 90 | | 58.3 | - | 5 | + | 1 | |
| VA09W-52 | 90 | | 60.1 | | 2 | | 1 | |
| NC05-19896 | 90 | | 60.6 | | 5 | + | 1 | |
| VA08W-92 | 90 | | 63.4 | + | 4 | | 2 | |
| **Dyna-Gro 9012** | 90 | | 60.5 | | 1 | | 2 | |
| VA06W-392 | 90 | | 60.4 | | 5 | + | 2 | |
| VA09W-659 | 90 | | 63.1 | + | 3 | | 2 | |
| **Dominion** | 89 | | 59.6 | | 1 | | 2 | |
| **USG 3201** | 89 | | 61.1 | | 2 | | 2 | |
| VA09W-45 | 89 | | 59.8 | | 4 | | 2 | |
| **Pioneer 26R20** | 89 | | 59.0 | - | 2 | | 3 | + |
| VA10W-119 | 89 | | 61.2 | | 4 | | 2 | |
| **Progeny 357** | 88 | | 56.7 | - | 2 | | 2 | |
| **Progeny 185** | 88 | | 59.8 | | 2 | | 2 | |
| **Pioneer 26R12** | 88 | | 61.1 | | 0 | - | 1 | |
| **SS 8302** | 88 | | 58.5 | - | 1 | | 3 | + |
| **SS 560** | 88 | | 59.2 | | 2 | | 3 | + |
| VA09W-46 | 87 | | 59.7 | | 6 | + | 2 | |
| **NC-Yadkin** | 87 | | 59.7 | | 4 | | 2 | |
| **Progeny 117** | 87 | | 60.3 | | 5 | + | 1 | |
| VA09W-623 | 86 | | 61.6 | + | 4 | | 2 | |
| VA09W-656 | 85 | | 62.0 | + | 2 | | 1 | |
| VA08W-630 | 85 | | 61.4 | + | 2 | | 3 | + |
| **SS 8700** | 85 | | 57.1 | - | 2 | | 1 | |
| VA09W-657 | 84 | - | 62.0 | + | 2 | | 2 | |
| **SS 8309** | 84 | - | 59.1 | - | 2 | | 3 | |
| VA09W-641 | 82 | - | 61.1 | | 9 | + | 1 | |
| **Massey** | 81 | - | 59.7 | | 3 | | 2 | |
| **Pioneer 26R22** | 80 | - | 57.7 | - | 2 | | 4 | + |
| **Progeny 166** | 80 | - | 60.1 | | 3 | | 2 | |

**Table 30, continued. Summary of performance of entries in the Virginia Tech Wheat Test, Southern Piedmont AREC, Blackstone, VA, 2011 harvest.**

| Line | Yield (Bu/a) | Test Weight (Lb/bu) | Lodging (0-9) | Barley Yellow Dwarf Virus (0-9) |
|---|---|---|---|---|
| Average | 92 | 60.2 | 2 | 2 |
| LSD (O.05) | 8 | 1.1 | 2 | 1 |
| C.V. | 6 | 1.3 | --- | --- |

Released cultivars are shown in bold print. * Released line yet to be named.

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.

WS in the line designation indicates a white-seeded line; MAS in the line designation indicates a line derived using marker-assisted selection.

**Table 31. Summary of performance of entries in the Virginia Tech Wheat Test, Northern Piedmont AREC, Orange, VA, 2011 harvest.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Date Headed (Julian) | | Height (In) | | Lodging (0-9) | | Powdery Mildew (0-9) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VA07W-415 | 121 | + | 58.3 | | 120 | | 45 | + | 1 | | 0 | |
| **Progeny 125** | 121 | + | 60.3 | + | 118 | - | 42 | | 0 | | 6 | + |
| Pioneer XW09H | 119 | + | 58.8 | | 122 | + | 43 | | 0 | | 2 | |
| **Dyna-Gro 9171** | 116 | + | 57.2 | | 120 | | 40 | - | 0 | | 2 | |
| **Dyna-Gro V9723** | 113 | + | 58.7 | | 119 | - | 50 | + | 0 | | 3 | + |
| **USG 3770** | 112 | | 60.2 | + | 120 | | 43 | | 0 | | 3 | + |
| **Progeny 870** | 112 | | 56.2 | - | 119 | - | 41 | - | 0 | | 4 | + |
| **Jamestown** | 111 | | 59.9 | + | 119 | - | 41 | - | 0 | | 1 | |
| **SS 520** | 111 | | 58.6 | | 119 | - | 44 | | 0 | | 2 | |
| **Branson** | 110 | | 58.7 | | 119 | | 43 | | 0 | | 0 | |
| VA09W-67 | 110 | | 60.4 | + | 121 | | 43 | | 0 | | 1 | |
| **Pioneer 25R32** | 109 | | 59.2 | | 121 | | 44 | | 0 | | 1 | |
| **USG 3555** | 108 | | 57.0 | - | 120 | | 39 | - | 1 | | 1 | |
| **USG 3201** | 106 | | 59.5 | | 120 | | 42 | | 1 | | 3 | + |
| VA08W-630 | 106 | | 57.4 | | 120 | | 42 | | 1 | | 1 | |
| **Pioneer 26R22** | 106 | | 58.6 | | 120 | | 46 | + | 0 | | 3 | + |
| **SS 8700** | 106 | | 58.9 | | 122 | + | 44 | | 1 | | 0 | |
| **Dyna-Gro 9012** | 105 | | 59.3 | | 120 | | 42 | | 0 | | 3 | |
| **VA05W-251*** | 105 | | 57.9 | | 120 | | 41 | - | 2 | | 0 | |
| VA09W-659 | 105 | | 62.0 | + | 120 | | 44 | + | 0 | | 0 | |
| VA08W-632 | 105 | | 58.0 | | 120 | | 42 | | 1 | | 0 | |
| **COKER 9553** | 105 | | 61.3 | + | 119 | - | 45 | + | 1 | | 0 | |
| **USG 3438** | 105 | | 56.5 | - | 122 | + | 41 | - | 0 | | 4 | + |
| VA09W-46 | 104 | | 57.2 | | 119 | | 41 | - | 3 | | 1 | |
| **SS 560** | 104 | | 57.7 | | 121 | | 43 | | 0 | | 2 | |
| VA06W-412 | 104 | | 59.3 | | 121 | | 42 | - | 0 | | 0 | |
| **Merl** | 103 | | 60.4 | + | 120 | | 42 | | 0 | | 0 | |
| **Shirley** | 103 | | 57.0 | - | 121 | | 41 | - | 0 | | 0 | |
| **OAKES** | 103 | | 61.3 | + | 121 | | 45 | + | 0 | | 5 | + |
| **SS 8500** | 103 | | 56.3 | - | 120 | | 45 | + | 0 | | 0 | |
| VA09W-112 | 103 | | 61.2 | + | 121 | + | 43 | | 1 | | 0 | |
| **SS 8340** | 103 | | 58.6 | | 120 | | 41 | - | 1 | | 3 | + |
| **NC-Cape Fear** | 103 | | 59.1 | | 120 | | 43 | | 2 | | 0 | |
| **Progeny 357** | 103 | | 55.5 | - | 121 | | 44 | + | 0 | | 6 | + |
| **Progeny 185** | 102 | | 58.7 | | 120 | | 48 | + | 0 | | 4 | + |
| **W1566** | 102 | | 57.3 | | 120 | | 47 | + | 2 | | 0 | |
| VA07W-429 | 102 | | 56.2 | - | 119 | | 43 | | 1 | | 0 | |
| VA09W-188WS | 101 | | 57.2 | | 119 | - | 45 | + | 3 | | 1 | |
| VA08W-295 | 101 | | 59.1 | | 121 | | 43 | | 0 | | 0 | |
| VA08MAS-369 | 101 | | 59.5 | | 121 | | 43 | | 1 | | 0 | |
| VA08W-92 | 101 | | 61.3 | + | 119 | - | 43 | | 1 | | 1 | |
| **USG 3251** | 100 | | 58.6 | | 122 | + | 45 | + | 1 | | 2 | |
| **SS 5205** | 100 | | 59.2 | | 121 | | 40 | - | 1 | | 0 | |
| **Pioneer 26R31** | 100 | | 57.6 | | 121 | | 41 | - | 0 | | 0 | |

**Table 31, continued. Summary of performance of entries in the Virginia Tech Wheat Test, Northern Piedmont AREC, Orange, VA, 2011 harvest.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Date Headed (Julian) | | Height (In) | | Lodging (0-9) | | Powdery Mildew (0-9) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **USG 3120** | 100 | | 58.3 | | 119 | - | 42 | | 2 | | 2 | |
| **VA05W-139*** | 100 | | 57.8 | | 122 | + | 41 | - | 0 | | 0 | |
| **Featherstone VA-258** | 99 | | 58.0 | | 121 | | 46 | + | 4 | + | 1 | |
| **Dyna-Gro 9922** | 99 | | 57.4 | | 119 | | 45 | + | 0 | | 1 | |
| VA09W-75 | 98 | | 59.9 | + | 120 | | 42 | | 0 | | 0 | |
| **USG 3315** | 97 | | 59.2 | | 121 | | 44 | | 0 | | 0 | |
| VA06W-392 | 97 | | 56.7 | - | 120 | | 40 | - | 6 | + | 0 | |
| VA10W-119 | 97 | | 58.6 | | 120 | | 43 | | 4 | + | 2 | |
| **Pioneer 26R20** | 97 | | 58.1 | | 121 | + | 43 | | 2 | | 1 | |
| **Renwood 3434** | 96 | | 56.0 | - | 120 | | 38 | - | 2 | | 0 | |
| **Pioneer 26R12** | 94 | | 60.0 | + | 120 | | 43 | | 3 | | 3 | |
| VA09W-641 | 94 | | 58.4 | | 117 | - | 41 | - | 4 | + | 1 | |
| **Dominion** | 94 | | 57.6 | | 121 | | 39 | - | 0 | | 0 | |
| **Pioneer 26R15** | 94 | | 57.7 | | 120 | | 43 | | 2 | | 2 | |
| **VA05W-151*** | 93 | | 58.9 | | 119 | | 42 | - | 4 | + | 1 | |
| VA09W-110 | 92 | | 57.6 | | 121 | | 41 | - | 1 | | 3 | + |
| **Chesapeake** | 92 | | 59.0 | | 120 | | 42 | - | 0 | | 0 | |
| **USG 3665** | 92 | | 58.3 | | 120 | | 48 | + | 2 | | 3 | + |
| **SS 8302** | 91 | | 58.7 | | 121 | | 46 | + | 0 | | 5 | + |
| VA08W-193 | 91 | | 57.2 | | 120 | | 42 | - | 0 | | 0 | |
| VA08W-176 | 91 | | 58.9 | | 121 | | 45 | + | 0 | | 1 | |
| **Progeny 166** | 90 | | 57.6 | | 120 | | 49 | + | 1 | | 7 | + |
| VA08MAS-412 | 90 | | 55.7 | - | 119 | - | 43 | | 0 | | 1 | |
| **SS 8309** | 90 | | 60.1 | + | 121 | | 44 | | 0 | | 2 | |
| **NC-Yadkin** | 89 | | 57.5 | | 120 | | 42 | - | 2 | | 0 | |
| **SS 8404** | 88 | | 59.7 | | 122 | + | 40 | - | 0 | | 3 | + |
| VA09W-73 | 88 | | 58.9 | | 121 | + | 42 | - | 0 | | 0 | |
| VA09W-45 | 88 | | 58.3 | | 119 | - | 40 | - | 7 | + | 1 | |
| VA08W-294 | 88 | | 59.9 | + | 121 | | 42 | | 0 | | 0 | |
| **Progeny 117** | 87 | | 59.0 | | 119 | - | 46 | + | 1 | | 2 | |
| Progeny PGX10-2 | 86 | | 60.4 | + | 121 | | 46 | + | 3 | | 1 | |
| VA05W-70 | 86 | | 59.8 | | 120 | | 41 | - | 1 | | 1 | |
| **SY 9978** | 85 | | 56.2 | - | 121 | | 44 | + | 5 | + | 1 | |
| **SS-MPV 57** | 84 | | 58.2 | | 122 | + | 43 | | 5 | + | 1 | |
| **USG 3592** | 84 | | 59.0 | | 121 | | 45 | + | 4 | + | 2 | |
| GA 00067-8E35 | 82 | - | 57.9 | | 120 | | 42 | | 3 | + | 2 | |
| VA09W-623 | 82 | - | 59.7 | | 120 | | 41 | - | 5 | + | 1 | |
| VA09W-52 | 79 | - | 58.1 | | 119 | | 43 | | 3 | | 1 | |
| **Massey** | 77 | - | 57.9 | | 122 | + | 49 | + | 4 | + | 1 | |
| NC05-19896 | 75 | - | 58.3 | | 120 | | 39 | - | 4 | + | 1 | |
| VA09W-657 | 74 | - | 59.6 | | 120 | | 43 | | 5 | + | 0 | |
| VA09W-656 | 72 | - | 58.8 | | 120 | | 42 | | 6 | + | 0 | |
| GA 001138-8E36 | 72 | - | 57.7 | | 122 | + | 45 | + | 4 | + | 2 | |

**Table 31, continued. Summary of performance of entries in the Virginia Tech Wheat Test, Northern Piedmont AREC, Orange, VA, 2011 harvest.**

| Line | Yield (Bu/a) | Test Weight (Lb/bu) | Date Headed (Julian) | Height (In) | Lodging (0-9) | Powdery Mildew (0-9) |
|---|---|---|---|---|---|---|
| Average | 98 | 58.5 | 120 | 43 | 1 | 1 |
| LSD (O.05) | 15 | 1.4 | 1 | 1 | 2 | 1 |
| C.V. | 11 | 1.7 | 1 | 2 | --- | --- |

Released cultivars are shown in bold print. * Released line yet to be named.

