Virginia Cooperative Extension
Virginia Tech • Virginia State University
www.ext.vt.edu

Small Grains in 2017

Table of Contents

Recommended Small Grain Varieties 1

Barley and Wheat Entries 4

Introduction 6

The Season 6

Section 1: Barley Varieties

Discussion of barley varieties and summary of barley management practices for the 2017 harvest season 8

Table 1. Summary of performance of hulless entries in the Virginia Tech Barley Test over locations, 2017 harvest. 12

Table 2. Two-year average summary of performance of hulless entries in the Virginia Tech Barley Tests, 2016 and 2017 harvests. 13

Table 3. Three-year average summary of performance of hulless entries in the Virginia Tech Barley Tests, 2015, 2016, and 2017 harvests. 14

Table 4. Summary of performance of hulless entries in the Virginia Tech Barley Test planted at the Southern Piedmont AREC, Blackstone VA, 2017 harvest. 15

Table 5. Summary of performance of hulless entries in the Virginia Tech Barley Test planted no-till at the Tidewater AREC, Holland VA, 2017 harvest. 16

Table 6. Summary of performance of hulless entries in the Virginia Tech Barley Test, Eastern Virginia AREC, Warsaw, VA, 2017 harvest. 17

Table 7. Summary of performance of hulless entries in the Virginia Tech Barley Test, Eastern Shore AREC, Painter, VA, 2017 harvest. 18

Table 8. Summary of performance of hulless entries in the Virginia Tech Barley Test, Northern Piedmont Center, Orange, VA, 2017 harvest. 19

Table 9. Summary of performance of hulless entries in the Virginia Tech Barley Test, Kentland Farm, Blacksburg, VA, 2017 harvest. 20

Table 10. Summary of performance of hulled entries in the Virginia Tech Barley Test over locations, 2017 harvest. 21

Table 11. Two-year average summary of performance of hulled entries in the Virginia Tech Barley Tests, 2016 and 2017 harvests. 23

Table 12. Three-year average summary of performance of hulled entries in the Virginia Tech Barley Tests, 2015, 2016, and 2017 harvests. 24

Table 13. Summary of performance of hulled entries in the Virginia Tech Barley Test planted at the Southern Piedmont AREC, Blackstone VA, 2017 harvest. 25

Table 14. Summary of performance of hulled entries in the Virginia Tech Barley Test planted minimum-till at the Tidewater AREC, Holland VA, 2017 harvest. 27

Table 15. Summary of performance of hulled entries in the Virginia Tech Barley Test, Eastern Virginia AREC, Warsaw, VA, 2017 harvest. 29

Table 16. Summary of performance of hulled entries in the Virginia Tech Barley Test, Eastern Shore AREC, Painter, VA, 2017 harvest. 31

Table 17. Summary of performance of hulled entries in the Virginia Tech Barley Test, Northern Piedmont Center, Orange, VA, 2017 harvest. 33

Table 18. Summary of performance of hulled entries in the Virginia Tech Barley Test, Kentland Farm, Blacksburg, VA, 2017 harvest. 35

Section 2: Barley Scab Research

Discussion of reaction of entries in the 2016-17 Virginia Tech Hulless Barley and Barley Tests to Fusarium head blight. 37
Table 19. Summary of reaction of entries in Virginia Tech State Hulless Barley Test to Fusarium head blight (scab), 2017 harvest. 38
Table 20. Summary of reaction of entries in Virginia Tech State Barley Test to Fusarium head blight (scab), 2017 harvest. 39

Section 3: Wheat Varieties

Discussion of wheat varieties and summary of wheat management practices for the 2017 harvest season... 41
Entries in the 2016-17 Virginia Wheat Test, arranged by company 43
Table 21. Summary of performance of entries in the Virginia Tech Wheat Test, 2017 harvest 47
Table 22. Two-year average summary of performance of entries in the Virginia Tech Wheat Tests, 2016 and 2017 harvests. 53
Table 23. Three-year average summary of performance of entries in the Virginia Tech Wheat Tests, 2015, 2016, and 2017 harvests. 56
Table 24. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern Virginia AREC, Warsaw, VA, 2017 harvest. 58
Table 25. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern Shore AREC, Painter, VA, 2017 harvest. 63
Table 26. Summary of performance of entries in the Virginia Tech Wheat Test, Southern Piedmont AREC, Blackstone, VA, 2017 harvest. 67
Table 27. Summary of performance of entries in the Virginia Tech Wheat Test, Northern Piedmont, Center, Orange, VA, 2017 harvest. 71
Table 28. Summary of performance of entries in the Virginia Tech Wheat Test, Kentland Farm, Blacksburg, VA, 2017 harvest. 75
Table 29. Summary of performance of entries in the Virginia Tech Wheat Test planted minimum-till at the Tidewater AREC, Holland, VA, 2017 harvest. 79

Section 4: Milling and Baking Quality

Discussion of milling and baking quality of entries in the 2015-16 Virginia Wheat Test 83
Table 30. Milling and baking quality of entries in the Virginia Tech Wheat Test based on the evaluation of the 2016 harvest. 85

Section 5: Wheat Scab Research

Discussion of reaction of entries in the 2016-17 Virginia Tech Wheat Test to Fusarium head blight 87
Table 31. Summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab), 2017 harvest. 88
Table 32. Two-year average summary of entries in the Virginia Tech State Wheat Tests to Fusarium head blight (scab), 2016 and 2017 harvests. 92

Recommended Small Grain Varieties

The following are the small grain variety recommendations for Virginia in 2016. 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

Agronomic Characteristics

Cultivar	Grain Yield	Test Weight	Milling Quality	SRW Baking Quality
Early Heading Varieties (119-120 d, Julian)				
CROPLAN 8415	3	4	Good	Good
SY Viper	3	4	Poor	Poor
CROPLAN 8530	4	3	Fair	Poor
SH 7200	3	4	n/a	n/a
MAS 61	3	3	Fair	Poor
Mid-Season Heading Varieties (121-122 d, Julian)				
Hilliard	4	4	Poor	Moderate
Pioneer Brand 26R59	4	4	Moderate	Moderate
AgriMAXX 474	4	3	n/a	n/a
USG 3895	4	3	Good	Good
AgriMAXX 415	4	4	Good	Poor
SY 547	4	4	Poor	Poor
Full-Season Heading Varieties (123-124 d, Julian)				
CROPLAN 8550	4	3	Good	Poor
#Bullet	4	3	n/a	n/a
L11550	4	4	Good	Poor
MBX 14S-210	4	3	Poor	Poor
AgriMAXX 444	4	3	n/a	n/a
USG 3404	3	3	n/a	n/a
Pioneer Brand 26R41	3	3	Moderate	Poor
Shirley	3	3	Good	Good
MAS 7	4	4	Poor	Poor
Pioneer Brand 26R10	3	3	Moderate	Good
AgriMAXX 446	3	2	Good	Moderate

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)					
CROPLAN 8415	Moderate	Good	Moderate	Good	Moderate
SY Viper	Good	Moderate	Moderate	Good	Good
CROPLAN 8530	Very Good	Very Good	Very Good	Moderate	Very Good
SH 7200	Good	Very Good	Weak	Moderate	Moderate
MAS 61	Very Good	Moderate	Good	Good	Good
Mid-Season Heading Varieties (121-122 d, Julian)					
Hilliard	Very Good	Very Good	Very Good	Moderate	Good
Pioneer Brand 26R59	Moderate	Very Good	Moderate	Good	Good
AgriMAXX 474	Moderate	Very Good	Weak	Moderate	Good
USG 3895	Moderate	Moderate	Very Good	Good	Good
AgriMAXX 415	Moderate	Weak	Moderate	Moderate	Very Good
SY 547	Very Good	Very Good	Very Good	Good	Moderate
Full-Season Heading Varieties (123-124 d, Julian)					
CROPLAN 8550	Very Good	Very Good	Very Good	Good	Very Good
#Bullet	Very Good	Very Good	Good	Very Good	Very Good
L11550	Good	Good	Very Good	Good	Good
MBX 14S-210	Moderate	Very Good	Very Good	Very Good	Very Good
AgriMAXX 444	Good	Good	Weak	Good	Good
USG 3404	Moderate	Good	Weak	Moderate	Good
Pioneer Brand 26R41	Moderate	Very Good	Moderate	Moderate	Good
Shirley	Moderate	Very Good	Very Good	Good	Very Good
MAS 7	Very Good	Moderate	Weak	Moderate	Very Good
Pioneer 26R10	Good	Moderate	Weak	Good	Good
AgriMAXX 446	Moderate	Moderate	Weak	Weak	Good

† FHB - Fusarium head blight

Recommended Barley Varieties

	Hulled Barley				Hulless Barley
	Nomini*	Thoroughbred	Atlantic	Secretariat	Amaze 10
Adapted Regions					
Coastal Plain		X	X	X	X
Piedmont, South of James River		X	X	X	X
Piedmont, North of James River		X	X	X	X
West of Blue Ridge	X	X	X	X	X

Agronomic Characteristics					
Yield	2	4	4	4	4
Test Weight	1	3	3	3	2
Lodging Tolerance	Very Good	Good	Good	Good	Fair
Relative Height	3	3	2	2	3
Relative Heading	Avg	Late	Early	Avg	Avg

4 - Significantly greater than average
3 - Average or greater than average
2 - Average or less than average
1 - Significantly less 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

Limagrain Cereal Seeds, 7707 Jackson Pond Dr, Charlotte, NC 28273 – Violetta.
Virginia Tech and Virginia Crop Improvement Association, 9142 Atlee Station Road, Mechanicsville, VA 23116 – Amaze 10, Atlantic, Barsoy, Callao, Doyce, Eve, Nomini, Price, Secretariat, Thoroughbred, and Wysor.
Note: The seed that was used to plant the variety Dan this year was from a questionable source; the associated data has been omitted from the 2017 results.

Commercial and Experimental Wheat Entries

AgriMAXX Wheat Company, 7167 Highbanks Road, Mascoutah, IL 62258 – AgriMAXX 415, AgriMAXX 444, AgriMAXX 446, AgriMAXX 463, AgriMAXX 464, AgriMAXX 473, and AgriMAXX 474.
Armor Seed, L.L.C., 183 Pennsylvania Avenue, Waldenburg, AR 72475 – Mayhem, ARW1514, ARW1575, ARW1610, and ARW1611.
Crop Production Services, 15277 Richmond-Tappahannock Highway, St Stephens Church, VA 23148 - Dyna-Gro 9223, Dyna-Gro 9522, Dyna-Gro 9600, Dyna-Gro 9692, Dyna-Gro 9701, Dyna-Gro 9750, Dyna-Gro 9772, Dyna-Gro 9862, Shirley, and WX16722.
Dupont Pioneer, 425 Abbeydale Way, Columbia, SC 29229 – Pioneer 26R10, Pioneer 26R36, Pioneer 26R41, Pioneer 26R53, Pioneer 26R59, and Pioneer XW15C.
Eddie Mercer Agri-Services, Inc, 6900 Linganore Road, Frederick, MD 21702 –MBX 14-S-210, MBX 16-B-203, MBX 17-P-275, and MBX 17-M-245.
Erwin-Keith, Inc., 1529 Highway 193, Wynne, AR 72396 – P243, P357, #Boss, #Bullet, #Turbo, #Warrior, PGX14-5, and PGX16-3.
Featherstone Farm Seed, 13941 Genito Road, Amelia, VA 23002 - Featherstone 73 and Featherstone VA-258.
University of Georgia, 1109 Experiment Street, Griffin, GA 30223 – GA07353-14E19, GA051207-14E53, and GAJT 141-14E45.
Limagrain Cereal Seeds, 7099 Parkbrook Lane, Cordova, TN 38018 –L11538, L11541, and L11550.
University of Maryland, 1116 Research Greenhouse Complex, University of Maryland, College Park, MD 20742 – 15MW133, 15MDX1, 15MDX2, 15MDX4, and 15MDX17.
Meherrin Ag & Chemical, 413 Main Street, Severn, NC 27877 – SH 4300, SH 4400, SH 7200, and SH EXP 1706.
Mid Atlantic Seeds, 316 N. Albemarle Street #6, York, PA 17403 – MAS #6, MAS #7, MAS #35, MAS #42, MAS #61, MAS #67, MAX 116, MAX 216, MAX 316, and MAX 516.
NC State University, 840 Method Road Unit 3, Raleigh, NC 27695 – NC13-20332, NC13-21213, NC13-23443 and NC13-23449.
Syngenta Seeds, Inc., 806 N. 2nd St, Berthoud, CO 80513 – SY 007, SY 100, SY 547, SY Harrison, SY Viper, and Oakes.
University of Tennessee, 2431 Joe Johnson Drive, Knoxville, TN 37996 – TN1501 and TN1604.
Texas A&M AgriLife Research, 2600 S. Neal, Commerce, TX 75429 – TX EL2.
UniSouth Genetics, 3205 C Highway 46S, Dickson, TN 37055 – USG 3197, USG 3228, USG 3316, USG 3404, USG 3458, USG 3536, USG 3549, and USG 3895.
Virginia Tech and Virginia Crop Improvement Association, 9142 Atlee Station Road, Mechanicsville, VA 23111 –Hilliard, Massey and all lines prefixed by VA and DH.
Winfield, 1080 County Road F West, MS 5850, Shoreview, MN 55126-2910 - Croplan 8415, Croplan 8530, Croplan 8550, Croplan SRW 9415, and Croplan SRW 9606.