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.

WS in the line designation indicates a white-seeded line; MAS in the line designation indicates a line derived using marker-assisted selection.

**Table 32. Summary of performance of entries in the Virginia Tech Wheat Test, Kentland farm, Blacksburg, VA, 2011 harvest.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Date Headed (Julian) | | Height (In) | | Lodging (0-9) | | Leaf Rust (0-9) | | Barley Yellow Dwarf Virus (0-9) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **W1566** | 104 | + | 54.7 | - | 129 | | 45 | + | 6 | + | 6 | + | 1 | |
| VA06W-412 | 103 | + | 59.0 | + | 130 | + | 40 | | 1 | - | 1 | | 1 | |
| VA07W-415 | 102 | + | 56.1 | | 129 | | 41 | | 5 | | 1 | - | 2 | + |
| **Branson** | 100 | + | 56.3 | | 126 | - | 40 | | 1 | - | 4 | + | 1 | |
| **Featherstone VA-258** | 100 | + | 56.5 | | 129 | + | 42 | + | 4 | | 4 | + | 1 | |
| **Progeny 870** | 99 | + | 53.8 | - | 126 | - | 38 | - | 1 | - | 2 | | 2 | |
| VA08MAS-369 | 98 | | 59.5 | + | 129 | + | 39 | - | 3 | | 3 | | 2 | |
| **USG 3555** | 98 | | 56.1 | | 127 | - | 37 | - | 3 | | 2 | | 1 | |
| **SS 8700** | 97 | | 57.1 | | 130 | + | 42 | | 3 | | 5 | + | 0 | |
| **SS-MPV 57** | 97 | | 58.9 | + | 130 | + | 43 | + | 3 | | 5 | + | 2 | + |
| VA10W-119 | 97 | | 57.5 | | 126 | - | 41 | | 6 | + | 1 | | 0 | |
| **Progeny 117** | 97 | | 57.5 | | 124 | - | 43 | + | 5 | | 5 | + | 1 | |
| **COKER 9553** | 97 | | 59.7 | + | 125 | - | 43 | + | 2 | | 1 | | 1 | |
| **Merl** | 96 | | 58.3 | + | 126 | - | 41 | | 3 | | 3 | | 1 | |
| **Shirley** | 96 | | 53.8 | - | 129 | | 38 | - | 2 | | 0 | - | 0 | |
| **Progeny 125** | 96 | | 56.2 | | 124 | - | 40 | | 1 | - | 4 | + | 1 | |
| **VA05W-139*** | 96 | | 56.5 | | 130 | + | 38 | - | 1 | - | 2 | | 1 | |
| **Jamestown** | 96 | | 59.1 | + | 126 | - | 38 | - | 2 | | 2 | | 1 | |
| Progeny PGX10-2 | 96 | | 60.0 | + | 129 | | 42 | | 5 | | 4 | + | 2 | |
| **VA05W-151*** | 95 | | 59.5 | + | 128 | | 38 | - | 6 | + | 4 | + | 1 | |
| **USG 3438** | 95 | | 52.5 | - | 126 | - | 38 | - | 1 | - | 2 | | 2 | |
| Pioneer XW09H | 95 | | 56.9 | | 130 | + | 40 | | 1 | - | 3 | | 1 | |
| **Dyna-Gro 9171** | 95 | | 53.0 | - | 127 | - | 39 | | 2 | | 2 | | 2 | |
| **Pioneer 26R12** | 95 | | 59.9 | + | 129 | | 43 | + | 2 | | 2 | | 1 | |
| **SS 8500** | 95 | | 57.0 | | 127 | | 42 | + | 1 | - | 2 | | 1 | |
| **Dyna-Gro V9723** | 95 | | 56.2 | | 127 | | 44 | + | 2 | | 5 | + | 1 | |
| VA08W-295 | 94 | | 58.9 | + | 129 | + | 39 | | 5 | | 1 | | 1 | |
| **Dyna-Gro 9922** | 94 | | 57.4 | | 128 | | 43 | + | 2 | | 2 | | 1 | |
| **Pioneer 26R15** | 93 | | 55.6 | | 128 | | 42 | | 1 | - | 1 | | 0 | |
| VA09W-110 | 93 | | 57.2 | | 130 | + | 37 | - | 1 | - | 0 | - | 1 | |
| VA08W-193 | 93 | | 57.8 | | 130 | + | 38 | - | 1 | - | 1 | - | 0 | |
| **Renwood 3434** | 92 | | 56.2 | | 129 | + | 36 | - | 3 | | 4 | + | 1 | |
| VA09W-73 | 92 | | 58.2 | + | 130 | + | 39 | | 5 | | 1 | - | 1 | |
| VA08W-294 | 92 | | 58.7 | + | 129 | + | 43 | + | 5 | | 0 | - | 0 | |
| **SS 560** | 92 | | 56.6 | | 130 | + | 39 | | 1 | - | 3 | | 2 | |
| **USG 3665** | 92 | | 56.7 | | 129 | | 42 | | 2 | | 3 | | 1 | |
| **SS 520** | 92 | | 55.6 | | 126 | - | 42 | + | 4 | | 3 | | 1 | |
| **SS 8404** | 92 | | 59.7 | + | 129 | | 39 | - | 2 | | 1 | | 1 | |
| VA09W-188WS | 91 | | 54.3 | - | 126 | - | 43 | + | 4 | | 2 | | 0 | |
| VA05W-70 | 91 | | 59.4 | + | 129 | | 38 | - | 2 | | 1 | - | 1 | |
| **Pioneer 26R20** | 91 | | 57.3 | | 130 | + | 41 | | 5 | | 1 | | 0 | |
| VA09W-75 | 91 | | 58.1 | + | 129 | | 39 | | 4 | | 0 | - | 0 | |
| **SS 8340** | 90 | | 57.0 | | 128 | | 41 | | 4 | | 2 | | 1 | |
| **Progeny 185** | 89 | | 56.1 | | 128 | | 42 | + | 1 | - | 4 | + | 1 | |

**Table 32, continued. Summary of performance of entries in the Virginia Tech Wheat Test, Kentland farm, Blacksburg, VA, 2011 harvest.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Date Headed (Julian) | | Height (In) | | Lodging (0-9) | | Leaf Rust (0-9) | | Barley Yellow Dwarf Virus (0-9) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VA08W-176 | 89 | | 59.8 | + | 130 | + | 40 | | 5 | | 2 | | 1 | |
| **Progeny 357** | 89 | | 53.4 | - | 130 | + | 41 | | 3 | | 2 | | 1 | |
| **USG 3315** | 89 | | 56.5 | | 130 | + | 40 | | 5 | | 3 | | 1 | |
| **USG 3201** | 89 | | 57.7 | | 128 | | 39 | | 2 | | 2 | | 1 | |
| **Dyna-Gro 9012** | 89 | | 57.5 | | 127 | | 40 | | 2 | | 1 | | 1 | |
| **Pioneer 25R32** | 88 | | 57.5 | | 129 | | 40 | | 4 | | 4 | + | 2 | |
| **USG 3251** | 88 | | 57.1 | | 130 | + | 42 | + | 3 | | 3 | | 1 | |
| **SY 9978** | 88 | | 54.8 | - | 128 | | 42 | + | 4 | | 3 | | 1 | |
| **SS 8302** | 87 | | 58.0 | | 129 | | 42 | + | 3 | | 4 | + | 1 | |
| **USG 3770** | 87 | | 57.3 | | 127 | | 40 | | 3 | | 2 | | 1 | |
| **VA05W-251*** | 87 | | 55.7 | | 129 | + | 39 | | 5 | | 1 | - | 1 | |
| VA09W-45 | 87 | | 54.9 | - | 127 | - | 38 | - | 4 | | 1 | | 1 | |
| GA 001138-8E36 | 87 | | 59.2 | + | 130 | + | 45 | + | 6 | + | 1 | - | 1 | |
| VA08W-632 | 87 | | 55.3 | - | 128 | | 40 | | 2 | | 3 | | 1 | |
| **USG 3120** | 87 | | 57.8 | | 124 | - | 41 | | 4 | | 2 | | 0 | |
| VA08W-630 | 87 | | 55.4 | - | 128 | | 39 | | 3 | | 2 | | 2 | |
| VA06W-392 | 86 | | 55.5 | - | 129 | | 38 | - | 5 | | 1 | - | 1 | |
| VA09W-52 | 86 | | 55.8 | | 128 | | 41 | | 3 | | 1 | | 1 | |
| VA07W-429 | 86 | | 52.7 | - | 128 | | 40 | | 4 | | 0 | - | 1 | |
| **Chesapeake** | 86 | | 57.6 | | 129 | | 38 | - | 6 | + | 4 | + | 1 | |
| VA09W-67 | 85 | | 57.5 | | 130 | + | 41 | | 3 | | 1 | | 0 | |
| VA09W-46 | 85 | | 53.6 | - | 129 | | 39 | | 7 | + | 2 | | 1 | |
| **OAKES** | 85 | | 58.1 | + | 130 | + | 41 | | 3 | | 3 | | 1 | |
| VA09W-641 | 84 | | 57.2 | | 123 | - | 38 | - | 8 | + | 1 | - | 1 | |
| **NC-Cape Fear** | 84 | | 57.2 | | 126 | - | 39 | | 7 | + | 1 | | 1 | |
| **Pioneer 26R22** | 84 | | 56.4 | | 129 | | 42 | + | 4 | | 3 | | 1 | |
| VA08MAS-412 | 84 | | 52.8 | - | 128 | | 40 | | 3 | | 0 | - | 1 | |
| VA09W-659 | 84 | | 59.8 | + | 128 | | 40 | | 5 | | 4 | + | 1 | |
| VA08W-92 | 84 | | 59.1 | + | 127 | - | 40 | | 5 | | 1 | | 0 | |
| GA 00067-8E35 | 83 | | 55.6 | | 128 | | 39 | | 4 | | 1 | - | 0 | |
| **SS 5205** | 83 | | 55.9 | | 129 | | 36 | - | 5 | | 1 | - | 1 | |
| **Dominion** | 82 | | 56.3 | | 128 | | 38 | - | 4 | | 2 | | 1 | |
| **NC-Yadkin** | 82 | | 55.8 | | 129 | | 40 | | 5 | | 1 | - | 0 | |
| VA09W-657 | 80 | | 58.5 | + | 128 | | 41 | | 5 | | 2 | | 1 | |
| NC05-19896 | 79 | - | 56.4 | | 128 | | 38 | - | 6 | + | 1 | - | 1 | |
| VA09W-112 | 78 | - | 60.0 | + | 130 | + | 39 | | 5 | | 2 | | 2 | + |
| **Progeny 166** | 78 | - | 54.7 | - | 128 | | 44 | + | 3 | | 2 | | 1 | |
| **SS 8309** | 77 | - | 57.2 | | 130 | + | 41 | | 1 | - | 2 | | 1 | |
| **Pioneer 26R31** | 76 | - | 54.1 | - | 129 | | 37 | - | 2 | | 4 | + | 2 | + |
| VA09W-656 | 75 | - | 57.7 | | 129 | + | 40 | | 5 | | 1 | - | 1 | |
| **USG 3592** | 72 | - | 56.8 | | 129 | + | 42 | + | 7 | + | 1 | | 1 | |
| **Massey** | 71 | - | 55.9 | | 129 | | 44 | + | 7 | + | 8 | + | 2 | + |
| VA09W-623 | 68 | - | 57.5 | | 127 | | 40 | | 7 | + | 2 | | 2 | |

**Table 32, continued. Summary of performance of entries in the Virginia Tech Wheat Test, Kentland farm, Blacksburg, VA, 2011 harvest.**

| Line | Yield (Bu/a) | Test Weight (Lb/bu) | Date Headed (Julian) | Height (In) | Lodging (0-9) | Leaf Rust (0-9) | Barley Yellow Dwarf Virus (0-9) |
|---|---|---|---|---|---|---|---|
| Average | 89 | 56.8 | 128 | 40 | 3 | 2 | 1 |
| LSD (O.05) | 10 | 1.3 | 1 | 2 | 2 | 1 | 1 |
| C.V. | 8 | 1.6 | 1 | 3 | --- | --- | --- |

Released cultivars are shown in bold print. * Released line yet to be named.

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.

WS in the line designation indicates a white-seeded line; MAS in the line designation indicates a line derived using marker-assisted selection.

**Table 33. Summary of performance of entries in the Virginia Tech Wheat Test at Shenandoah Valley in Augusta County, VA, 2011 harvest.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Lodging (0-9) | |
|---|---|---|---|---|---|---|
| **Dyna-Gro 9171** | 96 | + | 55.0 | - | 4 | |
| **Branson** | 95 | + | 55.7 | | 5 | |
| Pioneer XW09H | 94 | + | 57.4 | | 2 | - |
| **USG 3438** | 92 | + | 54.8 | - | 2 | - |
| **Progeny 870** | 92 | + | 54.4 | - | 2 | - |
| **Featherstone VA-258** | 92 | + | 55.8 | | 7 | |
| **USG 3251** | 91 | + | 57.8 | + | 3 | - |
| **SS 8340** | 89 | | 57.6 | + | 4 | |
| VA10W-119 | 89 | | 57.1 | | 7 | |
| **Dyna-Gro V9723** | 89 | | 55.3 | | 5 | |
| **Pioneer 25R32** | 89 | | 57.2 | | 7 | |
| **USG 3770** | 89 | | 57.3 | | 4 | |
| **Pioneer 26R15** | 88 | | 55.6 | | 4 | |
| **OAKES** | 88 | | 56.8 | | 6 | |
| **Shirley** | 88 | | 55.4 | | 3 | - |
| **SS 8500** | 87 | | 56.8 | | 4 | - |
| **VA05W-139*** | 87 | | 57.7 | + | 2 | - |
| **W1566** | 87 | | 54.3 | - | 6 | |
| **Dyna-Gro 9012** | 87 | | 57.1 | | 8 | |
| **Dyna-Gro 9922** | 87 | | 56.8 | | 4 | |
| **Progeny 357** | 86 | | 54.0 | - | 7 | |
| VA07W-415 | 86 | | 55.0 | - | 6 | |
| VA09W-110 | 85 | | 54.0 | - | 8 | |
| **Progeny 125** | 85 | | 55.0 | - | 4 | |
| VA07W-429 | 85 | | 55.3 | | 7 | |
| VA08W-92 | 85 | | 57.7 | + | 7 | |
| **VA05W-251*** | 85 | | 55.5 | | 6 | |
| **Pioneer 26R31** | 85 | | 55.8 | | 9 | + |
| **SS 8309** | 84 | | 56.6 | | 4 | - |
| Progeny PGX10-2 | 84 | | 57.0 | | 8 | |
| VA08W-193 | 84 | | 55.2 | | 8 | |
| VA08W-294 | 84 | | 58.1 | + | 7 | |
| **USG 3555** | 84 | | 56.1 | | 9 | |
| **USG 3315** | 84 | | 57.9 | + | 8 | |
| VA08W-295 | 84 | | 57.6 | + | 6 | |
| **Merl** | 83 | | 56.7 | | 5 | |
| VA09W-52 | 83 | | 56.8 | | 7 | |
| **Progeny 185** | 83 | | 56.0 | | 4 | - |
| VA09W-188WS | 83 | | 53.9 | - | 6 | |
| **SS 5205** | 83 | | 55.7 | | 8 | |
| VA09W-75 | 83 | | 57.1 | | 8 | |
| VA08W-630 | 82 | | 55.8 | | 6 | |
| **USG 3201** | 82 | | 57.2 | | 7 | |
| **COKER 9553** | 82 | | 57.1 | | 4 | |

**Table 33, continued. Summary of performance of entries in the Virginia Tech Wheat Test at Shenandoah Valley in Augusta County, VA, 2011 harvest.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Lodging (0-9) | |
|---|---|---|---|---|---|---|
| **SS 520** | 82 | | 53.6 | - | 9 | + |
| VA09W-45 | 82 | | 55.5 | | 9 | |
| VA06W-412 | 81 | | 57.3 | | 7 | |
| **Pioneer 26R22** | 81 | | 55.5 | | 8 | |
| **SS 8404** | 81 | | 58.2 | + | 4 | - |
| **Jamestown** | 81 | | 57.8 | + | 8 | |
| VA09W-73 | 81 | | 57.6 | + | 6 | |
| **Renwood 3434** | 81 | | 56.3 | | 5 | |
| VA09W-112 | 80 | | 59.0 | + | 7 | |
| **Dominion** | 80 | | 56.2 | | 7 | |
| **Progeny 117** | 80 | | 56.0 | | 6 | |
| **USG 3665** | 80 | | 55.9 | | 7 | |
| **Pioneer 26R12** | 80 | | 57.4 | | 8 | |
| VA09W-67 | 79 | | 57.4 | | 8 | |
| **SS 560** | 79 | | 55.4 | | 5 | |
| VA08W-632 | 79 | | 55.7 | | 5 | |
| **SS-MPV 57** | 79 | | 57.2 | | 7 | |
| **SS 8700** | 78 | | 53.4 | - | 8 | |
| VA08W-176 | 78 | | 57.8 | + | 7 | |
| VA08MAS-412 | 78 | | 55.0 | - | 5 | |
| **SS 8302** | 78 | | 58.0 | + | 3 | - |
| **Chesapeake** | 78 | | 56.5 | | 7 | |
| **Progeny 166** | 78 | | 54.7 | - | 6 | |
| **USG 3120** | 77 | | 57.5 | + | 6 | |
| **NC-Cape Fear** | 77 | | 56.0 | | 7 | |
| VA08MAS-369 | 76 | | 57.8 | + | 6 | |
| **Pioneer 26R20** | 75 | | 56.1 | | 6 | |
| **VA05W-151*** | 75 | | 56.6 | | 9 | + |
| VA06W-392 | 75 | | 56.2 | | 7 | |
| GA 00067-8E35 | 74 | | 55.1 | - | 5 | |
| **SY 9978** | 73 | | 54.5 | - | 7 | |
| NC05-19896 | 72 | | 56.3 | | 8 | |
| VA05W-70 | 72 | | 57.5 | + | 8 | |
| VA09W-659 | 71 | - | 58.2 | + | 9 | + |
| VA09W-656 | 70 | - | 57.4 | | 6 | |
| **NC-Yadkin** | 70 | - | 55.7 | | 8 | |
| VA09W-657 | 70 | - | 57.5 | + | 7 | |
| **USG 3592** | 69 | - | 55.8 | | 7 | |
| VA09W-46 | 69 | - | 55.2 | | 9 | + |
| VA09W-623 | 67 | - | 57.0 | | 9 | + |
| **Massey** | 67 | - | 57.5 | + | 7 | |
| GA 001138-8E36 | 67 | - | 56.6 | | 5 | |
| VA09W-641 | 65 | - | 55.3 | | 9 | + |

**Table 33, continued. Summary of performance of entries in the Virginia Tech Wheat Test at Shenandoah Valley in Augusta County, VA, 2011 harvest.**

| Line | Yield (Bu/a) | Test Weight (Lb/bu) | Lodging (0-9) |
|---|---|---|---|
| Average | 81 | 56.3 | 6 |
| LSD (O.05) | 10 | 1.2 | 3 |
| C.V. | 9 | 1.5 | --- |

Released cultivars are shown in bold print. * Released line yet to be named.

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.

WS in the line designation indicates a white-seeded line; MAS in the line designation indicates a line derived using marker-assisted selection.

**Table 34. Summary of performance of entries in the Virginia Tech Wheat Test, planted No-Till at Tidewater AREC, Holland, VA, 2011 harvest.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Lodging (0-9) | |
|---|---|---|---|---|---|---|
| **Featherstone VA-258** | 83 | + | 59.9 | | 2 | |
| VA07W-429 | 83 | + | 59.8 | | 2 | |
| **W1566** | 82 | + | 59.5 | - | 2 | |
| **Pioneer 26R22** | 81 | + | 59.4 | - | 1 | |
| **Progeny 357** | 80 | + | 58.2 | - | 1 | |
| **Shirley** | 79 | | 59.6 | | 0 | |
| VA06W-412 | 78 | | 61.7 | + | 1 | |
| **SS 520** | 78 | | 59.4 | - | 4 | + |
| VA09W-52 | 78 | | 60.7 | | 2 | |
| VA08MAS-412 | 78 | | 59.7 | | 2 | |
| **Dyna-Gro 9171** | 77 | | 59.2 | - | 1 | |
| **SS 8302** | 77 | | 60.6 | | 0 | |
| **Pioneer 26R15** | 77 | | 59.8 | | 2 | |
| VA10W-119 | 77 | | 61.4 | | 1 | |
| VA08W-294 | 77 | | 60.6 | | 1 | |
| **SS 8340** | 76 | | 61.1 | | 1 | |
| VA08MAS-369 | 76 | | 61.3 | | 1 | |
| **VA05W-151*** | 76 | | 61.1 | | 2 | |
| **USG 3120** | 76 | | 61.7 | + | 1 | |
| VA09W-110 | 76 | | 60.5 | | 1 | |
| **Dyna-Gro V9723** | 75 | | 59.6 | | 3 | |
| **Dominion** | 75 | | 60.1 | | 1 | |
| **USG 3315** | 75 | | 60.7 | | 1 | |
| **USG 3438** | 75 | | 58.5 | - | 2 | |
| **VA05W-251*** | 74 | | 59.8 | | 2 | |
| GA 001138-8E36 | 74 | | 61.4 | | 0 | |
| **Dyna-Gro 9012** | 74 | | 61.2 | | 1 | |
| **Progeny 117** | 74 | | 60.0 | | 4 | + |
| **USG 3665** | 74 | | 59.5 | - | 1 | |
| **SY 9978** | 74 | | 60.4 | | 2 | |
| **Progeny 185** | 74 | | 60.0 | | 1 | |
| **SS-MPV 57** | 74 | | 59.8 | | 2 | |
| VA07W-415 | 74 | | 60.0 | | 2 | |
| VA08W-193 | 73 | | 59.2 | - | 2 | |
| GA 00067-8E35 | 73 | | 61.4 | | 2 | |
| **USG 3251** | 73 | | 59.6 | | 1 | |
| **NC-Yadkin** | 73 | | 59.7 | | 1 | |
| Pioneer XW09H | 73 | | 59.5 | - | 1 | |
| **VA05W-139*** | 73 | | 60.4 | | 0 | |
| **OAKES** | 73 | | 60.1 | | 1 | |
| **Pioneer 26R20** | 73 | | 60.4 | | 1 | |
| **SS 8404** | 72 | | 62.1 | + | 0 | |
| **Dyna-Gro 9922** | 72 | | 60.8 | | 0 | |
| VA06W-392 | 72 | | 60.5 | | 1 | |