Appreciation is expressed to the Virginia Small Grains Check-Off Board, AgriMAXX, Armor Seed LLC, Crop Production Services, Dupont Pioneer, Eddie Mercer Agri-Services, Inc., Erwin-Keith, Inc., Featherstone Farm Seed, Inc., Limagrain Cereal Seeds, Meherrin Ag & Chemical, Mid-Atlantic Seeds, Syngenta Seeds, Inc., UniSouth Genetics, Inc., Winfield, 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 Rucker, Research Associate: Dr. Bee Khim Chim, Post-Doctoral Assistant. Location Supervisors: Mr. Tom Custis (Painter); Dr. David Langston and Mr. Karl Jones (Holland); Mr. Bob Pitman and Mr. Mark Vaughn, (Warsaw); Mr. Ned Jones (Blackstone); Dr. Carl Griffey, Mr. Wynse Brooks, Mr. Jon Light (Blacksburg); Mr. Doug Horn (Shenandoah Valley); Mr. Steve Gulick and Mr. Brad Lael (Orange).

Introduction

The following tables present results from barley and wheat varietal tests conducted in Virginia in 2015-2017. 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 - 2017

Statewide temperatures and rainfall in fall 2016 were generally favorable for wheat seeding after fields dried from the soaking from Hurricane Matthew. By mid-October, wheat planting reached 20% of intentions, compared with a five-year average of 25% by this date. Continued favorable weather allowed 41% and 72% of the wheat and barley crops, respectively, to be planted by October 3. By mid-November, planting progress was near the five-year average for all small grains reported with 53 and 60% of barley and wheat acres reported as good or excellent. Dry conditions persisted through late November resulting in a decline in the number of wheat and barley acres rated excellent, though this did allow successful late seeding in some areas. Rainfall in early December returned the total season precipitation to near normal, followed by mild and wet conditions through much of January. February was unseasonably warm with limited rainfall, resulting in soil moisture depletion. Barley and wheat rwere rated good or excellent on 46 and 68% of acres, respectively. March brought mostly mild temperatures with a freeze mid-month. Seventy-five percent of the winter wheat crop was rated good or excellent for the week ending March 26. Statewide rains were received in mid-March, but season total rainfall continued below normal. By the end of the third week of March, 33% of the wheat crop was reported as headed, up 14% from last year and 23% from the five-year average. Dry soil conditions continued through mid-April with temperatures above average through the last half of the month. At the end of April, 75% of the winter wheat crop was still rated good or excellent. Wet weather in May resulted in a decline in both wheat and barley with 65 and 62% rated good or excellent, respectively. By May 20, 94% of the wheat crop was headed compared with 90% last year. Twenty-two percent of the barley crop was harvested by June 4 up from 4% harvested in 2016. Wheat harvest was at 3%. By June 19, 69 and 51% of the barley and wheat for grain were harvested, both up significantly from 2016 and the 5-year average. Virginia farmers were expected to harvest an average wheat yield of 64 bushels per acre, up 11 bushels from 2016, but total production is expected to be 8.6 million bushels, down 7% from the previous year. The decline in total production is due to a decrease in harvested acres to a total of 135,000 acres.

Figure 1. 2016-17 and 30-yr mean cumulative growing season precipitation for Virginia.

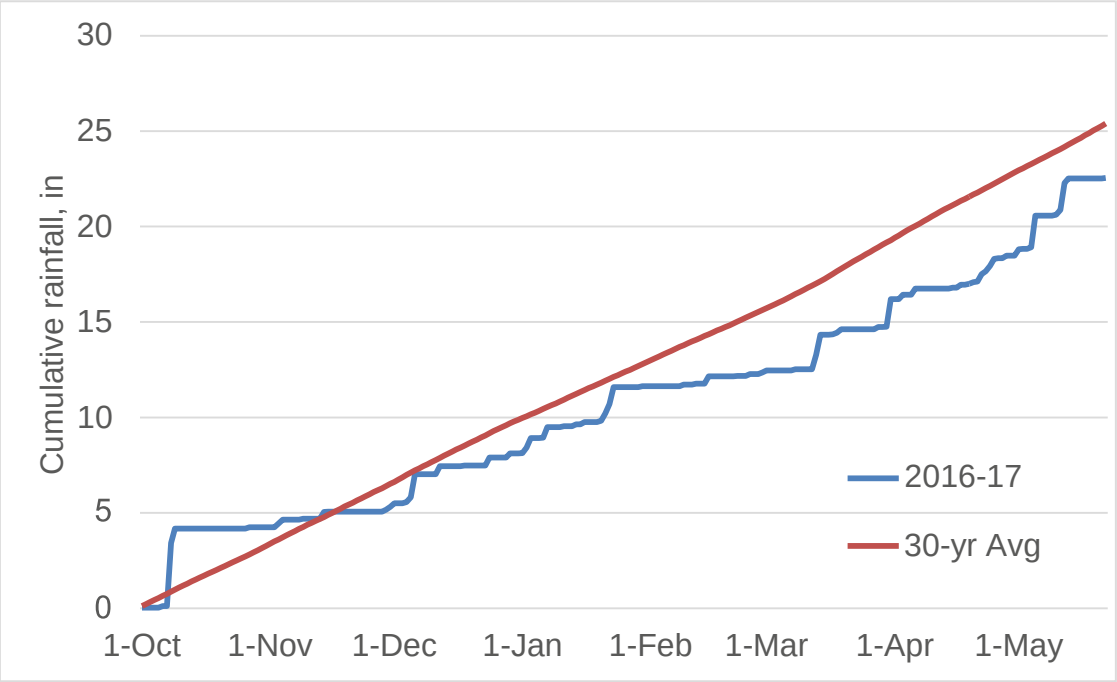
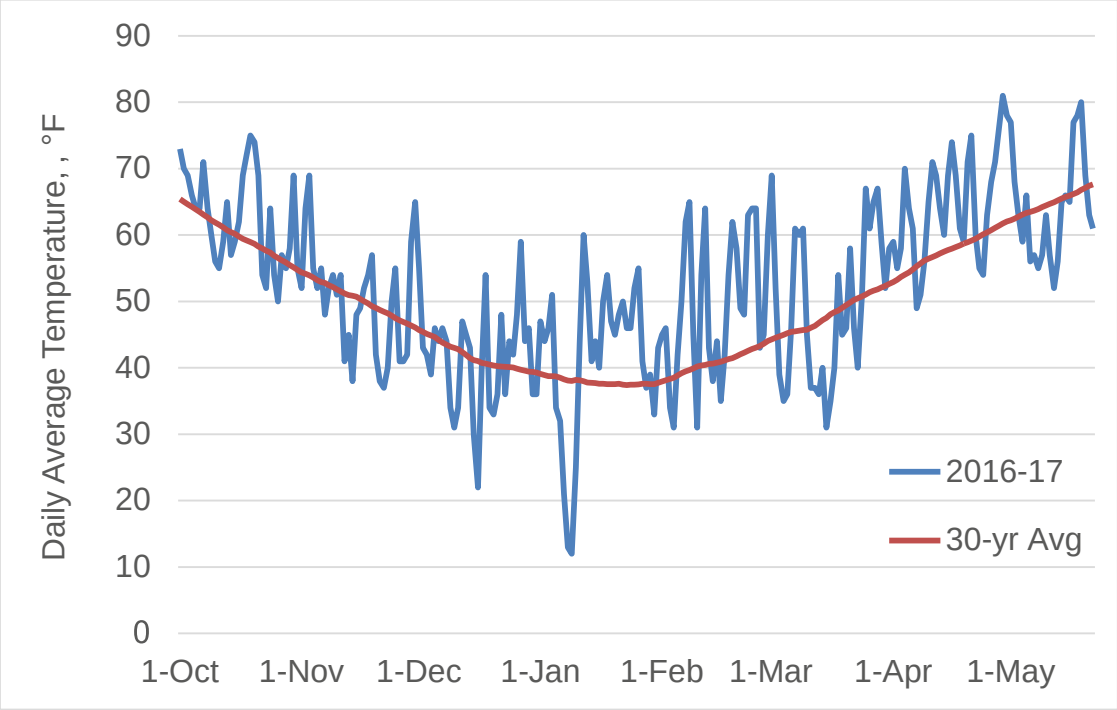


Figure 2. Growing season daily average temperature, 2016-17 and 30-yr mean.



Section 1: Barley Varieties

Note: At Painter in the 2017 harvest year, results were severely impacted by a potential outbreak of a new isolate of leaf rust. Therefore, yield and disease data were not included in the over-location and over-year analyses.

The Virginia Tech barley-breeding program is the largest and, until recently, was the only remaining public program in the eastern United States. Our program is significantly diverse with breeding efforts focused on development of superior, widely adapted, high-yielding winter barley cultivars and a major focus on incorporation of value-added traits geared toward development of new markets. However, if barley is to regain its historical position, it must be more competitive with other traditional crops (corn and wheat). Significant progress continues to be made in the development of high value winter barley cultivars. We have developed elite barley lines having the potential for use in multiple end-use markets. The development of barley cultivars for use in the production of feed, malt and food having desirable quality traits including, but not limited to, high starch, high or low protein, and beta-glucan depending on targeted end uses is an overall goal. Focus on improving yield potential, disease resistance and end use quality of barley will have several practical benefits to producers and end users. The ability to identify genetic variation between barley lines may help breeders improve yields of barley adapted to this region.

New barley lines derived from crosses made between superior barley breeding lines from our program with outstanding breeding lines from other programs are being developed and evaluated in the program. In the spring of 2016, we made over 300 crosses in the greenhouse comprised of superior malt barley parents from the Winter Malt Barley Trial (WMBT) and elite barley parents from our program. Last fall (2016), we planted F_1 progeny (315) from 342 crosses made in 2016, and F_2 progeny (209) from 426 crosses made in 2015. We also evaluated over 700 pure lines in replicated yield trials at multiple locations in Virginia in order to identify potential high yielding cultivars. We also evaluated 39 malt barley double haploid (DH) lines in replicated preliminary tests at Blacksburg and Warsaw, VA. In addition, we evaluated approximately 25 advance barley lines in replicated yield tests at locations in neighboring states (North Carolina, Kentucky, Ohio, and Pennsylvania).

As interest continues to grow in locally produced ingredients from the craft brewing industry in the mid-Atlantic and eastern U.S. finding malted barley is not easy for those located east of the Mississippi river. This has triggered significant demand for malt barley. We are trying to bridge this gap by evaluating malt barley cultivars developed by collaborators in the U.S and Europe while rapidly developing and testing our own malt barley experimental lines. Locally produced malting barley is good for Virginia's economy and farmers can earn a $3 to $4 premium for growing malting barley. Virginia currently grows around 45,000 acres of feed barley annually which could be converted to the production of malting barley as well as fostering an expansion in total barley acreage. Winter grown malt barley is more sustainable since it is grown from October to June, providing farmers the added double crop opportunities with soybeans in the summer. According to the Brewers Association, Virginia's 124 craft breweries currently produce over 274,000 barrels of craft beer annually and have an economic impact of over a million dollars.

Our main effort is breeding winter Malt barley cultivars that have superior malt quality and are well adapted to the mid-Atlantic and southeastern United States. We

have recently started developing double haploid malt barley lines in collaboration with Oregon State University. Results from these tests are encouraging since double haploids allow us to develop cultivars much faster than traditional methods. The DH lines are genetically pure, eliminating approximately 2-3 years of the total time required to develop a variety. Besides developing and testing our own experimental lines, we also collaborate with other breeding programs which allows us to evaluate cultivars developed by our collaborators across the country as well as cultivars from around the world, especially Europe. In the 2017-2018 season, we plan to start a regional mid-Atlantic Malt Barley Trial with neighboring states to facilitate collaborations and enhance cultivar development. We have a graduate student, Nick Meier, developing molecular markers for malting quality traits to help us select superior quality malting lines with more precision and eliminate costly testing expenses. Nick is also working on flavor analysis of commonly grown cultivars to determine how malt flavor is affected by genetics and environment.