**Table 34, continued. Summary of performance of entries in the Virginia Tech Wheat Test, planted No-Till at Tidewater AREC, Holland, VA, 2011 harvest.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Lodging (0-9) | |
|---|---|---|---|---|---|---|
| VA09W-46 | 72 | | 60.5 | | 1 | |
| **SS 8700** | 72 | | 59.0 | - | 2 | |
| **Progeny 870** | 72 | | 58.9 | - | 1 | |
| **Progeny 125** | 72 | | 60.6 | | 1 | |
| **Pioneer 26R31** | 71 | | 60.2 | | 1 | |
| **Progeny 166** | 71 | | 60.1 | | 2 | |
| **USG 3201** | 71 | | 61.2 | | 0 | |
| **Pioneer 25R32** | 71 | | 60.8 | | 1 | |
| **Jamestown** | 71 | | 62.2 | + | 1 | |
| **NC-Cape Fear** | 71 | | 61.6 | + | 3 | |
| VA08W-92 | 71 | | 62.1 | + | 2 | |
| VA08W-632 | 70 | | 60.4 | | 1 | |
| **SS 8309** | 70 | | 60.3 | | 2 | |
| **Renwood 3434** | 70 | | 59.3 | - | 1 | |
| VA09W-45 | 70 | | 59.6 | | 1 | |
| **Chesapeake** | 70 | | 61.0 | | 2 | |
| **USG 3770** | 70 | | 61.1 | | 1 | |
| **USG 3592** | 69 | | 60.8 | | 1 | |
| VA09W-73 | 69 | | 61.1 | | 1 | |
| VA09W-67 | 69 | | 62.0 | + | 1 | |
| **Pioneer 26R12** | 69 | | 61.2 | | 0 | |
| **COKER 9553** | 69 | | 61.9 | + | 1 | |
| **Merl** | 69 | | 61.8 | + | 0 | |
| **SS 5205** | 68 | | 61.2 | | 1 | |
| VA08W-295 | 68 | | 61.2 | | 2 | |
| **SS 8500** | 68 | | 61.3 | | 1 | |
| VA09W-188WS | 68 | | 59.3 | - | 5 | + |
| Progeny PGX10-2 | 68 | | 60.5 | | 5 | + |
| VA08W-176 | 67 | | 61.8 | + | 1 | |
| VA09W-659 | 67 | | 61.2 | | 3 | + |
| VA09W-112 | 67 | | 62.4 | + | 1 | |
| VA05W-70 | 67 | | 61.2 | | 1 | |
| VA09W-623 | 66 | | 62.5 | + | 2 | |
| VA09W-75 | 66 | | 60.7 | | 0 | |
| VA09W-656 | 66 | | 61.1 | | 1 | |
| VA09W-657 | 65 | | 61.4 | | 2 | |
| VA08W-630 | 65 | | 60.7 | | 1 | |
| **SS 560** | 65 | | 59.6 | | 1 | |
| **USG 3555** | 65 | | 59.4 | - | 1 | |
| NC05-19896 | 64 | - | 61.1 | | 2 | |
| VA09W-641 | 63 | - | 61.3 | | 4 | + |
| **Massey** | 63 | - | 60.2 | | 2 | |
| **Branson** | 62 | - | 59.5 | - | 2 | |

**Table 34, continued. Summary of performance of entries in the Virginia Tech Wheat Test, planted No-Till at Tidewater AREC, Holland, VA, 2011 harvest.**

| Line | Yield (Bu/a) | Test Weight (Lb/bu) | Lodging (0-9) |
|---|---|---|---|
| Average | 72 | 60.5 | 1 |
| LSD (O.05) | 8 | 1.0 | 1 |
| C.V. | 8 | 1.2 | --- |

Released cultivars are shown in bold print. * Released line yet to be named.

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.

WS in the line designation indicates a white-seeded line; MAS in the line designation indicates a line derived using marker-assisted selection.

**Table 35. Summary of performance of entries in the Virginia Tech Wheat Test planted No-Till at Warsaw, 2011 harvest.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Date Headed (Julian) | | Height (In) | | Lodging (0-9) | | Leaf Rust (0-9) | | Powdery Mildew (0-9) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Progeny 870** | 115 | + | 61.5 | | 117 | - | 31 | | 0 | | 5 | | 2 | + |
| **Featherstone VA-258** | 115 | + | 61.9 | | 118 | | 34 | + | 0 | | 1 | - | 0 | |
| VA07W-415 | 114 | + | 62.0 | | 117 | | 33 | | 0 | | 4 | | 0 | |
| VA09W-52 | 112 | + | 62.0 | | 117 | | 34 | + | 0 | | 2 | - | 1 | |
| **SS 8340** | 112 | + | 62.5 | | 118 | | 33 | | 0 | | 4 | | 2 | + |
| **VA05W-151*** | 111 | | 64.1 | + | 117 | - | 30 | | 0 | | 3 | | 2 | + |
| **USG 3770** | 111 | | 63.0 | + | 117 | | 32 | | 0 | | 5 | | 2 | + |
| **W1566** | 111 | | 61.7 | | 118 | | 37 | + | 0 | | 8 | + | 0 | |
| **SS 520** | 111 | | 61.7 | | 116 | - | 32 | | 0 | | 5 | + | 1 | |
| **USG 3438** | 110 | | 61.5 | | 117 | - | 30 | | 0 | | 4 | | 2 | |
| VA08MAS-412 | 110 | | 60.0 | - | 117 | | 31 | | 0 | | 1 | - | 0 | |
| **USG 3201** | 110 | | 63.1 | + | 118 | | 32 | | 0 | | 4 | | 2 | |
| VA08MAS-369 | 110 | | 62.5 | | 119 | | 29 | - | 0 | | 4 | | 0 | |
| VA08W-294 | 110 | | 62.4 | | 118 | | 32 | | 0 | | 1 | - | 0 | |
| **USG 3120** | 110 | | 63.0 | + | 115 | - | 32 | | 0 | | 3 | | 0 | |
| VA09W-45 | 109 | | 62.7 | + | 117 | | 31 | | 0 | | 2 | - | 1 | |
| **Pioneer 26R20** | 109 | | 62.5 | | 119 | + | 33 | | 0 | | 5 | | 1 | |
| **USG 3665** | 109 | | 62.2 | | 118 | | 34 | + | 0 | | 5 | + | 1 | |
| VA09W-188WS | 109 | | 61.3 | - | 116 | - | 34 | + | 0 | | 4 | | 1 | |
| **VA05W-251*** | 108 | | 62.3 | | 118 | | 30 | - | 0 | | 0 | - | 0 | |
| Pioneer XW09H | 108 | | 60.2 | - | 119 | + | 33 | | 0 | | 5 | | 1 | |
| **VA05W-139*** | 108 | | 61.8 | | 120 | + | 30 | | 0 | | 5 | | 1 | |
| **SY 9978** | 108 | | 61.9 | | 117 | | 35 | + | 1 | + | 4 | | 1 | |
| **Dyna-Gro 9171** | 108 | | 61.4 | - | 117 | - | 31 | | 0 | | 4 | | 2 | + |
| **USG 3555** | 108 | | 60.8 | - | 117 | - | 28 | - | 0 | | 6 | + | 0 | |
| **USG 3251** | 108 | | 60.4 | - | 119 | + | 32 | | 0 | | 5 | | 1 | |
| VA09W-67 | 107 | | 62.2 | | 119 | | 31 | | 0 | | 1 | - | 1 | |
| VA08W-193 | 107 | | 61.4 | - | 118 | | 30 | | 0 | | 2 | - | 0 | |
| **SS-MPV 57** | 107 | | 61.6 | | 119 | + | 33 | | 0 | | 6 | + | 0 | |
| **USG 3592** | 107 | | 62.9 | + | 119 | + | 35 | + | 1 | + | 1 | - | 1 | |
| **Branson** | 107 | | 62.2 | | 117 | - | 31 | | 0 | | 5 | | 0 | |
| VA09W-75 | 107 | | 62.5 | | 118 | | 31 | | 0 | | 1 | - | 0 | |
| VA08W-92 | 107 | | 64.0 | + | 116 | - | 32 | | 0 | | 1 | - | 1 | |
| VA09W-110 | 106 | | 60.8 | - | 120 | + | 28 | - | 0 | | 1 | - | 1 | |
| **Shirley** | 106 | | 59.7 | - | 119 | | 29 | - | 0 | | 1 | - | 0 | |
| GA 00067-8E35 | 106 | | 62.8 | + | 117 | - | 32 | | 0 | | 1 | - | 1 | |
| VA08W-295 | 106 | | 62.8 | + | 119 | + | 32 | | 0 | | 1 | - | 1 | |
| **SS 5205** | 106 | | 63.3 | + | 117 | | 28 | - | 0 | | 2 | - | 0 | |
| VA09W-46 | 106 | | 62.6 | + | 117 | - | 30 | | 0 | | 2 | - | 2 | + |
| GA 001138-8E36 | 106 | | 60.9 | - | 120 | + | 37 | + | 0 | | 1 | - | 1 | |
| VA10W-119 | 106 | | 62.6 | + | 117 | - | 34 | + | 0 | | 4 | | 1 | |
| **Chesapeake** | 106 | | 62.9 | + | 117 | - | 31 | | 0 | | 7 | + | 0 | |
| VA06W-392 | 106 | | 62.0 | | 118 | | 30 | | 0 | | 1 | - | 1 | |
| **Dyna-Gro 9012** | 106 | | 63.1 | + | 118 | | 31 | | 0 | | 4 | | 2 | + |

**Table 35, continued. Summary of performance of entries in the Virginia Tech Wheat Test planted No-Till at Warsaw, 2011 harvest.**

| Line | Yield (Bu/a) | | Test Weight (Lb/bu) | | Date Headed (Julian) | | Height (In) | | Lodging (0-9) | | Leaf Rust (0-9) | | Powdery Mildew (0-9) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Renwood 3434** | 106 | | 61.0 | - | 119 | + | 28 | - | 0 | | 5 | | 0 | |
| **NC-Yadkin** | 106 | | 61.9 | | 117 | | 31 | | 0 | | 2 | - | 0 | |
| VA07W-429 | 105 | | 60.4 | - | 117 | | 31 | | 0 | | 1 | - | 0 | |
| VA09W-73 | 105 | | 61.3 | - | 120 | + | 32 | | 0 | | 4 | | 1 | |
| **Progeny 357** | 105 | | 59.0 | - | 120 | + | 33 | | 0 | | 4 | | 3 | + |
| **USG 3315** | 105 | | 62.2 | | 118 | | 32 | | 0 | | 5 | | 0 | |
| VA05W-70 | 105 | | 61.6 | | 119 | + | 30 | | 0 | | 1 | - | 0 | |
| **Pioneer 26R22** | 104 | | 60.8 | - | 118 | | 31 | | 0 | | 5 | | 2 | + |
| VA08W-630 | 104 | | 61.8 | | 118 | | 30 | | 0 | | 2 | | 2 | + |
| **Pioneer 26R15** | 104 | | 61.7 | | 118 | | 32 | | 0 | | 4 | | 1 | |
| **Merl** | 104 | | 62.1 | | 118 | | 32 | | 0 | | 6 | + | 0 | |
| Progeny PGX10-2 | 104 | | 62.3 | | 119 | + | 32 | | 0 | | 5 | | 0 | |
| **Pioneer 25R32** | 104 | | 62.3 | | 119 | + | 32 | | 0 | | 7 | + | 0 | |
| VA09W-112 | 104 | | 63.8 | + | 119 | | 32 | | 0 | | 2 | | 0 | |
| VA09W-659 | 104 | | 64.0 | + | 118 | | 32 | | 0 | | 5 | | 2 | + |
| VA08W-632 | 103 | | 62.1 | | 117 | - | 32 | | 0 | | 3 | | 0 | |
| **COKER 9553** | 103 | | 63.9 | + | 117 | - | 31 | | 0 | | 3 | | 1 | |
| **SS 8700** | 103 | | 61.3 | - | 120 | + | 32 | | 0 | | 5 | + | 0 | |
| VA09W-641 | 102 | | 63.7 | + | 114 | - | 32 | | 0 | | 0 | - | 1 | |
| **Jamestown** | 102 | | 64.6 | + | 116 | - | 31 | | 0 | | 3 | | 0 | |
| **Progeny 117** | 102 | | 61.9 | | 117 | - | 34 | + | 0 | | 6 | + | 3 | + |
| **NC-Cape Fear** | 102 | | 63.2 | + | 116 | - | 30 | | 1 | + | 4 | | 0 | |
| VA06W-412 | 101 | | 61.7 | | 119 | + | 30 | | 0 | | 2 | - | 1 | |
| VA09W-623 | 101 | | 63.8 | + | 118 | | 32 | | 1 | + | 4 | | 0 | |
| **SS 8302** | 101 | | 61.8 | | 119 | + | 34 | + | 0 | | 7 | + | 4 | + |
| **Pioneer 26R12** | 101 | | 63.2 | + | 119 | + | 33 | | 0 | | 3 | | 1 | |
| VA08W-176 | 100 | | 62.8 | + | 119 | + | 32 | | 0 | | 2 | - | 0 | |
| **Dyna-Gro V9723** | 99 | | 60.8 | - | 117 | - | 34 | + | 0 | | 7 | + | 2 | |
| **Progeny 185** | 98 | - | 60.7 | - | 118 | | 31 | | 0 | | 6 | + | 3 | + |
| **Progeny 166** | 98 | - | 61.1 | - | 117 | - | 35 | + | 0 | | 4 | | 5 | + |
| NC05-19896 | 98 | - | 62.4 | | 117 | | 30 | | 0 | | 2 | | 1 | |
| **Dominion** | 97 | - | 61.7 | | 119 | + | 28 | - | 0 | | 5 | | 0 | |
| **Dyna-Gro 9922** | 97 | - | 62.0 | | 117 | - | 34 | + | 0 | | 7 | + | 0 | |
| **Pioneer 26R31** | 97 | - | 61.6 | | 118 | | 27 | - | 0 | | 6 | + | 0 | |
| **SS 8404** | 97 | - | 63.9 | + | 119 | + | 29 | - | 0 | | 4 | | 2 | + |
| **SS 8309** | 97 | - | 61.1 | - | 119 | + | 31 | | 0 | | 4 | | 1 | |
| **Progeny 125** | 96 | - | 63.2 | + | 115 | - | 30 | | 0 | | 7 | + | 3 | + |
| **OAKES** | 96 | - | 61.9 | | 119 | + | 31 | | 0 | | 5 | | 1 | |
| **SS 8500** | 96 | - | 61.8 | | 117 | | 33 | | 0 | | 8 | + | 0 | |
| VA09W-656 | 95 | - | 61.9 | | 118 | | 32 | | 0 | | 1 | - | 0 | |
| VA09W-657 | 95 | - | 62.9 | + | 118 | | 32 | | 0 | | 3 | | 0 | |
| **SS 560** | 93 | - | 61.3 | - | 119 | + | 31 | | 0 | | 5 | + | 1 | |
| **Massey** | 80 | - | 60.7 | - | 119 | + | 37 | + | 1 | + | 9 | + | 2 | |