We anticipate that interest in production of malt barley will continue to grow in this region and we plan to release cultivars to meet diverse market demands. Our future allotment of resources will continue to provide more resources to our winter malt barley as it continues to grow.

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 nearly 50,000 acres in Virginia will require the revival of international market opportunities and/or improvement of domestic value-added opportunities.

Hulless Barley

Note: The seed that was used to plant the variety Dan this year was from a questionable source; the associated data has been omitted from the 2017 results.

Hulless barley tests were planted in seven-inch rows at Blackstone, Orange, Holland, and Painter. They were planted in six-inch rows at Warsaw and Blacksburg. The no-till site at Holland was planted at 66 seeds per square foot. All other locations were planted at 60 seeds per square foot. Yields from Holland in the 2017 harvest year were not included in the over-location or over-year analyses. Additionally, yield and disease data at the Painter location were not included in the over-location or over-year analyses due to potential outbreak of a new isolate of leaf rust that impacted yield and test weight in 2017.

In the 2017 harvest year, grain yield for Doyce hulless barley in Virginia was 53 bushels per acre with test weight of 50.0 pounds per bushel. Average grain yield of Eve was 60 bushels per acre with test weight of 55.7 pounds per bushel. Amaze 10 had the highest average grain yield (62 bushels per acre) among released cultivars (Doyce and Eve). It produced a test weight of 55.2 pounds/bushel that was similar to Eve (55.7 pounds/bushel) and 5.2 pounds per bushel higher than Doyce (50.0 pounds/bushel). The experimental line VA14H-58 had the highest overall average grain yield (81 bushels per acre) that was 19 bushels per acre higher than that of Amaze 10 (62 bushels/acre), 21 bushels per acre higher than Eve, 31 bushels per acre higher than Doyce, and 13 bushels per acre more than the 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. The no-till site at Holland was planted at 48 seeds per square foot. All other locations were planted at 44 seeds per square foot. Yields from Holland in the 2017 harvest year were not included in the over-location or over-year analyses. Similarly, yields and disease data at Painter location also were not included in the over-location or over-year analyses due to an outbreak of a potential new leaf rust isolate.

In the 2017 harvest year, the overall grain yield of Thoroughbred was 96 bushels per acre with an average test weight of 41.0 pounds per bushel compared to the mean yield of 91 bushels per acre and a test weight of 42.1 pounds per bushel for the mean of all cultivars tested. Average grain yield of Secretariat (99 bushels per acre) was 3 bushels per acre higher than Thoroughbred, 5 bushels per acre higher than Atlantic (92 bushels per acre), 15 bushels per acre higher than Price, 17 bushels per acre higher than Callao and 24 bushels per acre higher than Nomini. However, the experimental line VA14B-79 had the highest average overall grain yield (105 bushel per acre) that was 6 bushel per acre higher than Secretariat, 9 bushel per acre more than Thoroughbred and 14 bushel per acre higher than the overall test mean. In addition, two other experimental lines (VA14B-63 and VA14B-74) ranked 2nd and 3rd respectively in average grain yield (103 and 100 bushels per acre) that were 3 to 4 bushels per acre lower than that of Secretariat and 1 to 2 bushels per acre higher than Thoroughbred.

Summary of barley management practices for the 2017 harvest season (All rates are given on a per acre basis.)

Blacksburg - Planted October 12, 2016. Pre-plant fertilizer was 30-40-60-8(S)-3(B). Site was sprayed with .75 oz. Harmony Extra SG® on November 15, 2016. Site was fertilized with 25 units UAN 30-0-0 on February 17, 2017 and with 50 units UAN 30-0-0 plus 0.75 oz Harmony Extra SG® on March 24, 2017. Harvest occurred June 7, 2017.

Blackstone - Planted October 18, 2016. Pre-plant fertilizer was 300 lb 10-10-10 on October 18, 2016. Site received 60 lb N + 0.5 oz. Harmony Extra XP® February 2, 2017. Site was fertilized with 60 lb. N using UAN on March 1, 2017. Mustang® Maxx was applied for aphid control. Harvest occurred May 31, 2017.

Painter - Planted October 20, 2016. Pre-plant fertilizer was 50 lb. N using 30% on October 19, 2016. Application of .75 oz. Harmony Extra SG® plus 8 oz NIS ¼% was done on February 8, 2017. Site was fertilized with 100 lb. N using 30% UAN March 25, 2017. Harvest occurred June 13, 2017.

Warsaw - Planted October 18, 2016. Pre-plant fertilizer was 30-70-60-5 applied October 17, 2016. Quelex™ was applied at .75 oz with surfactant at 1 qt/100 gal water on December 4, 2016. Site was fertilized using 12-0-0-1.5 at 25 lb on both December 10, 2016 and February 6, 2017. Site was also fertilized using 24-0-0-3 at 45 lb on March 12, 2017. Site was treated with 2 oz Tombstone® on April 28, 2017. Harvest occurred June 2, 2017.

Holland - Planted minimum-till October 19, 2016. Site was sprayed with 28 oz Roundup® October 12, 2016. Pre-plant fertilizer was 379 lb 9-15-31 on October 17, 2016. Site was fertilized with 24 gal 24-0-0-3 plus 1.5 pt Mn on February 28, 2017. Site was treated with 3 oz Tilt® on March 23, 2017. Harvest occurred June 9, 2017.

Orange - Planted October 6, 2016. Pre-plant fertilizer was 32-60-40 October 4, 2017. Sixty lb. N plus .6 oz. Harmony Extra SG® was applied February 21, 2017. Harvest occurred June 8-9, 2017.

Table 1. Summary of performance of entries in the Virginia Tech Hulless Barley Test, 2017 harvest.

Hulless Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Date Headed (Julian)		Mature Height (In)		Plant Lodging (0-9)		Leaf Rust (0-9)		Net Blotch (0-9)		Powdery Mildew (0-9)	
	(4)		(4)		(2)		(3)		(5)		(3)		(2)		(1)	
VA14H-58	80.8	+	57.1	+	104	-	32		3		4		5		1	
VA15H-11	77.2	+	56.0		105		32		3		3	-	4	-	2	
VA14H-33	76.6	+	56.0		103	-	32		3		4	-	5		2	
VA15H-12	76.1	+	56.7	+	105		32		3		3	-	5		2	
VA15H-9	73.7	+	55.1	-	106		32		2	-	4	-	6		4	+
VA15H-118 WS	73.4	+	57.1	+	106	+	33	+	3	-	5		5		2	
VA15H-90 WS	73.2	+	57.6	+	106		33		3		4	-	6		2	
VA15H-119 WS	72.2		56.5	+	106	+	33	+	3		4	-	6		1	
VA15H-79 WS	71.7		54.5	-	103	-	32		3		4	-	5		1	
VA15H-73 (2R)	71.0		56.4	+	107	+	33	+	2	-	5		6		1	
VA15H-111 WS	69.8		56.1		106		32		3		4	-	7	+	1	
VA15H-141 WS	68.7		56.5	+	106		31		3		6		5		1	
VA15H-138 WS	68.7		56.3	+	105		32		4		5		5		1	
VA14H-195 WS	68.2		55.7		104	-	33		5	+	5		5		1	
VA14H-110	68.2		56.3	+	103	-	33		3		5		4	-	2	
VA15H-116 WS	68.1		55.9		107	+	35	+	3		4		6		1	
VA15H-85 WS	67.5		56.8	+	106		35	+	4		5		6		3	
VA06H-79	67.2		54.4	-	106	+	31	-	3		8	+	4	-	1	
VA15H-110 WS	66.6		55.9		106	+	32		3		4		7	+	2	
VA07H-35 WS	66.5		55.3		106	+	31		4		5		5		3	
VA15H-140 WS	65.7		55.7		106		31	-	4		5		5		2	
VA15H-131 WS	65.7		55.4		106		32		3		5		5		1	
VA15H-100 WS	65.3		56.0		106	+	32		3		7	+	5		2	
VA15H-139 WS	65.2		56.2		105		32		4	+	5		5		1	
VA06H-25	64.3		55.0	-	107	+	31		4		4		5		3	
VA14H-3	63.3	-	56.7	+	101	-	31		2	-	3	-	5		1	
Amaze 10	62.5	-	55.2	-	107	+	32		4		5		5		2	
Eve	59.7	-	55.7		100	-	30	-	3		4		8	+	1	
VA08H-79 WS	59.3	-	54.0	-	108	+	31		4	+	9	+	4	-	9	+
Doyce	52.9	-	50.0	-	103	-	30	-	4		6	+	8	+	1	
Average	68.3		55.7		105		32		3		5		5		2	
LSD (0.05)	4.4		0.5		1		1		1		1		1		2	
C.V.	9.3		1.4		1		4		33		19		17		102	

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.

Note: The seed that was used to plant Dan this year was from a questionable source; the associated data has been omitted from the 2017 results.

Table 2. Two-year average summary of performance of entries in the Virginia Tech Hulless Barley Tests, 2016 and 2017 harvests.

Hulless Lines	Yield (Bu/a @ 48 lb/bu)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Leaf Rust (0-9)	Net Blotch (0-9)	Powdery Mildew (0-9)	BYD Virus[1] (0-9)	Winter Survival (%)	Freeze Damage (0-9)
	(8)	(8)	(4)	(5)	(8)	(4)	(5)	(3)	(1)	(1)	(1)
VA14H-58	73.6 +	56.9 +	108	33 +	3	4 -	4	2	1	95	2
VA14H-33	69.0 +	56.4 +	107 -	32	3	3 -	4	1 -	0	91	4
VA14H-195 WS	68.1 +	56.3 +	108	33 +	4	5	5	1 -	0	96	2 -
VA14H-110	66.6 +	56.4 +	107 -	33 +	2 -	5	3 -	2	1	95	5
VA06H-79	63.1	54.5 -	110 +	30 -	3	8 +	3 -	0 -	0	94	2
VA07H-35 WS	62.5	55.6	110 +	31	4	4 -	4	5	2	94	2
VA06H-25	61.4	55.3	110 +	31	3	4 -	5	4	2	94	2
Amaze 10	60.6	55.9	110 +	32	3	5	4	4	2	95	2
VA14H-3	60.5	56.5 +	105 -	32	3	3 -	5	1 -	0	93	5
VA08H-79 WS	55.9 -	54.3 -	112 +	32	3	8 +	3 -	9 +	0	98 +	2 -
Eve	52.3 -	55.6	104 -	31 -	3	4	7 +	1 -	0	90 -	7 +
Doyce	51.6 -	51.0 -	106 -	30 -	3	5	7 +	1 -	0	95	9 +
Average	62.1	55.4	108	32	3	5	5	3	1	94	4
LSD (0.05)	3.0	0.5	0	1	1	1	1	1	2	3	2
C.V.	9.8	2.0	1	4	43	19	23	48	##	2	35

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.

[1] BYD = Barley Yellow Dwarf Virus.

Table 3. Three-year average summary of performance of entries in the Virginia Tech Hulless Barley Tests, 2015, 2016, and 2017 harvests.

Hulless Lines	Yield (Bu/a @ 48 lb/bu)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Leaf Rust (0-9)	Net Blotch (0-9)	Powdery Mildew (0-9)	Winter Survival (%)
	(14)	(14)	(6)	(8)	(14)	(5)	(8)	(6)	(2)
VA06H-25	70.8 +	56.3 +	113 +	33 +	4	4 -	3	3	94
VA07H-35 WS	70.3 +	56.3 +	113 +	33 +	4 +	4 -	3	4 +	94
VA06H-79	70.1 +	55.4	113 +	32	3 -	8 +	2 -	1 -	94
Amaze 10	68.3	56.6 +	113 +	33 +	4	5 -	3	4	95
Doyce	62.4 -	52.4 -	109 -	31 -	4	5	6 +	1 -	96
VA08H-79 WS	62.3 -	54.0 -	114 +	33	3	9 +	2 -	8 +	97 +
Eve	62.0 -	55.9 +	106 -	31 -	3 -	5 -	5 +	1 -	92 -
Average	66.6	55.3	111	32	4	6	4	3	95
LSD (0.05)	3.0	0.5	0	1	0	1	1	1	2
C.V.	11.7	2.5	1	5	37	15	34	41	2

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 4. Summary of performance of entries in the Virginia Tech Hulless Barley Test, Southern Piedmont AREC, Blackstone, VA, 2017 harvest.

Hulless Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Plant Lodging (0-9)		Powdery Mildew (0-9)	
VA14H-33	77.2	+	56.9	+	4		2	
VA15H-90 WS	75.3		58.0	+	4		2	
VA15H-116 WS	74.1		55.8		5		1	
VA14H-58	73.5		57.3	+	4		1	
VA15H-73 (2R)	72.8		57.1	+	2	-	1	
VA15H-119 WS	72.5		56.1		4		1	
VA15H-141 WS	72.3		56.3		5		1	
VA15H-118 WS	70.8		56.8		5		2	
VA06H-79	70.3		55.2		5		1	
VA15H-140 WS	70.2		55.2		6	+	2	
VA15H-79 WS	70.1		55.6		4		1	
VA15H-138 WS	69.5		56.1		6		1	
VA14H-110	68.3		57.1	+	4		2	
VA15H-9	68.3		56.1		3	-	4	+
VA15H-11	68.2		56.0		4		2	
VA15H-12	67.9		56.7		4		2	
VA15H-110 WS	67.8		56.3		4		2	
VA14H-195 WS	67.7		55.2		5		1	
VA15H-100 WS	67.6		56.9	+	4		2	
VA15H-111 WS	67.2		55.8		4		1	
VA07H-35 WS	65.8		54.7	-	5		3	
VA15H-131 WS	65.6		55.5		4		1	
VA15H-139 WS	63.1		55.7		5		1	
VA08H-79 WS	62.4		53.9	-	7	+	9	+
VA15H-85 WS	60.7		56.4		7	+	3	
VA14H-3	60.3		56.6		3	-	1	
Amaze 10	57.7		55.2		4		2	
Eve	55.4	-	56.4		4		1	
Doyce	54.3	-	51.2	-	4		1	
VA06H-25	52.2	-	54.0	-	4		3	
Average	67.0		55.9		4		2	
LSD (0.05)	9.7		1.0		1		2	
C.V.	10.3		1.2		22		102	

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 5. Summary of performance of entries in the Virginia Tech Hulless Barley Test, Tidewater AREC, Holland, VA, 2017 harvest.

Hulless Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Plant Lodging (0-9)		Leaf Rust (0-9)	
VA15H-9	66.3	+	54.9		4		5	
VA15H-116 WS	64.7		54.3		5		5	
VA15H-73 (2R)	64.3		53.7		2	-	3	
VA15H-110 WS	63.4		53.5		3	-	3	
VA15H-12	61.0		53.6		4		3	
VA15H-90 WS	60.5		53.3		4		4	
VA14H-58	59.3		54.2		4		6	
VA14H-110	58.1		54.9		3		6	
VA15H-118 WS	56.9		54.7		4		4	
VA15H-79 WS	56.7		52.5		4		4	
VA15H-100 WS	56.5		54.8		4		7	
VA06H-25	56.1		53.2		5		5	
VA15H-119 WS	55.7		54.4		4		3	
Amaze 10	55.1		53.7		5		5	
VA08H-79 WS	54.8		52.7		4		9	+
VA15H-138 WS	54.7		53.9		4		3	
VA15H-140 WS	54.6		52.8		5		4	
VA15H-139 WS	54.4		53.0		5		5	
VA15H-111 WS	54.1		54.4		3		4	
VA15H-11	54.0		54.5		5		4	
VA14H-195 WS	53.6		53.5		5		5	
VA15H-131 WS	53.2		53.6		4		5	
VA15H-85 WS	53.0		55.0		4		4	
Doyce	52.9		48.8	-	4		9	+
VA15H-141 WS	52.4		53.2		4		6	
VA14H-33	52.1		55.0		3		4	
Eve	52.0		54.2		5		5	
VA07H-35 WS	50.6		53.5		5		5	
VA06H-79	49.1		52.1	-	4		7	
VA14H-3	47.2		54.6		3		4	
Average	55.9		53.7		4		5	
LSD (0.05)	10.0		1.3		1		3	
C.V.	12.2		1.7		20		27	

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 6. Summary of performance of entries in the Virginia Tech Hulless Barley Test, Eastern Virginia AREC, Warsaw, VA, 2017 harvest.

Hulless Lines	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Yield (Bu/a @ 48 lb/bu)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Leaf Rust (0-9)	Early Height 1 (In)	Early Height 2 (In)
VA15H-118 WS	---	---	71.4 +	57.4 +	101 +	37 +	4 -	3 -	6	12
VA15H-11	---	---	70.0 +	56.6 +	101	35	6	3 -	6	13
VA15H-12	---	---	66.2 +	57.1 +	101	34	6	2 -	6	12
VA15H-119 WS	---	---	65.2 +	57.3 +	101 +	36 +	5 -	3	7	11
VA14H-58	---	71.6 +	65.1 +	57.2 +	99 -	34	6	3 -	7	13
VA15H-9	---	---	64.9 +	54.8	101 +	33	5 -	3 -	7	13
VA15H-79 WS	---	---	64.0 +	54.3	98 -	33	6	3 -	9 +	15 +
VA15H-116 WS	---	---	63.0 +	55.7	101 +	37 +	6	4	6	12
VA15H-90 WS	---	---	62.0	57.8 +	101 +	34	5	3	5 -	10 -
VA15H-73 (2R)	---	---	61.4	57.6 +	104 +	36 +	3 -	5	6	11
VA14H-33	---	63.9 +	61.0	55.7	98 -	35	5 -	3 -	8 +	14
VA15H-111 WS	---	---	60.2	55.5	101 +	33	6	3	6	12
VA15H-131 WS	---	---	59.6	55.5	101 +	33	6	4	6	11
VA14H-110	---	67.4 +	59.5	56.6 +	98 -	35	6	4	7	12
VA15H-85 WS	---	---	58.8	57.1 +	100	38 +	5	4	7	13
VA07H-35 WS	75.8 +	62.9 +	57.1	55.0	101 +	33	7	5	7	12
Amaze 10	73.7 +	61.3	55.4	54.2	102 +	34	7 +	5	8	12
VA06H-25	76.1 +	59.6	53.8	54.5	102 +	32 -	7	4	6	11
VA15H-110 WS	---	---	53.4	54.8	101	33	6	4	7	13
VA15H-141 WS	---	---	52.3	56.0	101	33	7 +	4	6	11
VA14H-3	---	56.5	52.1	55.5	96 -	31 -	4 -	2 -	11 +	15 +
VA15H-139 WS	---	---	51.6	55.3	100	33	7	4	5 -	11 -
VA15H-138 WS	---	---	51.6	55.5	100	33	7 +	5	6 -	12
VA15H-100 WS	---	---	51.3	54.3	101 +	34	7	6 +	7	11
VA14H-195 WS	---	64.1 +	50.5	54.6	99 -	33	7 +	5 +	6 -	12
Eve	59.7 -	50.4 -	49.6 -	54.9	95 -	31 -	5	4	9 +	16 +
VA15H-140 WS	---	---	49.6 -	54.8	101	33	7 +	4	6 -	11 -
VA06H-79	66.2	51.3 -	39.8 -	52.6 -	102 +	32 -	7 +	8 +	8 +	13
Doyce	61.0 -	47.0 -	32.6 -	45.8 -	98 -	31 -	7 +	6 +	10 +	16 +
VA08H-79 WS	52.3 -	38.3 -	32.2 -	52.0 -	104 +	32 -	7 +	9 +	5 -	9 -
Average	66.4	57.9	56.2	55.2	100	34	6	4	7	12
LSD (0.05)	4.9	4.8	6.4	1.0	1	2	1	1	1	2
C.V.	8.9	8.3	8.1	1.3	1	3	10	17	10	10

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

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

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

Table 7. Summary of performance of entries in the Virginia Tech Hulless Barley Test, Eastern Shore AREC, Painter, VA, 2017 harvest.

Hulless Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Leaf Rust (0-9)	
VA15H-119 WS	61.8	+	53.7		9	
VA14H-58	60.4	+	54.0		8	
VA15H-12	59.4		53.9		9	
VA15H-9	59.2		51.8		8	
Amaze 10	58.7		51.9		8	
VA15H-90 WS	57.8		54.7		8	
VA14H-33	56.6		51.9		8	-
VA15H-11	56.4		55.0	+	8	
VA14H-110	56.0		53.0		9	
VA15H-79 WS	54.3		49.7		8	
VA15H-118 WS	54.2		53.5		8	
VA15H-131 WS	52.6		52.1		8	
VA15H-139 WS	52.6		52.0		9	
Eve	51.8		48.9		9	
VA15H-140 WS	51.5		51.9		9	
VA14H-3	49.8		51.1		9	
VA15H-116 WS	49.0		52.0		9	
VA14H-195 WS	47.0		50.9		9	
VA15H-85 WS	46.8		52.8		9	
VA15H-110 WS	46.6		51.9		9	
VA15H-100 WS	45.6		47.3		8	
VA06H-25	44.4		51.8		8	
VA15H-138 WS	43.8		51.0		9	
VA15H-111 WS	42.6		54.3		9	
VA15H-73 (2R)	41.8		52.2		9	
VA15H-141 WS	41.6		51.8		9	
Doyce	39.1		38.1	-	9	
VA07H-35 WS	38.2		50.3		8	
VA06H-79	29.4	-	44.5	-	9	
VA08H-79 WS	27.7	-	41.2	-	9	
Average	49.2		51.0		8	
LSD (0.05)	11.2		3.9		1	
C.V.	15.6		5.4		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.

Note: this location was severely affected by stripe rust and leaf rust, reducing yields.

Table 8. Summary of performance of entries in the Virginia Tech Hulless Barley Test, Northern Piedmont Center, Orange, VA, 2017 harvest.

Hulless Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Mature Height (In)		Plant Lodging (0-9)		Net Blotch (0-9)	
VA14H-58	83.1	+	56.5		28		0		3	-
VA08H-79 WS	79.2	+	56.8		30		2		4	
VA06H-79	75.2		55.1		26	-	0		3	-
VA15H-9	74.6		53.4	-	30		1		4	
VA15H-11	74.1		55.1		28		1		3	-
VA14H-33	74.1		54.7		28		2		5	
VA15H-138 WS	72.7		58.2	+	28		0		4	
VA15H-111 WS	71.7		56.8		31	+	1		7	+
VA15H-141 WS	70.9		58.2	+	28		1		4	
VA15H-119 WS	69.9		56.7		28		1		6	
VA15H-118 WS	69.8		57.9	+	28		0		4	
VA15H-12	69.4		56.7		28		0		3	-
VA15H-73 (2R)	68.8		56.5		28		0		6	+
VA15H-85 WS	68.0		56.5		31	+	2		5	
VA15H-140 WS	67.0		57.8	+	28		1		5	
VA15H-90 WS	67.0		57.3		30		0		5	
VA15H-100 WS	66.6		56.4		29		1		5	
VA06H-25	66.3		56.4		27		2		4	-
VA15H-139 WS	65.5		58.6	+	30		1		5	
VA15H-110 WS	65.0		56.3		30		0		7	+
VA14H-195 WS	63.1		57.8	+	29		3	+	4	
VA15H-116 WS	61.5		56.7		31	+	0		6	
VA14H-110	60.6		54.9		27		1		3	-
Eve	60.6		54.9		28		2		8	+
VA07H-35 WS	60.2		56.6		27		3		4	-
VA15H-79 WS	60.2		52.0	-	29		3		5	
VA15H-131 WS	58.5		55.3		27		2		4	
Amaze 10	58.3		56.5		28		2		4	
VA14H-3	56.4		56.4		29		1		2	-
Doyce	48.4	-	48.5	-	27		2		8	+
Average	66.9		56.0		28		1		5	
LSD (0.05)	10.6		1.4		2		2		1	
C.V.	11.2		1.7		5		122		17	

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 9. Summary of performance of entries in the Virginia Tech Hulless Barley Test, Kentland Farm, Blacksburg, VA, 2017 harvest.