**Table 35, continued. Summary of performance of entries in the Virginia Tech Wheat Test planted No-Till at Warsaw, 2011 harvest.**

| Line | Yield (Bu/a) | Test Weight (Lb/bu) | Date Headed (Julian) | Height (In) | Lodging (0-9) | Leaf Rust (0-9) | Powdery Mildew (0-9) |
|---|---|---|---|---|---|---|---|
| Average | 105 | 62.0 | 118 | 32 | 0 | 4 | 1 |
| LSD (O.05) | 7 | 0.6 | 1 | 2 | 0 | 1 | 1 |
| C.V. | 5 | 0.7 | 0 | 4 | --- | --- | --- |

Released cultivars are shown in bold print. * Released line yet to be named.

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.

WS in the line designation indicates a white-seeded line; MAS in the line designation indicates a line derived using marker-assisted selection.

# Section 4: Milling and Baking Quality

Milling and baking quality of 40 wheat lines grown in the 2009-2010 Virginia State Wheat Test were assessed by the USDA-ARS Soft Wheat Quality Laboratory (SWQL) in Wooster, Ohio (Table 36). Quality evaluations were conducted using 500 gram grain samples from wheat lines grown at the Blacksburg, 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 37) and three years (Table 38) 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 line's 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 2010 crop, the standard quality data was compared to the average "historical data" from Advanced Milling databases for 12 check cultivars (see table below), and quality scores (Tables 36 – 38) for all entries were adjusted to this average.

| Virginia Statewide Wheat Trial | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | From Advanced Milling Database Scoring | | | | | | Predicted from Measured Data | | | | | |
| ENTRY | Milling Quality Score | | Baking Quality Score | | Softness Equivalent Score | | Milling Quality Score | | Baking Quality Score | | Softness Equivalent Score | |
| Massey | 74.7 | B | 45.6 | E | 68.5 | C | 74.5 | B | 39.4 | F | 57.8 | D |
| Jamestown | 60.1 | C | 31.3 | F | 62.2 | C | 63.1 | C | 25.6 | F | 59.7 | D |
| SS 5205 | 68.1 | C | 73.5 | B | 78.8 | B | 68.8 | C | 62.8 | C | 65.4 | C |
| Pioneer 26R15 | 69.8 | C | 52.0 | D | 76.1 | B | 69.2 | C | 57.1 | D | 61.5 | C |
| SS-MPV 57 | 72.9 | B | 47.4 | E | 58.3 | D | 71.4 | B | 44.9 | E | 42.2 | E |
| Chesapeake | 62.1 | C | 46.0 | E | 63.6 | C | 62.8 | C | 43.5 | E | 46.3 | E |
| USG 3555 | 62.7 | C | 37.2 | F | 58.2 | D | 58.7 | D | 26.8 | F | 46.5 | E |
| Shirley | 67.4 | C | 66.7 | C | 67.5 | C | 69.9 | C | 51.2 | D | 49.9 | E |
| Renwood 3434 | 62.8 | C | 65.6 | C | 69.5 | C | 61.1 | C | 66.0 | C | 61.3 | C |
| USG 3665 | 72.6 | B | 52.9 | D | 70.9 | B | 70.6 | B | 65.9 | C | 57.5 | D |
| COKER 9553 | 61.5 | C | 43.2 | E | 65.6 | C | 59.2 | D | 47.2 | E | 51.5 | D |
| Branson | 66.9 | C | 64.6 | C | 76.6 | B | 66.1 | C | 61.4 | C | 65.8 | C |
| **Average** | 66.8 | | 52.2 | | 68.0 | | 66.3 | | 49.3 | | 55.4 | |
| **Adjustment Bias for Trial** | 0.5 | | 2.9 | | 12.5 | | | | | | | |

Milling yield is the first criteria for selection of cultivars. The average flour yield of the 12 check cultivars above was 70.1%. Eleven cultivars (Massey, Merl, SS 520, SS-MPV57, USG 3665, Progeny 185, Progeny 117, USG 3120, Dyna-Gro V9723, and Pioneer Brands 25R32 and 26R22 had flour yields (71.1 – 72.8%) that were significantly higher than average. Lines in Table 36 having more than 2 standard errors (~2% points) below the average are likely significantly below average for milling yield. The next most heritable trait in the quality evaluations is softness equivalent. Several of the 12 check cultivars (SS-MPV 57, Chesapeake,

USG 3555, and Shirley) had softness equivalents that were significantly higher than average. They normally would be above 50% but are much harder due to the hot and very dry environmental conditions of 2010. Seven cultivars (USG 3315, SS 5205, Renwood 3434, Branson, Dyna-Gro 9922, and Pioneer Brands 26R15 and 26R22 had softness equivalent values (56.7 – 58.6%) that were significantly higher than average. Lactic acid SRC is a good measure of protein gluten strength. Lines having lower Lactic acid SRC scores would produce a dough having weak gluten strength and more suitable for pastry products such as cookies, while lines having higher scores would produce a dough having stronger gluten strength and more suitable for crackers or certain bread products. Nine cultivars (SS-MPV 57, SS 560, Chesapeake, Shirley, Dyna-Gro 9922, USG 3120, Oakes, and Pioneer Brands 26R31 and 26R22 had weak gluten strength based on lower lactic acid SRC values (88.7 – 103.8%). Nine other cultivars (Jamestown, Featherstone VA 258, Pioneer Brand 26R15, SS 520, USG 3555, Branson, Progeny 185, Progeny 117, and NC-Yadkin had strong gluten strength based on higher lactic acid SRC values (120.1 – 135.5%). Six cultivars (SS 5205, Renwood 3434, USG 3665, Branson, Dyna-Gro V9723, and Pioneer Brand 26R22) produced cookies whose diameters (18.9 – 19.2 cm) were significantly larger than average. Many of the traits evaluated in this analysis are correlated to each other and the best quality cultivars will have favorable combinations of milling yield, softness equivalent, cookie diameter, and sucrose SRC values. Two (Table 37) and three (Table 38) year data summaries are also included for this trial. Progeny 185 appears to have above average quality in both the one and two year summaries. VA05W-151 and Progeny 117 have strong gluten in the two year summary as well as the current year.

**Table 36. Milling and baking quality of entries in the Virginia Tech Wheat Test based on evaluation of the 2010 harvest.**

| ENTRY | Modified Milling Quality Score | | Modified Baking Quality Score | | Modified Softness Equival-ent Score | | Test Weight (LB/BU) | | Whole Grain Protein (%) | | Whole Grain Hardness (0-100) | | Flour Yield (%) | | Softness Equiva-lent (%) | | Flour Protein (%) | | As Is Lactic Acid SRC (%) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Branson | 66.6 | C | 69.1 | C | 74.8 | B | 62.4 | | 11.4 | | 29.1 | | 70.1 | | 58.6 | + | 8.8 | | 120.1 | s |
| Chesapeake | 63.3 | C | 52.0 | D | 58.9 | D | 64.4 | | 11.3 | | 36.6 | | 69.3 | | 51.0 | q | 8.7 | | 96.1 | w |
| COKER 9553 | 59.7 | D | 49.7 | E | 63.1 | C | 64.5 | | 12.4 | | 39.0 | | 68.5 | q | 53.0 | | 9.7 | q | 114.0 | |
| Dyna-Gro 9922 | 58.8 | D | 63.3 | C | 70.8 | B | 62.6 | | 10.8 | | 36.5 | | 68.3 | q | 56.7 | + | 8.6 | | 101.7 | w |
| Dyna-Gro V9723 | 74.5 | B | 75.9 | B | 68.0 | C | 62.6 | | 10.6 | | 22.5 | | 71.9 | + | 55.3 | | 8.0 | + | 109.5 | |
| Featherstone VA 258 | 62.5 | C | 28.8 | F | 63.0 | C | 62.8 | | 11.3 | | 33.7 | | 69.2 | | 53.0 | | 9.2 | | 126.4 | s |
| Jamestow n | 63.6 | C | 35.8 | F | 69.8 | C | 64.2 | | 12.1 | | 33.9 | | 69.4 | | 56.2 | | 9.1 | | 120.5 | s |
| Massey | 72.3 | B | 52.8 | D | 68.2 | C | 62.4 | | 11.0 | | 34.5 | | 71.4 | + | 55.4 | | 8.7 | | 116.9 | |
| Merl | 71.3 | B | 56.9 | D | 69.3 | C | 63.8 | | 11.3 | | 41.5 | | 71.2 | + | 55.9 | | 9.2 | | 105.0 | |
| NC-Yadkin | 62.3 | C | 54.6 | D | 59.8 | D | 61.6 | | 12.1 | | 34.9 | | 69.1 | q | 51.4 | q | 9.5 | q | 122.4 | s |
| Oakes | 69.5 | C | 60.0 | C | 58.4 | D | 64.2 | | 11.7 | | 35.4 | | 70.8 | | 50.7 | q | 9.0 | | 102.8 | w |
| Pioneer 25R32 | 73.8 | B | 16.7 | F | 31.2 | F | 62.5 | | 11.3 | | 39.3 | | 71.7 | + | 37.7 | q | 9.3 | | 113.5 | |
| Pioneer 26R15 | 69.8 | C | 63.3 | C | 71.3 | B | 62.6 | | 11.9 | | 35.9 | | 70.8 | | 56.9 | + | 9.5 | q | 135.5 | s |
| Pioneer 26R20 | 65.4 | C | 63.6 | C | 67.1 | C | 63.4 | | 10.6 | | 33.3 | | 69.8 | | 54.9 | | 8.2 | + | 109.3 | |
| Pioneer 26R22 | 78.3 | B | 79.8 | B | 72.3 | B | 61.9 | | 11.0 | | 23.7 | | 72.8 | + | 57.4 | + | 8.4 | + | 101.7 | w |
| Pioneer 26R31 | 68.1 | C | 32.8 | F | 51.7 | D | 62.2 | | 11.4 | | 35.8 | | 70.4 | | 47.5 | q | 9.0 | | 103.8 | w |
| Progeny 117 | 73.2 | B | 57.2 | D | 68.7 | C | 62.5 | | 11.0 | | 24.9 | | 71.6 | + | 55.7 | | 9.0 | | 130.5 | s |
| Progeny 185 | 76.0 | B | 71.2 | B | 67.5 | C | 62.6 | | 10.8 | | 24.8 | | 72.3 | + | 55.1 | | 8.7 | | 121.2 | s |
| Renw ood 3434 | 61.6 | C | 73.9 | B | 71.1 | B | 61.6 | | 11.5 | | 26.9 | | 69.0 | q | 56.8 | + | 8.7 | | 112.8 | |
| Shirley | 70.4 | B | 69.0 | C | 61.8 | C | 61.6 | | 11.0 | | 30.8 | | 71.0 | | 52.4 | q | 8.4 | + | 88.7 | w |
| SS 520 | 73.0 | B | 58.9 | D | 62.9 | C | 62.3 | | 10.8 | | 26.1 | | 71.6 | + | 52.9 | | 8.7 | | 121.4 | s |
| SS 5205 | 69.4 | C | 77.5 | B | 74.5 | B | 64.1 | | 11.1 | | 25.8 | | 70.7 | | 58.4 | + | 8.5 | + | 109.4 | |
| SS 560 | 61.9 | C | 51.2 | D | 65.8 | C | 61.7 | | 11.4 | | 32.9 | | 69.0 | q | 54.3 | | 8.9 | | 101.3 | w |
| SS-MPV 57 | 71.9 | B | 53.4 | D | 55.6 | D | 63.3 | | 12.0 | | 39.0 | | 71.3 | + | 49.4 | q | 9.7 | q | 94.8 | w |
| USG 3120 | 72.8 | B | 61.4 | C | 59.3 | D | 64.7 | | 11.1 | | 36.6 | | 71.5 | + | 51.2 | q | 8.8 | | 99.0 | w |
| USG 3555 | 59.2 | D | 32.3 | F | 59.0 | D | 62.4 | | 11.9 | | 33.8 | | 68.4 | q | 51.0 | q | 9.4 | | 125.5 | s |
| USG 3665 | 71.2 | B | 73.6 | B | 68.0 | C | 63.1 | | 11.4 | | 35.6 | | 71.1 | + | 55.3 | | 9.0 | | 104.3 | |
| USG 3315 | 64.4 | C | 54.7 | D | 73.6 | B | 63.3 | | 11.6 | | 33.9 | | 69.6 | | 58.0 | + | 9.0 | | 117.5 | |