Hulless Lines	3-year Av. Yield (Bu/a)		2-year Av. Yield (Bu/a)		Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Date Headed (Julian)		Mature Height (In)		Plant Lodging (0-9)		Leaf Rust (0-9)		Net Blotch (0-9)	
VA14H-58	---		84.5	+	101.3	+	57.3	+	109		36		2		5		7	
VA15H-12	---		---		100.8	+	56.2		110		36		1		4	-	7	
VA15H-11	---		---		95.8	+	56.3		110		35		1		4	-	6	
VA14H-33	---		81.0	+	94.3	+	56.8	+	109	-	34		0		5		5	
VA15H-79 WS	---		---		92.7	+	56.0		108	-	34		0		5		5	
VA14H-195 WS	---		83.4	+	91.3		55.3		109	-	36		3	+	6		6	
VA15H-90 WS	---		---		88.6		57.1	+	110		35		3		4		7	
VA07H-35 WS	79.6	+	68.3		88.3		55.0	-	112	+	35		1		5		6	
VA15H-9	---		---		87.0		56.0		110		34		0		4	-	8	+
VA15H-138 WS	---		---		85.0		55.6		111		34		2		7	+	6	
VA06H-25	78.7	+	69.1		84.7		55.0		112	+	35		1		5		6	
VA14H-3	---		76.7	+	84.6		58.3	+	106	-	34		1		4	-	8	+
VA14H-110	---		73.8		84.2		56.7		108	-	37	+	0		6		5	
VA06H-79	78.7	+	74.6		83.6		54.8	-	111		35		1		8	+	5	-
VA15H-85 WS	---		---		82.3		57.2	+	111	+	37	+	1		5		7	
VA15H-118 WS	---		---		81.8		56.3		112	+	36		0		6		6	
VA15H-119 WS	---		---		81.3		56.1		111		36		1		5		6	
VA15H-73 (2R)	---		---		81.0		54.7	-	110		36		1		7		6	
VA15H-139 WS	---		---		80.4		55.2		110		34		2		7		5	
VA15H-110 WS	---		---		80.2		56.1		111	+	35		1		5		7	
VA15H-111 WS	---		---		80.0		56.5		111		33		1		5		7	
VA15H-141 WS	---		---		79.4		55.5		111		33		1		7		5	
VA15H-131 WS	---		---		79.0		55.5		110		35		1		6		5	
Amaze 10	75.6		65.2	-	78.6		54.8	-	112	+	34		0		6		5	
Doyce	67.4	-	59.3	-	76.4		54.6	-	109	-	33	-	2		4	-	8	+
VA15H-140 WS	---		---		76.2		55.0	-	111		32	-	1		7		5	
VA15H-100 WS	---		---		75.9		56.6		111		35		0		8	+	5	
VA15H-116 WS	---		---		73.8	-	55.4		112	+	36		1		5		6	
Eve	68.9	-	60.5	-	73.1	-	56.6		105	-	32	-	1		5		9	+
VA08H-79 WS	72.8		63.9	-	63.5	-	53.4	-	113	+	32	-	1		8	+	5	
Average	74.5		71.7		83.5		55.8		110		35		1		5		6	
LSD (0.05)	3.7		4.5		8.6		0.9		1		2		2		1		1	
C.V.	5.9		6.2		7.3		1.1		1		4		156		18		16	

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

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

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

Table 10. Summary of performance of barley entries in the Virginia Tech Barley Test, 2017 harvest.

Barley Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Date Headed (Julian)		Mature Height (In)		Plant Lodging (0-9)		Leaf Rust (0-9)		Net Blotch (0-9)		Powdery Mildew (0-9)		Awns[1]
	(4)		(4)		(2)		(2)		(5)		(3)		(1)		(1)		
VA14B-79	104.6	+	41.8		104		33		3		3	-	3		0		SA
VA14B-63	102.9	+	43.1	+	105	+	33		3	-	3	-	4		1		SA
VA14B-74	100.0	+	42.1		106	+	34		3		3	-	3		0		SA
Secretariat	99.1	+	43.4	+	102	-	32	-	4		1	-	3		0		SA
VA15B-79	98.8	+	43.4	+	103		34		3		3	-	3		0		SA
VA14B-57	97.5	+	43.0	+	104		34		3		3	-	3		0		SA
Thoroughbred	95.7		41.0	-	107	+	33		3		8	+	7	+	5	+	LA
VA14B-78	95.6		42.9	+	102	-	34		3		3	-	3		1		SA
VA13B-25 LA	95.6		42.9	+	101	-	32		4		3	-	4		0		LA
VA14B-75	95.6		41.6		104		32		3		2	-	3		0		SA
VA15B-33	95.4		44.0	+	104		30	-	2	-	3	-	3		0		SA
VA15B-5	95.0		43.1	+	104		32		2	-	2	-	3		0		SA
VA12B-30	94.6		41.8		108	+	34		4		6	+	3		0		SA
VA15B-8	94.0		41.6		103		33		4		2	-	4		2		SA
VA12B-8 LA	94.0		41.2	-	105	+	36	+	3		6	+	7	+	1		LA
VA15B-78	93.9		45.1	+	105	+	35	+	3		5	+	4		0		SA
VA14B-59	93.7		41.4	-	103		32		3		3	-	2	-	0		SA
VA12B-41	92.9		42.1		105	+	34		4		3	-	3		0		SA
VA14B-73	92.8		42.5		103		34		3		3	-	3		0		SA
VA15B-89 (LA)	92.7		41.8		106	+	34		3		7	+	6	+	2	+	LA
VA11B-141 LA	92.6		43.9	+	105	+	36	+	3		4		4		0		LA
VA12B-56	92.5		41.2	-	101	-	30	-	3		6	+	4		0		SA
VA14BFHB-83	92.5		43.2	+	103		34		4		2	-	3		0		SA
Atlantic	91.6		41.5	-	101	-	31	-	3		6	+	4		1		SA
VA15B-98 (LA)	91.0		41.9		104		33		3		7	+	7	+	0		LA
VA11B-102 LA	91.0		40.7	-	106	+	35	+	3		3	-	3		0		LA
VA15B-65	90.7		41.5		101	-	34		4	+	6	+	4		0		SA
VA08B-95	89.9		41.6		102	-	33		5	+	3	-	3		8	+	SA
VA15B-60	89.8		41.9		101	-	30	-	3		6	+	5		0		SA
VA14B-71	87.8		43.4	+	103	-	33		4	+	3	-	3		0		SA
Flavia	86.7		43.3	+	111	+	26	-	2	-	4		5		1		2R,LA
VA15B-54	86.5		42.3		104		33		4	+	5		3		0		SA
Price	84.5	-	42.0		102	-	31	-	3		5	+	7	+	0		SA
VA15B-83 (LA)	83.9	-	42.0		101	-	33		5	+	6	+	5	+	0		LA
Violetta	83.6	-	44.0	+	107	+	29	-	2	-	3	-	4		1		2R, LA
Callao	82.0	-	40.2	-	101	-	29	-	6	+	5	+	4		0		SA
VA15B-67	81.9	-	41.1	-	102	-	33		4	+	6	+	3		0		SA
Nomini	75.1	-	39.9	-	101	-	39	+	3		6	+	1	-	0		AL
Barsoy	75.1	-	40.3	-	101	-	33		4		8	+	4		0		LA
Wysor	72.7	-	39.3	-	102	-	40	+	4		8	+	4		0		AL

Table 10. Summary of performance of barley entries in the Virginia Tech Barley Test, 2017 harvest.

Barley Lines	Yield (Bu/a @ 48 lb/bu)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Leaf Rust (0-9)	Net Blotch (0-9)	Powdery Mildew (0-9)	Awns[1]
	(4)	(4)	(2)	(2)	(5)	(3)	(1)	(1)	
VA92-42-46	69.2 -	40.2 -	103 -	39 +	3	1 -	8 +	0	AL
Average	90.6	42.1	104	33	3	4	4	1	
LSD (0.05)	5.7	0.6	1	1	1	1	1	1	
C.V.	9.0	1.9	1	4	37	23	26	156	

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] LA=long awned, SA=short awned, AL=awnletted or awnless.

Table 11. Two-year average summary of performance of hulled entries in the Virginia Tech Barley Tests, 2016 and 2017 harvests.

Barley Lines	Yield (Bu/a @ 48 lb/bu)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Leaf Rust (0-9)	Net Blotch (0-9)	Powdery Mildew (0-9)	BYD Virus[1] (0-9)	Winter Survival (%)
	(8)	(8)	(4)	(4)	(9)	(4)	(4)	(3)	(1)	(1)
VA14B-79	100.4 +	42.8	107	32 -	3	3 -	3	0 -	0	95
VA14B-63	98.8 +	43.5 +	108 +	33	3 -	3 -	2 -	0	0	94
VA14B-74	98.7 +	43.0	109 +	33	3 -	2 -	2 -	0 -	0	95
Secretariat	97.6 +	44.5 +	105 -	31 -	3	1 -	3	0	0	95
VA14B-57	96.1 +	44.0 +	107	33	3	3	2 -	0 -	0	94
VA14B-59	95.4 +	42.4	107	32 -	3	2 -	2 -	0 -	0	93 -
VA14B-75	94.2 +	42.6	107	32	3	2 -	2 -	0 -	0	96
VA14B-73	93.5 +	43.1	107	33	3	3 -	2 -	0 -	0	95
VA14B-78	93.3 +	43.5 +	105 -	33	3	3 -	3	0	0	96
VA12B-41	92.6	42.9	108 +	32	3	3 -	3	0 -	0	96
VA13B-25 LA	92.4	44.0 +	105 -	32	4 +	3	3 -	0 -	0	98
VA11B-102 LA	91.9	41.6 -	109 +	35 +	4	3 -	3 -	0 -	0	99
VA12B-30	91.9	42.5	110 +	33	3	5 +	3	0 -	0	97
VA12B-56	91.7	42.1	104 -	30 -	3	5 +	3	0 -	0	96
VA12B-8 LA	90.9	42.7	108 +	35 +	3	6 +	6 +	1	0	97
VA14BFHB-83	90.7	43.9 +	106	33	4 +	2 -	3	0 -	0	96
Thoroughbred	90.4	42.6	110 +	32	3 -	7 +	6 +	5 +	0	99
VA11B-141 LA	90.0	44.6 +	109 +	35 +	3	3	3	0 -	1 +	99
Atlantic	89.7	42.9	104 -	31 -	4	6 +	4	0	0	95
VA14B-71	89.1	44.2 +	106	33	4 +	2 -	2 -	0 -	0	98
VA08B-95	88.5	42.2	105 -	32	4 +	2 -	3	8 +	0	96
Callao	82.3 -	42.2	104 -	29 -	5 +	5 +	3	0 -	0	94
Price	79.4 -	43.2	105 -	31 -	3	5 +	7 +	1	0	95
Violetta	78.6 -	44.3 +	110 +	27 -	2 -	3 -	3 -	0	2 +	99
Barsoy	73.6 -	41.6 -	104 -	33	3	8 +	4	1	3 +	98
Nomini	73.6 -	39.4 -	104 -	37 +	3	6 +	3	0 -	0	98
Wysor	65.7 -	38.6 -	106 -	37 +	3	7 +	4 +	0 -	0	99
VA92-42-46	63.5 -	40.6 -	105 -	36 +	3	1 -	8 +	0 -	0	97
Average	88.4	42.7	107	33	3	4	3	1	0	96
LSD (0.05)	4.3	0.7	1	1	1	1	1	1	1	3
C.V.	9.4	3.4	1	4	36	24	29	105	234	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.

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

[1] BYD = Barley Yellow Dwarf Virus.

Table 12. Three-year average summary of performance of hulled entries in the Virginia Tech Barley Tests, 2015, 2016, and 2017 harvests.

Barley Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Date Headed (Julian)		Mature Height (In)		Plant Lodging (0-9)		Leaf Rust (0-9)		Net Blotch (0-9)		Powdery Mildew (0-9)		Winter Survival (%)	
	(14)		(14)		(6)		(7)		(15)		(5)		(7)		(4)		(2)	
Secretariat	101.0	+	46.2	+	108	-	31	-	4	+	1	-	2	-	0	-	95	
VA12B-30	97.7	+	44.8		113	+	35	+	3		5	+	3		0	-	97	
VA12B-8 LA	96.5	+	44.9		110	+	35	+	3	-	6	+	4	+	1		98	
Thoroughbred	96.1	+	45.2		112	+	33		3		7	+	4	+	5	+	99	
VA12B-41	95.6	+	44.4		110	+	33		4		3	-	2	-	0	-	96	
VA12B-56	95.1	+	44.8		107	-	30	-	3		5		2	-	0	-	95	
VA11B-102 LA	95.1	+	43.3	-	112	+	35	+	4	+	3	-	2	-	0	-	99	
Atlantic	94.0	+	45.1		106	-	30	-	4	+	5	+	3		0	-	96	
VA13B-25 LA	93.3	+	46.5	+	107	-	33		4		4	-	2	-	0	-	96	
VA11B-141 LA	93.0	+	46.8	+	111	+	35	+	3	-	3	-	2	-	0	-	98	
VA08B-95	90.8		44.4		107	-	32	-	4	+	2	-	2	-	8	+	96	
Price	87.1		45.1		108	-	31	-	3		6	+	5	+	0		94	-
Callao	84.8		44.9		106	-	29	-	6	+	5	+	2		0	-	94	
Violetta	82.3	-	45.9	+	113	+	28	-	2	-	2	-	2	-	0	-	97	
Barsoy	79.9	-	44.2		107	-	33		4		8	+	3		0	-	97	
Nomini	75.9	-	41.0	-	106	-	37	+	3	-	6	+	2	-	0	-	98	
Wysor	70.0	-	40.6	-	108	-	37	+	3		8	+	3		0	-	99	
VA92-42-46	66.8	-	42.4	-	108	-	37	+	3	-	1	-	7	+	0	-	97	
Average	88.6		44.5		109		33		4		4		3		1		97	
LSD (0.05)	3.9		0.7		0		1		0		1		1		0		2	
C.V.	11.1		4.3		1		4		33		20		38		76		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.

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

Table 13. Summary of performance of barley entries in the Virginia Tech Barley Test, Southern Piedmont AREC, Blackstone, VA, 2017 harvest.

Barley Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Plant Lodging (0-9)		Powdery Mildew (0-9)	
Thoroughbred	100.3	+	40.0		5		5	+
VA14B-63	98.0		42.1	+	5		1	
VA15B-78	97.7		43.7	+	7		0	
VA14B-79	96.9		40.4		4		0	
Secretariat	96.6		40.9		7		0	
VA12B-56	94.4		39.9		6		0	
VA15B-98 (LA)	94.3		40.8		5		0	
VA14B-74	94.0		41.2		5		0	
Flavia	93.4		42.2	+	5		1	
VA15B-79	92.8		42.2	+	4		0	
VA14B-57	92.5		41.1		5		0	
VA15B-89 (LA)	92.3		41.4		5		2	+
VA14B-75	91.9		40.2		5		0	
VA12B-30	91.8		41.7		6		0	
VA14B-78	91.4		42.1	+	5		1	
VA15B-33	91.3		43.9	+	3	-	0	
Atlantic	90.5		40.3		5		1	
VA11B-141 LA	90.5		42.5	+	4		0	
VA15B-5	90.3		41.7		3	-	0	
VA12B-8 LA	89.8		40.2		5		1	
VA15B-65	89.2		40.2		7		0	
VA13B-25 LA	87.9		40.3		6		0	
VA14B-59	86.7		40.4		4		0	
VA14B-73	86.3		41.9		5		0	
VA14BFHB-83	85.6		40.7		8	+	0	
VA12B-41	85.0		40.6		7		0	
Nomini	83.3		39.2	-	5		0	
Barsoy	82.8		38.8	-	5		0	
VA15B-67	82.3		40.5		6		0	
Price	82.3		40.6		4		0	
VA15B-60	81.6		41.8		5		0	
Wysor	80.3		37.7	-	7		0	
VA15B-54	79.9		40.4		8	+	0	
VA11B-102 LA	79.6		38.5	-	6		0	
VA15B-8	79.0		40.2		7		2	
Violetta	77.5		42.1	+	4		1	
VA14B-71	75.6		41.8		7		0	
VA92-42-46	74.8	-	38.2	-	6		0	
VA08B-95	74.7	-	39.8		8	+	8	+
Callao	73.1	-	39.0	-	8	+	0	
VA15B-83 (LA)	72.1	-	41.5		7		0	

Table 13. Summary of performance of barley entries in the Virginia Tech Barley Test, Southern Piedmont AREC, Blackstone, VA, 2017 harvest.

Barley Lines	Yield (Bu/a @ 48 lb/bu)	Test Weight (Lb/bu)	Plant Lodging (0-9)	Powdery Mildew (0-9)
Average	87.1	40.8	5	1
LSD (0.05)	11.8	1.2	2	1
C.V.	9.5	2.1	26	156

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 barley entries in the Virginia Tech Barley Test, planted no-till at the Tidewater AREC, Holland, VA, 2017 harvest.

Barley Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Plant Lodging (0-9)		Leaf Rust (0-9)	
Flavia	78.8	+	42.7	+	3	-	4	
Thoroughbred	76.1	+	39.5	-	4		8	+
VA12B-30	75.4		40.1		4		6	+
VA14B-74	75.1		40.1		4		2	-
VA12B-8 LA	74.4		40.1		4		6	+
VA12B-56	73.6		40.5		4		6	+
VA15B-89 (LA)	73.3		40.7		5		6	+
VA14B-57	72.0		41.4		4		3	
VA15B-78	71.7		42.7	+	4		3	
VA08B-95	71.7		39.8	-	5		2	-
VA14B-79	71.4		39.4	-	4		3	
VA14B-63	71.0		41.5		4		2	-
VA14BFHB-83	70.9		41.1		4		2	-
VA15B-79	70.8		40.8		5		2	-
Violetta	70.7		42.9	+	4		3	
VA14B-73	70.5		40.6		4		2	-
VA15B-8	70.3		40.2		4		2	-
VA13B-25 LA	70.2		41.9	+	4		3	
VA15B-60	70.1		41.1		3	-	7	+
VA15B-67	70.1		40.4		5		5	
VA15B-98 (LA)	70.0		40.9		4		7	+
VA14B-78	70.0		41.3		4		3	-
VA15B-54	69.9		42.2	+	4		5	
Price	69.9		40.4		4		5	
Atlantic	68.8		40.3		5		6	+
VA14B-75	68.1		40.0		5		3	-
VA14B-71	67.0		40.9		4		2	-
VA15B-33	66.6		41.9	+	3	-	3	-
VA15B-65	66.3		40.5		4		7	+
VA14B-59	66.2		39.3	-	4		2	-
Secretariat	66.0		41.3		5		1	-
Callao	65.7		40.4		5	+	5	
VA11B-102 LA	64.7		39.3	-	5		3	-
VA12B-41	64.1		39.5	-	5		3	
VA11B-141 LA	63.7		43.0	+	4		4	
VA15B-5	62.2		41.6	+	4		2	-
Barsoy	61.1		40.3		4		8	+
Nomini	56.7	-	38.8	-	4		7	+
Wysor	56.3	-	38.7	-	5		7	+
VA15B-83 (LA)	54.6	-	42.5	+	5		7	+
VA92-42-46	48.3	-	38.9	-	4		1	-

Table 14. Summary of performance of barley entries in the Virginia Tech Barley Test, planted no-till at the Tidewater AREC, Holland, VA, 2017 harvest.

Barley Lines	Yield (Bu/a @ 48 lb/bu)	Test Weight (Lb/bu)	Plant Lodging (0-9)	Leaf Rust (0-9)
Average	68.2	40.7	4	4
LSD (0.05)	7.9	0.8	1	1
C.V.	8.1	1.5	15	25

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 15. Summary of performance of barley entries in the Virginia Tech Barley Test, Eastern Virginia AREC, Warsaw, VA, 2017 harvest.

Barley Lines	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Yield (Bu/a @ 48 lb/bu)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Leaf Rust (0-9)	Early Height 1 (In)	Early Height 2 (In)
VA14B-74	---	103.1 +	98.6 +	42.3 +	102 +	35 +	4	3 -	7	12
Secretariat	108.6 +	98.0 +	96.2 +	44.3 +	98 -	31 -	4	1 -	8	13
VA14B-79	---	101.7 +	92.6 +	41.6	100	32	4	3 -	7	13
VA15B-79	---	---	92.0 +	43.2 +	100	34 +	4 -	4 -	7	13
VA15B-78	---	---	88.7 +	45.0 +	101 +	36 +	4 -	5	7	12
VA14B-63	---	96.9 +	88.4 +	44.1 +	101 +	33	4	3 -	7	11
Violetta	93.1	80.5	84.8 +	46.1 +	104 +	27 -	4	4 -	5 -	9 -
Flavia	---	---	83.7 +	43.9 +	107 +	24 -	3 -	4	5 -	8 -
VA15B-5	---	---	83.5 +	43.2 +	99	32	4 -	2 -	7	11 -
VA13B-25 LA	103.1 +	89.6	82.9	43.1 +	97 -	31	5	4	7	14
VA14B-57	---	93.1 +	82.0	42.9 +	99	34 +	5	4	7	12
VA14BFHB-83	---	89.2	81.6	43.7 +	99	33	5	2 -	7	14
VA15B-8	---	---	81.5	42.1	99	31	5	2 -	8	13
VA14B-78	---	93.8 +	81.3	42.7 +	98 -	33	4	4 -	8	14
VA11B-141 LA	97.7	87.0	80.7	44.7 +	101 +	35 +	4 -	4 -	6	13
VA14B-73	---	92.2 +	80.4	41.9	99	32	4	4 -	8	14
VA12B-41	101.8 +	90.5	79.1	41.0	101 +	34 +	5	4	6	11 -
VA14B-59	---	91.6 +	78.9	41.0	99	31 -	5	4	8	14
VA08B-95	96.1	88.1	78.2	40.8	98 -	32	5	4 -	7	13
VA14B-75	---	88.7	77.9	41.4	100	32	5	3 -	7	13
VA14B-71	---	88.8	76.1	42.7 +	99	32	4	3 -	7	13
VA15B-33	---	---	75.4	42.5 +	100	29 -	2 -	4	8	14
VA11B-102 LA	101.0 +	87.6	74.9	40.9	102 +	33	4	3 -	6	10 -
VA12B-56	96.3	80.6	67.3	39.3 -	97 -	29 -	5	6 +	8	14
VA15B-89 (LA)	---	---	66.6	40.8	102 +	33	5	6 +	9	15
VA12B-30	102.2 +	86.0	64.8	39.8 -	104 +	33	5	6 +	6 -	9 -
VA12B-8 LA	94.6	81.1	64.4	39.3 -	101 +	34 +	4	7 +	7	14
Price	90.8	74.6 -	62.8	40.3	98 -	31	6	6 +	7	13
VA15B-65	---	---	61.8 -	39.4 -	97 -	33	6 +	7 +	8	14

Table 15. Summary of performance of barley entries in the Virginia Tech Barley Test, Eastern Virginia AREC, Warsaw, VA, 2017 harvest.

Barley Lines	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Yield (Bu/a @ 48 lb/bu)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Leaf Rust (0-9)	Early Height 1 (In)	Early Height 2 (In)
VA15B-83 (LA)	---	---	61.6 -	39.3 -	97 -	30 -	7 +	7 +	8	13
VA15B-54	---	---	61.1 -	40.0 -	100	33	6 +	6 +	6 -	12
Atlantic	96.8	81.8	60.9 -	39.3 -	98 -	30 -	6	6 +	8	13
Callao	89.4	75.5 -	59.9 -	37.8 -	97 -	28 -	7 +	6 +	8	13
VA15B-98 (LA)	---	---	59.2 -	40.3	100	32	6	8 +	7	13
VA15B-60	---	---	58.6 -	39.3 -	97 -	29 -	5	6 +	7	13
Wysor	85.2 -	69.3 -	57.7 -	37.0 -	97 -	39 +	6 +	8 +	7	14
Thoroughbred	91.7	76.6 -	57.6 -	39.0 -	102 +	31	5	8 +	8	13
Nomini	81.9 -	68.3 -	55.3 -	37.0 -	97 -	38 +	5	7 +	9	16 +
VA92-42-46	72.9 -	59.2 -	53.7 -	39.9 -	97 -	38 +	6	1 -	8	15 +
Barsoy	82.7 -	62.9 -	53.4 -	39.5 -	97 -	32	6 +	8 +	8	15 +
VA15B-67	---	---	52.1 -	37.5 -	97 -	31	6 +	7 +	9 +	15 +
Average	93.7	84.9	73.1	41.2	99	32	5	5	7	13
LSD (0.05)	5.7	6.5	10.4	1.0	1	1	1	1	1	2
C.V.	7.5	7.7	10.1	1.7	1	3	13	15	14	10

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.

Note: this location was severely affected by stripe rust and leaf rust, reducing yields.

Table 16. Summary of performance of barley entries in the Virginia Tech Barley Test, Eastern Shore AREC, Painter, VA, 2017 harvest.