**Table 36, continued. Milling and baking quality of entries in the Virginia Tech Wheat Test based on evaluation of the 2010 harvest.**

| ENTRY | Modified Milling Quality Score | | Modified Baking Quality Score | | Modified Softness Equival-ent Score | | Test Weight (LB/BU) | | Whole Grain Protein (%) | | Whole Grain Hardness (0-100) | | Flour Yield (%) | | Softness Equiva-lent (%) | | Flour Protein (%) | | As Is Lactic Acid SRC (%) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Experimental Lines** | | | | | | | | | | | | | | | | | | | | |
| VA05W-139 | 64.1 | C | 41.1 | E | 63.3 | C | 63.3 | | 11.5 | | 32.8 | | 69.5 | | 53.1 | | 9.2 | | 142.7 | s |
| VA05W-151 | 68.3 | C | 36.9 | F | 57.1 | D | 65.3 | | 12.2 | | 40.9 | | 70.5 | | 50.1 | q | 9.8 | q | 129.4 | s |
| VA05W-251 | 70.0 | B | 64.0 | C | 59.7 | D | 63.4 | | 11.0 | | 29.3 | | 70.9 | | 51.3 | q | 8.8 | | 96.2 | w |
| VA05W-70 | 70.6 | B | 58.8 | D | 60.2 | C | 64.4 | | 12.0 | | 39.8 | | 71.0 | | 51.6 | q | 9.2 | | 128.7 | s |
| VA06W-392 | 63.6 | C | 57.2 | D | 59.4 | D | 63.0 | | 12.0 | | 31.8 | | 69.4 | | 51.2 | q | 9.5 | | 105.8 | |
| VA06W-412 | 67.1 | C | 61.7 | C | 67.6 | C | 64.5 | | 11.6 | | 41.3 | | 70.2 | | 55.2 | | 9.2 | | 123.7 | s |
| VA07W-415 | 71.5 | B | 51.7 | D | 59.6 | D | 62.9 | | 11.6 | | 33.9 | | 71.2 | + | 51.3 | q | 9.2 | | 117.3 | |
| VA08W-176 | 65.7 | C | 62.3 | C | 62.5 | C | 65.0 | | 12.0 | | 38.6 | | 69.9 | | 52.7 | | 9.2 | | 99.0 | w |
| VA08W-193 | 74.5 | B | 60.2 | C | 66.0 | C | 62.8 | | 11.6 | | 33.8 | | 71.9 | + | 54.4 | | 9.2 | | 124.7 | s |
| VA08W-294 | 62.1 | C | 43.4 | E | 58.1 | D | 64.2 | | 11.2 | | 32.6 | | 69.1 | q | 50.6 | q | 8.4 | + | 106.6 | |
| VA08W-295 | 66.0 | C | 56.4 | D | 67.8 | C | 64.1 | | 11.4 | | 24.6 | | 70.0 | | 55.2 | | 8.5 | + | 112.4 | |
| VA08W-92 | 59.0 | D | 31.5 | F | 55.5 | D | 65.3 | | 12.1 | | 43.5 | | 68.4 | q | 49.4 | q | 9.2 | | 136.9 | s |
| **Average** | 67.7 | C | 55.4 | D | 63.6 | C | 63.2 | | 11.5 | | 33.5 | | 70.3 | | 53.2 | | 9.0 | | 113.7 | |

Footnotes

'q' - questionable or undesirable quality. Marked on lines greater than a standard deviation from the mean of the checks in a unpreferred level.

'+' - Above average quality marked on lines with greater than a standard deviation away from mean of the checks in a preferred level

's' - strong gluten. Greater than one standard deviation more than the mean of checks.

'w' - weak gluten. Greater than one standard deviation less than the mean of the check.

**Table 37. Two year milling and baking quality of entries in the Virginia Tech Wheat Test b on evaluation of the 2009 and 2010 harvests.**

| ENTRY | MILLING QUALITY SCORE | | BAKING QUALITY SCORE | | SOFT. EQUIV. SCORE | | MICRO T.W. LB/BU | FLOUR YIELD % | SOFT. EQUIV. % | FLOUR PROT. % | LACTIC ACID RET'N | COOKIE DIAM. CM. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Branson | 67.9 | C | 79.5 | B | 76.2 | B | 61.8 | 70.1 | 60.7 | 8.1 | 125.7 | 20.20 |
| Chesapeake | 61.6 | C | 49.8 | E | 61.4 | C | 62.8 | 68.6 | 53.6 | 8.0 | 103.3 | 18.65 |
| COKER 9553 | 59.3 | D | 48.1 | E | 64.0 | C | 62.8 | 68.1 | 54.9 | 8.8 | 118.4 | 18.75 |
| Dyna-Gro 9922 | 60.8 | C | 70.8 | B | 73.2 | B | 61.9 | 68.4 | 59.2 | 7.4 | 111.8 | 18.95 |
| Dyna-Gro V9723 | 73.7 | B | 76.9 | B | 69.5 | C | 61.9 | 71.4 | 57.5 | 7.3 | 115.7 | 19.30 |
| Featherstone VA 258 | 61.9 | C | 32.0 | E | 64.0 | C | 61.6 | 68.7 | 54.9 | 8.2 | 127.5 | 18.05 |
| Jamestown | 63.7 | C | 42.9 | E | 67.8 | C | 63.9 | 69.1 | 56.7 | 8.2 | 125.0 | 18.00 |
| Massey | 73.4 | B | 57.6 | D | 70.1 | B | 61.7 | 71.3 | 57.8 | 8.1 | 117.7 | 18.75 |
| Merl | 71.0 | B | 57.4 | D | 65.4 | C | 63.3 | 70.8 | 55.5 | 8.3 | 108.4 | 18.65 |
| NC-Yadkin | 63.7 | C | 57.3 | D | 59.0 | D | 61.4 | 69.1 | 52.5 | 8.5 | 124.2 | 18.70 |
| Oakes | 69.9 | C | 71.8 | B | 62.5 | C | 62.7 | 70.5 | 54.1 | 7.3 | 111.5 | 18.85 |
| Pioneer 26R15 | 70.8 | B | 64.7 | C | 74.2 | B | 61.9 | 70.7 | 59.8 | 8.6 | 135.0 | 19.05 |
| Pioneer 26R31 | 69.4 | C | 42.3 | E | 53.0 | D | 61.7 | 70.4 | 49.6 | 8.0 | 109.8 | 18.30 |
| Progeny 117 | 72.7 | B | 63.3 | C | 67.8 | C | 61.8 | 71.1 | 56.7 | 8.0 | 128.6 | 18.95 |
| Progeny 185 | 76.2 | B | 74.9 | B | 69.5 | C | 61.9 | 72.0 | 57.5 | 7.7 | 118.4 | 19.25 |
| Renwood 3434 | 63.0 | C | 74.5 | B | 70.9 | B | 61.4 | 68.9 | 58.2 | 7.8 | 114.0 | 19.35 |
| Shirley | 70.0 | C | 72.9 | B | 64.4 | C | 61.4 | 70.5 | 55.1 | 7.5 | 95.5 | 19.35 |
| SS 520 | 69.9 | C | 57.4 | D | 58.6 | D | 61.7 | 70.5 | 52.3 | 8.0 | 118.0 | 18.60 |
| SS 5205 | 69.9 | C | 78.1 | B | 75.7 | B | 62.6 | 70.5 | 60.4 | 7.9 | 120.8 | 19.20 |
| SS 560 | 64.6 | C | 52.4 | D | 68.2 | C | 61.4 | 69.3 | 56.9 | 8.0 | 111.0 | 18.95 |
| SS-MPV 57 | 72.3 | B | 57.0 | D | 59.0 | D | 62.2 | 71.0 | 52.5 | 8.5 | 97.1 | 18.95 |
| USG 3120 | 72.8 | B | 58.9 | D | 57.8 | D | 62.9 | 71.2 | 51.9 | 8.0 | 101.9 | 18.65 |
| USG 3315 | 65.0 | C | 51.5 | D | 71.7 | B | 63.2 | 69.4 | 58.5 | 8.1 | 120.6 | 18.30 |
| USG 3555 | 62.3 | C | 41.1 | E | 59.8 | D | 61.8 | 68.8 | 52.8 | 8.5 | 122.2 | 18.55 |
| USG 3665 | 71.0 | B | 73.0 | B | 67.2 | C | 62.1 | 70.7 | 56.4 | 8.0 | 109.6 | 19.30 |
| **Experimental Lines** | | | | | | | | | | | | |
| VA05W-139 | 61.5 | C | 35.4 | E | 61.6 | C | 62.5 | 68.6 | 53.7 | 8.3 | 144.4 | 18.05 |
| VA05W-151 | 67.2 | C | 45.8 | E | 61.6 | C | 64.4 | 69.9 | 53.7 | 8.5 | 132.5 | 18.50 |
| VA05W-251 | 66.0 | C | 58.5 | D | 57.5 | D | 62.4 | 69.6 | 51.7 | 7.9 | 100.1 | 18.70 |
| VA06W-392 | 63.9 | C | 66.5 | C | 63.3 | C | 61.9 | 69.1 | 54.5 | 8.2 | 107.5 | 19.00 |
| VA06W-412 | 65.4 | C | 61.5 | C | 68.6 | C | 63.6 | 69.5 | 57.1 | 8.2 | 124.7 | 18.90 |
| VA07W-415 | 71.6 | B | 56.9 | D | 61.5 | C | 62.3 | 70.9 | 53.7 | 8.1 | 119.8 | 18.70 |
| | | | | | | | | | | | | |
| **Average** | 67.5 | | 59.0 | | 65.3 | | 62.3 | 69.9 | 55.5 | 8.0 | 116.8 | 18.8 |
| **lsd 95%** | 3.1 | | 9.3 | | 4.4 | | 0.9 | 0.7 | 2.1 | 0.4 | 7.5 | 0.6 |
| **F-test for cultivar** | 8.7 | | 7.5 | | 6.7 | | 3.0 | 8.6 | 6.7 | 2.6 | 8.7 | 2.5 |