Barley Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Leaf Rust (0-9)	
Violetta	80.1	+	40.6	+	6	-
VA13B-25 LA	75.9	+	40.0	+	8	
VA14B-78	71.3		39.0	+	8	
VA11B-102 LA	70.8		36.7		6	-
VA14B-71	70.7		38.4	+	8	
VA14B-73	70.6		36.9		8	
VA15B-78	70.3		41.0	+	8	
VA11B-141 LA	70.0		40.9	+	6	-
VA14B-74	69.9		37.2		8	
VA14B-79	69.7		37.4		7	
VA14B-63	69.5		37.7		8	
VA15B-79	68.9		39.4	+	8	
VA15B-8	68.6		38.1		8	
VA14BFHB-83	66.4		39.9	+	4	-
VA12B-56	65.3		35.9		9	+
Flavia	64.6		39.0	+	7	-
VA08B-95	64.4		37.3		7	-
VA15B-5	64.1		40.6	+	5	-
Atlantic	63.0		36.0		8	
VA12B-8 LA	60.3		34.0	-	9	+
VA14B-59	59.8		36.9		8	
Secretariat	59.6		41.4	+	2	-
Price	58.8		37.5		9	+
VA14B-57	56.1		35.9		9	+
VA14B-75	54.9		37.4		8	
VA15B-89 (LA)	52.9		35.0	-	9	+
VA12B-41	51.6		36.3		8	
VA15B-67	51.0		33.5	-	9	+
VA15B-83 (LA)	49.9		35.3	-	9	+
VA15B-33	49.7		37.7		9	+
VA15B-98 (LA)	48.3		34.2	-	9	+
Callao	47.1		32.9	-	9	+
Barsoy	45.9		33.3	-	9	+
VA15B-60	45.8		34.4	-	9	+
VA12B-30	44.9		34.7	-	9	+
Thoroughbred	41.1	-	34.2	-	9	+
VA15B-65	40.9	-	35.7	-	9	+
VA15B-54	40.1	-	34.3	-	9	+
VA92-42-46	---		---		5	-
Nomini	---		---		8	
Wysor	---		---		9	+

Table 16. Summary of performance of barley entries in the Virginia Tech Barley Test, Eastern Shore AREC, Painter, VA, 2017 harvest.

Barley Lines	Yield (Bu/a @ 48 lb/bu)	Test Weight (Lb/bu)	Leaf Rust (0-9)
Average	59.8	37.0	8
LSD (0.05)	15.1	1.3	1
C.V.	17.5	2.5	7

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

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

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

Note: this location was severely affected by stripe rust and leaf rust, reducing yields.

The awnless lines Wysor, Nomini, and VA92-42-46 were selectively grazed by deer.

Table 17. Summary of performance of barley entries in the Virginia Tech Barley Test, Northern Piedmont Center, Orange, VA, 2017 harvest.

Barley Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Plant Lodging (0-9)	
Thoroughbred	111.4	+	41.9		0	
VA12B-30	108.8	+	42.4		1	
VA15B-60	103.8	+	41.9		0	
VA08B-95	101.8		42.0		4	+
VA12B-8 LA	101.0		40.7	-	0	
VA14B-57	100.6		43.4	+	1	
VA15B-98 (LA)	99.3		42.1		0	
VA14B-63	98.7		42.5		0	
Atlantic	97.1		42.7		1	
VA15B-79	96.9		42.6		1	
VA14B-79	96.7		41.2		1	
VA15B-65	96.3		41.6		2	
VA15B-33	96.2		42.9		0	
VA15B-89 (LA)	96.1		41.0		0	
VA13B-25 LA	95.0		42.9		3	+
VA11B-102 LA	95.0		40.3	-	1	
Callao	94.5		41.3		4	+
VA15B-78	94.3		44.9	+	0	
VA15B-54	93.9		43.7	+	1	
VA14B-75	93.8		41.5		1	
VA15B-8	92.5		41.5		1	
VA14BFHB-83	90.2		42.5		1	
VA14B-73	89.9		42.6		1	
VA14B-78	88.7		42.5		0	
VA15B-5	88.4		43.0		1	
VA14B-71	88.0		43.3	+	3	+
VA12B-41	87.9		42.8		1	
VA12B-56	87.3		41.1		1	
VA15B-83 (LA)	86.2		41.8		4	+
Secretariat	86.1		43.5	+	3	
VA15B-67	85.3		42.2		2	
VA11B-141 LA	83.3		42.8		1	
Price	83.0		42.9		0	
Flavia	82.9		42.8		1	
VA14B-59	82.4		40.9	-	1	
VA14B-74	81.3		41.6		0	
Violetta	79.6		43.1		0	
Barsoy	73.1	-	40.5	-	1	
Wysor	66.5	-	39.1	-	2	
VA92-42-46	65.6	-	39.3	-	2	
Nomini	64.8	-	39.8	-	1	

Table 17. Summary of performance of barley entries in the Virginia Tech Barley Test, Northern Piedmont Center, Orange, VA, 2017 harvest.

Barley Lines	Yield (Bu/a @ 48 lb/bu)	Test Weight (Lb/bu)	Plant Lodging (0-9)
Average	90.3	42.0	1
LSD (0.05)	12.9	1.1	1
C.V.	9.9	1.9	98

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 barley entries in the Virginia Tech Barley Test, Kentland Farm, Blacksburg,VA, 2017 harvest.

Barley Lines	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Yield (Bu/a @ 48 lb/bu)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Leaf Rust (0-9)	Net Blotch (0-9)
VA14B-79	---	122.6 +	132.2 +	43.8	108	33	1	3	3
VA14B-59	---	122.1 +	126.7 +	43.4	108	33	0	2 -	2 -
VA14B-63	---	119.5 +	126.5 +	43.7	109	34	0	3	4
VA14B-74	---	124.6 +	126.0 +	43.2	111 +	33	0	3	3
VA15B-8	---	---	123.1	42.7 -	108	36	2	3	4
VA14B-78	---	112.7	121.2	44.3	107 -	35	0	3	3
VA12B-8 LA	115.5	110.6	120.8	44.5	108	38 +	1	7 +	7 +
VA12B-56	119.4 +	116.3 +	119.8	44.4	105 -	31 -	1	5	4
VA12B-41	117.6 +	112.9	119.6	43.9	109 +	33	1	3	3
VA15B-54	---	---	119.4	45.8 +	108	34	2	4	3
VA15B-33	---	---	118.5	47.0 +	108	31 -	0	4	3
VA14B-75	---	117.0 +	118.2	43.4	108	33	2	2 -	3
VA15B-5	---	---	118.0	44.6	108	33	0	2 -	3
Atlantic	115.9	109.1	118.0	43.6	105 -	32 -	1	6 +	4
Secretariat	124.5 +	116.5 +	117.7	44.8	107 -	33	2	2 -	3
VA13B-25 LA	118.9 +	118.0 +	116.8	45.3	105 -	33	0	3	4
VA15B-67	---	---	116.8	45.3	106 -	34	2	6 +	3
VA15B-89 (LA)	---	---	115.9	44.1	111 +	35	0	8 +	6 +
VA11B-141 LA	116.3 +	111.7	115.9	45.8 +	109 +	38 +	0	4	4
VA14B-57	---	113.1	115.8	44.6	108	33	2	3	3
VA15B-65	---	---	115.4	45.0	105 -	35	2	4	4
VA15B-60	---	---	115.1	44.6	105 -	32 -	1	4	5
VA14B-73	---	111.4	114.6	43.8	108	35	2	3	3
VA11B-102 LA	120.1 +	112.5	114.5	43.3	110 +	37 +	2	3	3
Thoroughbred	116.3 +	107.0	113.7	43.3	111 +	35	0	7 +	7 +
VA15B-79	---	---	113.3	45.6 +	107	33	0	3	3
VA12B-30	114.0	102.3	113.1	43.3	113 +	35	2	6 +	3
VA15B-83 (LA)	---	---	112.8	45.6 +	105 -	35	2	6 +	5 +
VA14BFHB-83	---	111.1	112.7	45.9 +	108	36	4	2 -	3
VA14B-71	---	114.4	111.6	45.9 +	107	34	2	3	3
VA15B-98 (LA)	---	---	111.2	44.3	108	34	2	7 +	7 +
Price	99.0 -	90.7 -	109.9	44.4	107	32 -	0	4	7 +
VA08B-95	117.3 +	109.3	108.0	43.8	106 -	34	2	3	3
Callao	106.8	102.1	100.5 -	42.7 -	105 -	29 -	5 +	5	4
Nomini	103.4 -	97.2 -	97.2 -	43.7	105 -	40 +	0	5	1 -
VA15B-78	---	---	95.1 -	46.6 +	110 +	34	2	7 +	4
Violetta	95.6 -	90.8 -	91.0 -	44.4	109 +	31 -	0	2 -	4
Barsoy	91.6 -	86.7 -	90.9 -	42.4 -	106 -	34	3	8 +	4
Flavia	---	---	90.1 -	43.7	115 +	29 -	0	4	5
VA92-42-46	98.7 -	81.9 -	81.9 -	43.5	108	39 +	0	1 -	8 +
Wysor	93.7 -	80.9 -	80.9 -	42.8 -	107	41 +	0	8 +	4

Table 18. Summary of performance of barley entries in the Virginia Tech Barley Test, Kentland Farm, Blacksburg,VA, 2017 harvest.

Barley Lines	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Yield (Bu/a @ 48 lb/bu)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Leaf Rust (0-9)	Net Blotch (0-9)
Average	110.3	108.0	112.2	44.3	108	34	1	4	4
LSD (0.05)	6.0	7.8	11.3	1.2	1	2	3	2	1
C.V.	6.4	6.9	7.1	1.9	1	4	174	28	26

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 at the Virginia Crop Improvement Association (VCIA) test site in Mt. Holly, VA. 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. 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.

In 2017, entries were inoculated by spreading scabby corn kernels (50g/4-rows) in plots at the booting stage. A moderately low level of FHB infection was obtained in 2017 as an unseasonably warm February was followed by a drastic cold spell during the inoculation period. Among 31 hulless lines and varieties tested in 2017, the FHB index ranged from 1.4 to 25 with FHB incidence ranging from 52% to 94% and FHB severity from 2% to 26% (Table 19). Thirteen lines and two varieties had FHB index values lower than the mean (<13.4) in 2017 (Table 19). One line, VA15H-73 (2R) had FHB incidence, severity and index values significantly lower than the test mean.

Among 41 barley lines and varieties tested in 2017, the FHB index varied from 1.2 to 25.4 with FHB incidence ranging from 45% to 100% and FHB Severity from 2% to 27% (Table 20). Fourteen lines and eight varieties had FHB index values lower than the mean (<11.5) in 2017 (Table 20). Two elite malt barley varieties, Violetta and Flavia, developed in Europe, are currently being recommended for production in the mid-Atlantic and the eastern United States. They both had FHB incidence, severity and index values significantly lower than the test mean.

Table 19. Summary of reaction of entries in the Virginia Tech State Hulless Barley Test to Fusarium head blight (scab), 2017 harvest.

Line	FHB Incidence[1] (%)		FHB Severity[2] (%)		FHB Index[3] (0-100)		Rank FHB Index	Flowering Date (Julian)	
VA15H-73 (2R)	56.3	-	2.6	-	1.4	-	1	105.0	+
Eve	61.3	-	8.5	-	5.0	-	2	95.5	-
VA15H-12	52.5	-	13.8		7.3		3	104.0	+
VA06H-25	67.5		12.3		8.3		4	104.5	+
VA15H-85 WS	72.5		12.1		8.9		5	103.3	
VA15H-118 WS	81.3		12.6		10.2		6	104.0	+
VA15H-11	70.0		14.6		10.2		7	104.8	+
VA08H-79 WS	73.8		13.8		10.2		8	106.5	+
VA07H-35 WS	71.3		14.6		10.3		9	104.5	+
VA15H-140 WS	81.3		12.8		10.6		10	103.0	
VA14H-110	72.5		14.5		11.2		11	102.5	
VA14H-195 WS	81.3		14.0		11.4		12	103.5	
VA14H-33	72.5		15.8		11.6		13	97.3	-
Amaze 10	81.3		15.4		12.7		14	103.8	
VA15H-100 WS	85.0		15.0		12.7		15	104.3	+
VA15H-9	72.5		19.3		13.9		16	104.3	+
VA15H-116 WS	78.8		17.7		14.0		17	104.0	+
VA15H-138 WS	75.0		18.4		14.1		18	102.0	
VA14H-58	77.5		18.0		14.4		19	102.8	
VA15H-119 WS	85.0		17.4		14.7		20	103.0	
VA15H-131 WS	67.5		21.5		14.7		21	103.8	
VA15H-110 WS	86.3		17.3		14.9		22	102.3	
VA15H-90 WS	80.0		18.1		15.0		23	104.0	+
VA15H-141 WS	88.8		17.1		15.3		24	102.8	
VA15H-139 WS	87.5		17.9		16.4		25	104.0	+
VA15H-111 WS	77.5		22.8		17.6		26	103.3	
VA14H-3	86.3		20.8		18.2		27	97.0	-
VA15H-79 WS	93.8	+	20.8		19.5		28	101.3	
Doyce	88.8		21.8		19.8		29	97.3	-
VA06H-79	90.0		26.9	+	25.2	+	30	103.5	
Average	77.7		16.6		13.4			102.5	
LSD (0.05)	14.3		7.5		7.2			1.4	
C.V.	13.1		32.2		38.4			1.0	

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 Mt. Holly, VA and were inoculated at booting stage with scabby corn kernels (50g/4-rows).