**Table 38. Three year milling and baking quality of entries in the Virginia Tech Wheat Test on evaluation of the 2008, 2009, and 2010 harvests.**

| ENTRY | MILLING QUALITY SCORE | | BAKING QUALITY SCORE | | SOFT. EQUIV. SCORE | | MICRO T.W. LB/BU | FLOUR YIELD % | SOFT. EQUIV. % | FLOUR PROT. % | LACTIC ACID RET'N | COOKIE DIAM. CM. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Branson | 68.4 | C | 67.7 | C | 74.5 | C | 61.2 | 70.7 | 61.1 | 8.2 | 124.2 | 19.73 |
| Chesapeake | 61.2 | C | 44.8 | E | 60.5 | C | 62.5 | 69.0 | 54.4 | 8.1 | 102.8 | 18.60 |
| COKER 9553 | 59.8 | D | 44.2 | E | 64.1 | C | 62.5 | 68.7 | 56.1 | 8.7 | 119.5 | 18.67 |
| Featherstone VA 258 | 62.5 | C | 29.8 | F | 62.4 | C | 61.3 | 69.3 | 55.3 | 8.2 | 123.6 | 18.07 |
| Jamestown | 62.6 | C | 39.2 | E | 65.2 | C | 63.4 | 69.3 | 56.6 | 8.3 | 123.1 | 18.03 |
| Pioneer 26R15 | 70.7 | B | 62.7 | C | 72.8 | C | 61.3 | 71.2 | 60.3 | 8.5 | 131.1 | 19.13 |
| Pioneer 26R31 | 70.8 | B | 38.9 | E | 54.0 | D | 61.3 | 71.2 | 51.2 | 8.1 | 108.8 | 18.27 |
| Renwood 3434 | 63.8 | C | 69.5 | C | 68.6 | C | 61.4 | 69.6 | 58.2 | 7.9 | 110.3 | 19.30 |
| Shirley | 69.0 | C | 67.6 | C | 64.1 | C | 61.2 | 70.8 | 56.1 | 7.7 | 93.3 | 19.27 |
| SS 520 | 69.8 | C | 53.6 | D | 58.4 | D | 61.4 | 71.0 | 53.4 | 8.1 | 117.1 | 18.63 |
| SS 5205 | 69.7 | C | 74.9 | B | 73.3 | C | 62.4 | 71.0 | 60.4 | 8.0 | 119.7 | 19.43 |
| SS 560 | 63.9 | C | 48.2 | E | 66.2 | C | 60.9 | 69.6 | 57.1 | 8.1 | 109.2 | 18.83 |
| SS-MPV 57 | 72.3 | B | 55.3 | D | 58.5 | D | 61.5 | 71.6 | 53.4 | 8.5 | 95.7 | 19.00 |
| USG 3315 | 64.5 | C | 48.6 | E | 69.7 | C | 62.8 | 69.8 | 58.7 | 8.1 | 119.1 | 18.40 |
| USG 3555 | 62.2 | C | 39.8 | E | 59.3 | D | 61.4 | 69.3 | 53.8 | 8.5 | 118.3 | 18.47 |
| USG 3665 | 71.4 | B | 68.4 | C | 67.6 | C | 61.6 | 71.3 | 57.8 | 8.1 | 108.8 | 19.23 |
| **Experimental Lines** | | | | | | | | | | | | |
| VA05W-139 | 61.7 | C | 31.4 | E | 59.2 | D | 62.3 | 69.1 | 53.7 | 8.4 | 139.0 | 18.03 |
| VA05W-151 | 67.1 | C | 43.0 | E | 60.8 | C | 63.8 | 70.4 | 54.5 | 8.5 | 128.5 | 18.40 |
| VA05W-251 | 66.7 | C | 56.1 | D | 57.3 | D | 61.9 | 70.3 | 52.8 | 8.0 | 99.0 | 18.83 |
| VA06W-392 | 65.2 | C | 65.7 | C | 64.0 | C | 61.9 | 69.9 | 56.0 | 8.1 | 105.7 | 19.10 |
| **Average** | **66.2** | | **52.5** | | **64.0** | | **61.9** | **70.2** | **56.0** | **8.2** | **114.8** | **18.8** |
| **lsd 95%** | **2.4** | | **7.3** | | **3.4** | | **0.6** | **0.6** | **1.6** | **0.2** | **5.3** | **0.5** |
| **F-test for cultivar** | **10.0** | | **13.3** | | **10.8** | | **5.7** | **9.8** | **10.8** | **4.0** | **20.2** | **4.47** |

# 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 39 – 41) 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 low FHB infection level was obtained in 2011. Among 87 lines and varieties tested in 2011, the FHB index varied from 0 to 16 with FHB incidence ranging from 20% to 75% and FHB severity ranging from 2% to 22% (Table 39). Twenty lines and 30 varieties had FHB index values lower than the mean (<5) and expressed moderate resistant to FHB in 2011. Based on two year mean data for 2010 and 2011 (Table 40), four lines and 30 varieties had FHB index values lower than the test mean (<6). Twenty varieties tested across three years (2009-2011) had average FHB index values lower than the test mean of 8 (Table 41). Varieties expressing resistance to FHB based on three-year mean data are: Pioneer 25R32, COKER 9553, Dyna-Gro V9723, USG 3665, SS 8309, Jamestown, Dominion, SS 520, SS 560, Progeny 166, Oakes, Branson, USG 3315, NC-Cape Fear, VA05W-251, Massey, SS 8302, Progeny 117, SS 8404, and Dyna-Gro 9922.

**Table 39. Summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab), 2011 harvest.**

| LINE | Heading date (Julian) | | FHB Incidence[1] (%) | FHB Severity[2] (%) | FHB Index[3] (0-100) | Rank FHB Index |
|---|---|---|---|---|---|---|
| VA09W-659 | 135 | + | 20 | 2 | 0 | 1 |
| Progeny PGX10-2 | 135 | + | 30 | 4 | 1 | 2 |
| Pioneer XW09H | 134 | | 30 | 4 | 1 | 3 |
| **Branson** | 133 | - | 30 | 4 | 1 | 4 |
| **NC-Cape Fear** | 133 | - | 30 | 4 | 1 | 5 |
| **COKER 9553** | 133 | - | 25 | 4 | 1 | 6 |
| VA08W-630 | 134 | | 25 | 3 | 1 | 7 |
| **USG 3201** | 133 | - | 25 | 3 | 1 | 8 |
| VA09W-46 | 134 | | 20 | 3 | 1 | 9 |
| VA09W-656 | 134 | | 20 | 3 | 1 | 10 |
| VA09W-75 | 133 | - | 20 | 3 | 1 | 11 |
| **SS 520** | 133 | - | 20 | 3 | 1 | 12 |
| **Pioneer 25R32** | 135 | + | 20 | 2 | 1 | 13 |
| VA08W-92 | 133 | - | 30 | 7 | 2 | 14 |
| VA08W-295 | 133 | - | 30 | 6 | 2 | 15 |
| **Dyna-Gro 9012** | 133 | - | 30 | 6 | 2 | 16 |
| **Progeny 125** | 133 | - | 30 | 6 | 2 | 17 |
| VA09W-67 | 133 | - | 40 | 5 | 2 | 18 |
| VA09W-188WS | 133 | - | 40 | 5 | 2 | 19 |
| NC05-19896 | 133 | - | 40 | 5 | 2 | 20 |
| **Pioneer 26R20** | 135 | + | 35 | 5 | 2 | 21 |
| **USG 3251** | 134 | | 35 | 5 | 2 | 22 |
| GA 00067-8E35 | 134 | | 35 | 5 | 2 | 23 |
| **Jamestown** | 133 | - | 35 | 5 | 2 | 24 |
| VA08W-632 | 133 | - | 35 | 5 | 2 | 25 |
| VA09W-641 | 133 | - | 35 | 5 | 2 | 26 |
| **Pioneer 26R12** | 134 | | 30 | 5 | 2 | 27 |
| **USG 3665** | 133 | - | 30 | 5 | 2 | 28 |
| **W1566** | 134 | | 30 | 4 | 2 | 29 |
| VA07W-429 | 134 | | 40 | 7 | 3 | 30 |
| **SS-MPV 57** | 134 | | 40 | 7 | 3 | 31 |
| **Shirley** | 134 | | 40 | 7 | 3 | 32 |
| **Progeny 870** | 133 | - | 40 | 7 | 3 | 33 |
| **Oakes** | 135 | + | 40 | 6 | 3 | 34 |
| **Chesapeake** | 133 | - | 40 | 6 | 3 | 35 |
| **Dyna-Gro V9723** | 134 | | 35 | 6 | 3 | 36 |
| **VA05W-251*** | 134 | | 45 | 5 | 3 | 37 |
| **SS 8700** | 135 | + | 35 | 5 | 3 | 38 |
| VA08W-176 | 134 | | 45 | 9 | 4 | 39 |
| VA07W-415 | 134 | | 40 | 9 | 4 | 40 |
| **Dyna-Gro 9171** | 133 | - | 40 | 9 | 4 | 41 |
| VA09W-657 | 134 | | 45 | 8 | 4 | 42 |
| **VA05W-151*** | 133 | - | 45 | 8 | 4 | 43 |
| **SS 560** | 135 | + | 40 | 8 | 4 | 44 |
| VA08MAS-369 | 134 | | 40 | 8 | 4 | 45 |

**Table 39, continued. Summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab), 2011 harvest.**

| LINE | Heading date (Julian) | | FHB Incidence[1] (%) | | FHB Severity[2] (%) | | FHB Index[3] (0-100) | | Rank FHB Index |
|---|---|---|---|---|---|---|---|---|---|
| **Pioneer 26R15** | 134 | | 40 | | 8 | | 4 | | 46 |
| **USG 3438** | 133 | - | 35 | | 8 | | 4 | | 47 |
| **USG 3315** | 134 | | 55 | | 7 | | 4 | | 48 |
| **Dyna-Gro 9922** | 133 | - | 50 | | 7 | | 4 | | 49 |
| **USG 3770** | 133 | - | 40 | | 7 | | 4 | | 50 |
| **Progeny 117** | 133 | - | 40 | | 11 | | 5 | | 51 |
| VA09W-73 | 135 | + | 45 | | 10 | | 5 | | 52 |
| VA08MAS-412 | 134 | | 45 | | 10 | | 5 | | 53 |
| VA09W-45 | 133 | - | 45 | | 10 | | 5 | | 54 |
| **SS 8340** | 133 | - | 45 | | 10 | | 5 | | 55 |
| **Progeny 166** | 133 | - | 40 | | 10 | | 5 | | 56 |
| **Pioneer 26R22** | 134 | | 50 | | 9 | | 5 | | 57 |
| **Dominion** | 133 | - | 40 | | 9 | | 5 | | 58 |
| **SS 8309** | 134 | | 45 | | 12 | | 6 | | 59 |
| **USG 3592** | 135 | + | 55 | | 11 | | 6 | | 60 |
| **SS 8404** | 134 | | 55 | | 11 | | 6 | | 61 |
| VA10W-119 | 133 | - | 50 | | 11 | | 6 | | 62 |
| VA09W-52 | 133 | - | 40 | | 13 | | 7 | | 63 |
| **Progeny 185** | 133 | - | 50 | | 12 | | 7 | | 64 |
| VA06W-392 | 134 | | 50 | | 15 | | 8 | | 65 |
| **Progeny 357** | 133 | - | 55 | | 12 | | 8 | | 66 |
| VA08W-294 | 134 | | 65 | | 11 | | 8 | | 67 |
| **Massey** | 135 | + | 50 | | 18 | | 9 | | 68 |
| VA05W-70 | 134 | | 65 | | 14 | | 9 | | 69 |
| **NC-Yadkin** | 133 | - | 60 | | 14 | | 9 | | 70 |
| **SS 8302** | 133 | - | 50 | | 14 | | 9 | | 71 |
| VA09W-623 | 134 | | 55 | | 13 | | 9 | | 72 |
| VA08W-193 | 134 | | 60 | | 15 | | 10 | | 73 |
| **SS 8500** | 133 | - | 55 | | 14 | | 10 | | 74 |
| **Renwood 3434** | 134 | | 65 | | 16 | | 11 | | 75 |
| VA09W-112 | 135 | + | 65 | | 20 | | 13 | | 76 |
| GA 001138-8E36 | 135 | + | 65 | | 20 | | 13 | | 77 |
| **SS 5205** | 133 | - | 65 | | 20 | | 13 | | 78 |
| **SY 9978** | 135 | + | 60 | | 19 | | 13 | | 79 |
| VA09W-110 | 135 | + | 65 | | 17 | | 13 | | 80 |
| **Pioneer 26R31** | 133 | - | 75 | | 18 | | 14 | | 81 |
| **USG 3120** | 133 | - | 75 | | 18 | | 14 | | 82 |
| **VA05W-139*** | 133 | - | 70 | | 18 | | 14 | | 83 |
| **USG 3555** | 133 | - | 60 | | 21 | | 15 | | 84 |
| VA06W-412 | 135 | + | 65 | | 22 | + | 16 | + | 85 |
| **Merl** | 134 | | 75 | | 21 | | 16 | + | 86 |
| **Featherstone VA-258** | 134 | | 65 | | 20 | | 16 | + | 87 |

**Table 39, continued. Summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab), 2011 harvest.**

| LINE | Heading date (Julian) | FHB Incidence[1] (%) | FHB Severity[2] (%) | FHB Index[3] (0-100) | Rank FHB Index |
|---|---|---|---|---|---|
| Average | 134 | 44 | 9 | 5 | |
| LSD (O.05) | 1 | 32 | 13 | 11 | |
| C.V. | 0 | --- | --- | --- | |

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

* Released line yet to be named.

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. Two year average summary of reaction of entries in the Virginia Tech State Wheat Tests to Fusarium head blight (scab), 2010 and 2011 harvests.**

| LINE | Heading date (Julian) | | FHB Incidence[1] (%) | | FHB Severity[2] (%) | | FHB Index[3] (0-100) | | Rank FHB Index | Don Value 2010[4] | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pioneer 25R32** | 131 | + | 14 | - | 6 | | 1 | | 1 | 0.20 | |
| **SS 520** | 128 | - | 15 | | 8 | | 1 | | 2 | 0.15 | |
| **USG 3251** | 131 | + | 24 | | 6 | | 1 | | 3 | 0.30 | |
| VA08W-92 | 128 | - | 19 | | 8 | | 1 | | 4 | 0.10 | |
| **USG 3201** | 129 | | 19 | | 11 | | 2 | | 5 | 1.03 | |
| **SS 8700** | 131 | + | 23 | | 9 | | 2 | | 6 | 0.14 | |
| **Branson** | 129 | | 20 | | 17 | | 2 | | 7 | 0.76 | |
| NC05-19896 | 129 | | 28 | | 9 | | 2 | | 8 | 0.75 | |
| **VA05W-251*** | 129 | | 30 | | 8 | | 2 | | 9 | 0.65 | |
| **USG 3770** | 128 | - | 24 | | 7 | | 2 | | 10 | 0.00 | |
| **COKER 9553** | 128 | - | 23 | | 12 | | 3 | | 11 | 0.41 | |
| **SS-MPV 57** | 130 | + | 26 | | 12 | | 3 | | 12 | 0.28 | |
| **W1566** | 130 | + | 21 | | 15 | | 3 | | 13 | 0.26 | |
| VA08W-176 | 130 | + | 30 | | 10 | | 3 | | 14 | 0.95 | |
| VA08W-295 | 129 | | 23 | | 13 | | 3 | | 15 | 0.70 | |
| **Dominion** | 130 | + | 26 | | 11 | | 3 | | 16 | 0.24 | |
| **NC-Cape Fear** | 128 | - | 25 | | 12 | | 3 | | 17 | 0.77 | |
| **Pioneer 26R20** | 130 | + | 30 | | 10 | | 3 | | 18 | 0.12 | |
| **Progeny 117** | 128 | - | 28 | | 12 | | 3 | | 19 | 0.70 | |
| **USG 3665** | 129 | | 24 | | 16 | | 3 | | 20 | 0.51 | |
| **Dyna-Gro V9723** | 129 | | 30 | | 12 | | 3 | | 21 | 0.46 | |
| **Jamestown** | 128 | - | 29 | | 14 | | 3 | | 22 | 0.31 | |
| **Shirley** | 130 | + | 30 | | 16 | | 4 | | 23 | 0.43 | |
| **USG 3315** | 130 | + | 40 | | 10 | | 4 | | 24 | 0.10 | |
| **SS 8309** | 130 | + | 29 | | 12 | | 4 | | 25 | 0.14 | |
| **SS 8404** | 130 | + | 35 | | 13 | | 4 | | 26 | 0.20 | |
| **Dyna-Gro 9922** | 130 | + | 34 | | 13 | | 4 | | 27 | 0.20 | |
| **Pioneer 26R15** | 129 | | 33 | | 14 | | 5 | | 28 | 0.66 | |
| VA07W-415 | 130 | + | 30 | | 18 | | 5 | | 29 | 0.61 | |
| **Progeny 166** | 129 | | 26 | | 20 | | 5 | | 30 | 0.79 | |
| **SS 560** | 130 | + | 30 | | 19 | | 5 | | 31 | 0.40 | |
| **SS 8302** | 129 | | 30 | | 16 | | 5 | | 32 | 0.40 | |
| **USG 3592** | 129 | | 34 | | 25 | | 5 | | 33 | 0.93 | |
| **Pioneer 26R22** | 130 | + | 40 | | 14 | | 5 | | 34 | 0.44 | |
| **Oakes** | 131 | + | 38 | | 16 | | 6 | | 35 | 0.42 | |
| **Massey** | 129 | | 33 | | 15 | | 6 | | 36 | 0.23 | |
| **Progeny 185** | 129 | | 34 | | 22 | | 7 | | 37 | 0.42 | |
| **SY 9978** | 130 | + | 38 | | 17 | | 7 | | 38 | 0.60 | |
| **Renwood 3434** | 130 | + | 45 | | 17 | | 7 | | 39 | 0.57 | |
| **USG 3120** | 127 | - | 44 | | 14 | | 7 | | 40 | 0.50 | |
| VA08W-294 | 129 | | 48 | | 17 | | 8 | | 41 | 0.50 | |
| VA08W-193 | 128 | - | 44 | | 18 | | 8 | | 42 | 0.32 | |
| **Pioneer 26R12** | 129 | | 38 | | 18 | | 9 | | 43 | 1.68 | + |
| **VA05W-151*** | 128 | - | 35 | | 29 | | 9 | | 44 | 0.04 | |

**Table 40, continued. Two year average summary of reaction of entries in the Virginia Tech State Wheat Tests to Fusarium head blight (scab), 2010 and 2011 harvests.**

| LINE | Heading date (Julian) | | FHB Incidence[1] (%) | | FHB Severity[2] (%) | | FHB Index[3] (0-100) | | Rank FHB Index | Don Value 2010[4] | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Chesapeake** | 129 | | 39 | | 19 | | 9 | | 45 | 0.83 | |
| VA06W-392 | 129 | | 41 | | 19 | | 9 | | 46 | 0.21 | |
| **VA05W-139*** | 129 | | 41 | | 31 | + | 10 | | 47 | 0.72 | |
| **NC-Yadkin** | 129 | | 48 | | 21 | | 10 | | 48 | 0.55 | |
| VA06W-412 | 130 | + | 39 | | 36 | + | 11 | | 49 | 0.52 | |
| **USG 3555** | 129 | | 48 | | 21 | | 11 | | 50 | 0.55 | |
| **Featherstone VA-258** | 130 | + | 48 | | 21 | | 12 | | 51 | 0.15 | |
| VA05W-70 | 129 | | 50 | | 22 | | 12 | | 52 | 0.06 | |
| **SS 5205** | 129 | | 56 | + | 25 | | 14 | + | 53 | 0.99 | |
| **Pioneer 26R31** | 128 | - | 58 | + | 28 | | 15 | + | 54 | 1.08 | |
| **Merl** | 129 | | 58 | + | 30 | + | 17 | + | 55 | 1.51 | + |
| | | | | | | | | | | | |
| Average | 129 | | 34 | | 16 | | 6 | | | 0.50 | |
| LSD (O.05) | 1 | | 20 | | 14 | | 8 | | | 0.85 | |
| C.V. | 0 | | --- | | --- | | --- | | | --- | |

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

* Released line yet to be named.

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.

[4] Don Values were measured from the 2010 harvest year.

**Table 41. Three year average summary of reaction of entries in the Virginia Tech State Wheat Tests to Fusarium head blight (scab), 2009 - 2011 harvests.**

| LINE | Heading date (Julian) | | FHB Incidence[1] (%) | | FHB Severity[2] (%) | | FHB Index[3] (0-100) | | Rank FHB Index |
|---|---|---|---|---|---|---|---|---|---|
| **Pioneer 25R32** | 130 | + | 15 | - | 12 | | 2 | | 1 |
| **COKER 9553** | 127 | - | 19 | | 13 | | 2 | | 2 |
| **Dyna-Gro V9723** | 128 | | 27 | | 13 | | 3 | | 3 |
| **USG 3665** | 128 | | 21 | | 23 | | 3 | | 4 |
| **SS 8309** | 129 | + | 24 | | 14 | | 4 | | 5 |
| **Jamestown** | 128 | | 24 | | 19 | | 4 | | 6 |
| **Dominion** | 129 | + | 29 | | 12 | | 4 | | 7 |
| **SS 520** | 127 | - | 20 | | 17 | | 4 | | 8 |
| **SS 560** | 130 | + | 25 | | 21 | | 5 | | 9 |
| **Progeny 166** | 128 | | 24 | | 20 | | 5 | | 10 |
| **Oakes** | 129 | + | 32 | | 18 | | 5 | | 11 |
| **Branson** | 128 | | 23 | | 25 | | 6 | | 12 |
| **USG 3315** | 129 | + | 35 | | 17 | | 6 | | 13 |
| **NC-Cape Fear** | 127 | - | 25 | | 22 | | 6 | | 14 |
| **VA05W-251*** | 128 | | 33 | | 15 | | 6 | | 15 |
| **Massey** | 128 | | 29 | | 20 | | 6 | | 16 |
| **SS 8302** | 128 | | 32 | | 20 | | 7 | | 17 |
| **Progeny 117** | 127 | - | 29 | | 20 | | 7 | | 18 |
| **SS 8404** | 129 | + | 34 | | 23 | | 7 | | 19 |
| **Dyna-Gro 9922** | 129 | + | 33 | | 22 | | 7 | | 20 |
| **Pioneer 26R15** | 129 | + | 34 | | 23 | | 8 | | 21 |
| **SS-MPV 57** | 129 | + | 30 | | 23 | | 8 | | 22 |
| **Progeny 185** | 128 | | 33 | | 25 | | 8 | | 23 |
| VA07W-415 | 129 | + | 31 | | 26 | | 8 | | 24 |
| **Pioneer 26R20** | 130 | + | 33 | | 22 | | 8 | | 25 |
| **NC-Yadkin** | 128 | | 38 | | 23 | | 9 | | 26 |
| **VA05W-139*** | 129 | + | 37 | | 32 | | 10 | | 27 |
| **VA05W-151*** | 128 | | 35 | | 29 | | 10 | | 28 |
| **USG 3120** | 127 | - | 45 | | 21 | | 10 | | 29 |
| **USG 3555** | 128 | | 41 | | 24 | | 10 | | 30 |
| **Renwood 3434** | 130 | + | 43 | | 25 | | 11 | | 31 |
| VA06W-392 | 128 | | 38 | | 27 | | 11 | | 32 |
| **Shirley** | 129 | + | 35 | | 28 | | 12 | | 33 |
| **Pioneer 26R12** | 129 | + | 38 | | 26 | | 12 | | 34 |
| **Pioneer 26R31** | 127 | - | 46 | | 31 | | 13 | | 35 |
| **SS 5205** | 129 | + | 56 | + | 25 | | 14 | | 36 |
| VA06W-412 | 129 | + | 40 | | 39 | + | 14 | | 37 |
| **Featherstone VA-258** | 130 | + | 45 | | 30 | | 14 | | 38 |
| **Chesapeake** | 129 | + | 41 | | 31 | | 15 | + | 39 |
| **USG 3592** | 129 | + | 43 | | 36 | + | 15 | + | 40 |
| **Merl** | 128 | | 54 | + | 34 | | 18 | + | 41 |

**Table 41, continued. Three year average summary of reaction of entries in the Virginia Tech State Wheat Tests to Fusarium head blight (scab), 2009 - 2011 harvests.**

| LINE | Heading date (Julian) | FHB Incidence[1] (%) | FHB Severity[2] (%) | FHB Index[3] (0-100) | Rank FHB Index |
|---|---|---|---|---|---|
| Average | 128 | 33 | 23 | 8 | |
| LSD (O.05) | 1 | 15 | 13 | 7 | |
| C.V. | 0 | --- | --- | --- | |

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

* Released line yet to be named.

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.