[1]Scab Incidence (%): Percentage of infected spikes among 20 randomly selected spikes.

[2]Scab Severity (%): Percentage of infected spikelets among 20 infected spikes.

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

Table 20. Summary of reaction of entries in the Virginia Tech State Barley Test to Fusarium head blight (scab), 2017 harvest.

Line	FHB Incidence[1] (%)		FHB Severity[2] (%)		FHB Index[3] (0-100)		Rank FHB Index	Flowering Date (Julian)	
Violetta	45.0	-	2.9	-	1.2	-	1	106.0	+
Flavia	65.0	-	2.6	-	1.6	-	2	111.0	+
Nomini	61.3	-	8.0		4.9		3	97.8	-
VA12B-8 LA	78.8		6.2		4.9		4	102.5	+
Thoroughbred	83.8		6.1		5.1		5	102.5	+
VA13B-25 LA	70.0	-	7.7		5.3		6	97.0	-
VA15B-98 (LA)	83.8		6.7		5.6		7	102.0	+
VA11B-141 LA	81.3		6.9		5.7		8	102.0	+
VA08B-95	88.8		8.0		7.4		9	99.3	
VA15B-65	78.8		9.7		7.7		10	97.5	-
Secretariat	77.5		9.6		7.7		11	99.8	
VA12B-56	86.3		9.0		7.8		12	97.5	-
Atlantic	85.0		9.9		8.5		13	96.3	-
VA15B-60	85.0		10.4		8.9		14	97.0	-
VA15B-67	90.0		10.5		9.5		15	96.5	-
VA15B-83 (LA)	88.8		11.5		10.3		16	94.8	-
VA14B-57	97.5		10.7		10.5		17	100.8	
Barsoy	86.3		12.2		10.6		18	100.0	
VA14B-71	95.0		11.2		10.7		19	100.3	
VA15B-89 (LA)	75.0	-	14.6		11.0		20	103.8	+
VA15B-54	95.0		11.7		11.1		21	98.5	-
Price	90.0		12.7		11.3		22	98.8	
VA15B-33	98.8		11.9		11.8		23	100.0	
VA14B-74	100.0	+	12.3		12.3		24	102.0	+
VA15B-78	88.8		13.2		12.4		25	101.3	
VA14B-73	92.5		13.7		12.6		26	99.0	
VA92-42-46	83.8		14.8		12.7		27	100.0	
VA14BFHB-83	87.5		14.7		13.0		28	97.8	-
VA14B-78	96.3		13.7		13.1		29	98.8	
Callao	92.5		14.6		13.4		30	97.5	-
VA14B-63	100.0	+	13.5		13.5		31	102.5	+
VA14B-79	98.8		14.5		14.3		32	100.8	
VA15B-79	95.0		15.2		14.4		33	100.3	
VA14B-75	96.3		15.3		14.6		34	99.3	
VA14B-59	98.8		15.1		14.9		35	99.3	
VA11B-102 LA	90.0		19.5		17.2		36	103.3	+
VA15B-8	100.0	+	19.9		19.9	+	37	100.3	
Wysor	95.0		22.4	+	21.6	+	38	101.0	
VA12B-41	97.5		22.6	+	21.8	+	39	102.5	+
VA12B-30	96.3		26.0	+	24.9	+	40	103.5	+
VA15B-5	92.5		27.2	+	25.4	+	41	98.5	-

Table 20. Summary of reaction of entries in the Virginia Tech State Barley Test to Fusarium head blight (scab), 2017 harvest.

Line	FHB Incidence[1] (%)	FHB Severity[2] (%)	FHB Index[3] (0-100)	Rank FHB Index	Flowering Date (Julian)
Average	87.5	12.7	11.5		100.2
LSD (0.05)	11.4	7.8	7.5		1.7
C.V.	9.3	43.8	46.5		1.2

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 Mt. Holly, VA and were inoculated at booting stage with scabby corn kernels (50g/4-rows).

[1]Scab Incidence (%): Percentage of infected spikes among 20 randomly selected spikes.

[2]Scab Severity (%): Percentage of infected spikelets among 20 infected spikes.

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

Section 4: 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 Blacksburg and Warsaw. The no-till locations (Holland and Shenandoah Valley) were planted at 48 seeds per square foot. All other locations were planted at 44 seeds per square foot. The Shenandoah Valley location was abandoned early in the season due to poor planting conditions and variability in the stand.

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 2017 in descending yield order were Croplan 8550, AgriMAXX 473, Armor Mayhem, #Bullet, Dyna-Gro 9701, Croplan SRW 9415, USG 3536, USG 3458, Croplan SRW 9606, AgriMAXX 415, MBX 14-S-210, Pioneer Brand 26R59, USG 3404, Croplan 8530, MAS #61, AgriMAXX 444, USG 3895, Hilliard, AgriMAXX 474, Pioneer Brand 26R41, Armor ARW1611, MBX 17-M-245, Armor ARW1610, Pioneer Brand 26R10, Croplan 8415, Dyna-Gro 9600, and AgriMAXX 446. AgriMAXX 415 and Armor ARW1610 also had test weight that was significantly higher than the mean of all lines tested. Average yield of all lines tested in 2016-17 was 69.7 bushels per acre.

Croplan 8550 had the highest two-year average yield. Croplan 8550, Hilliard, MAS #61, #Bullet, Pioneer Brand 26R59, AgriMAXX 474, MBX 14-S-210, AgriMAXX 415, USG 3895, Croplan 8530, MAS #67, AgriMAXX 444 and Croplan 8415 all had grain yield significantly above the mean of the 2016 and 2017 harvests. Hilliard, AgriMAXX 415 and Croplan 8415 also had test weight that was significantly higher than the two-year mean of all lines tested. The two-year average grain yield over all locations and varieties was 61.3 bushels per acre.

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 2017 harvest season (All rates are given on a per acre basis.)

Blacksburg - Planted October 12, 2016. Pre-plant fertilizer was 30-40-60-8(S)-3(B). Site was sprayed with .75 oz Harmony Extra SG® on November 15, 2016. Site was fertilized with 25 units UAN 30-0-0 on February 17, 2017 and with 60 units UAN 30-0-0 plus 0.75 oz Harmony Extra SG® on March 24, 2017. Harvest occurred June 21, 2017.

Blackstone - Planted October 18, 2016. Pre-plant fertilizer was 300 lb 10-10-10 on October 18, 2017. Site was top-dressed with 60 lb N and sprayed with .5 oz Harmony Extra SG® on February 2, 2017. Additionally, site was fertilized with 60 lb N using UAN on March 1, 2017. Site was sprayed with Mustang Max for aphid control. Harvest occurred June 22, 2017.

Warsaw - Planted October 19, 2016. Pre-plant lime was 1 ton October 15, 2016. Pre-plant fertilizer was 43-100-100-5 applied October 17, 2016. Quelex™ was applied at .75 oz with surfactant at 1 qt/100 gal water on December 4, 2016. Site was fertilized using 12-0-0-1.5 at 25 lb on both December 11, 2016 and February 6, 2017. Site was also fertilized using 24-0-0-3 at 60 lb on March 12, 2017. Site was treated with 2 oz Tombstone® on April 28, 2017. Harvest occurred June 11, 2017.

Painter - Planted October 20, 2016. Pre-plant fertilizer was 50 lb N on October 19, 2016. Site was treated with 4.75 oz Osprey, 1 qt 30% N and 8 oz NIS ¼ % on February 8, 2017. Additionally, site was treated with 0.75 oz Harmony Extra SG® and 8 oz NIS ¼ % on February 24, 2017. Site was fertilized with 120 lb N using 30% UAN on March 25, 2017. Harvest occurred June 14, 2017.

Holland - Planted minimum-till October 19, 2016. Site was sprayed with 28 oz Roundup® October 12, 2016. Pre-plant fertilizer was 379 lb 9-15-31 on October 17, 2016. Site was sprayed with 4.75 oz Osprey™ on February 6, 2017. Site was fertilized with 24 gal 24-0-0-3 plus 1.5 pt Mn plus 0.75 oz Harmony Extra SG® on February 28, 2017. Site was treated with 3 oz Tilt® plus 24 gal 24-0-0-3 on March 23, 2017. Harvest occurred June 26-27, 2017.

Orange - Planted October 6, 2016. Pre-plant fertilizer was 32-60-40 October 4, 2016. Sixty lb N plus 0.6 oz Harmony Extra SG® was applied February 21, 2017. Site was harvested June 21-22, 2017.

Shenandoah Valley - Planted on November 21, 2016. Pre-plant fertilizer was 1.5 ton broiler litter. Sixty lb N plus 0.7 oz Harmony Extra SG® was applied on February 7, 2017. Site was late-planted into very dry land and abandoned due to highly variable, poor stand.

Entries in 2016-17 Virginia Wheat Test, arranged by company.

Company	Line	Seed Treatment reported by company
AgriMAXX Wheat Company	**AgriMAXX 415**	Vibrance™ Extreme, Cruiser® 5FS, Maxim 4FS
7167 Highbanks Road	**AgriMAXX 444**	Vibrance™ Extreme, Cruiser® 5FS, Maxim 4FS
Mascoutah, IL 62258	**AgriMAXX 446**	Vibrance™ Extreme, Cruiser® 5FS, Maxim 4FS
	AgriMAXX 463	Vibrance™ Extreme, Cruiser® 5FS, Maxim 4FS
	AgriMAXX 464	Vibrance™ Extreme, Cruiser® 5FS, Maxim 4FS
	AgriMAXX 473	Vibrance™ Extreme, Cruiser® 5FS, Maxim 4FS
	AgriMAXX 474	Vibrance™ Extreme, Cruiser® 5FS, Maxim 4FS
Armor Seed, LLC	**Armor RIPTIDE**	Vibrance™ Extreme + Cruiser®
183 Pennsylvania Ave.	**Armor AMBUSH**	Vibrance™ Extreme + Cruiser®
Waldenburg, AR 72475	**Armor ARW1610**	Vibrance™ Extreme + Cruiser®
	Armor NEMESIS	Vibrance™ Extreme + Cruiser®
	Armor MAYHEM	Vibrance™ Extreme + Cruiser®
Crop Production Services	**Dyna-Gro 9223**	Foothold® Virock™ w/ Awaken® ST
15277 Richmond-Tappahannock Hwy	**Dyna-Gro 9522**	Foothold® Virock™ w/ Awaken® ST
St Stephens Church, VA 23148	**Dyna-Gro 9600**	Foothold® Virock™ w/ Awaken® ST
	Dyna-Gro 9692	Foothold® Virock™ w/ Awaken® ST
	Dyna-Gro 9701	Foothold® Virock™ w/ Awaken® ST
	Dyna-Gro 9750	Foothold® Virock™ w/ Awaken® ST
	Dyna-Gro 9772	Foothold® Virock™ w/ Awaken® ST
	Dyna-Gro 9862	Foothold® Virock™ w/ Awaken® ST
	Shirley	Foothold® Virock™ w/ Awaken® ST
	WX16722	Foothold® Virock™ w/ Awaken® ST
Winfield	**CROPLAN 8415**	Warden Cereals
1080 County Road F West, MS 5850	**CROPLAN 8530**	Warden Cereals
Shoreview, MN 55126-2910	**CROPLAN 8550**	Warden Cereals
	CROPLAN SRW 9415	Warden Cereals
	CROPLAN SRW 9606	Warden Cereals
Dupont Pioneer	**Pioneer Brand 26R10**	Vibrance™ Extreme
425 Abbeydale Way	**Pioneer Brand 26R36**	Vibrance™ Extreme
Columbia, SC 29229	**Pioneer Brand 26R41**	Vibrance™ Extreme
	Pioneer Brand 26R53	Vibrance™ Extreme
	Pioneer Brand 26R59	Vibrance™ Extreme
	Pioneer XW15C	Vibrance™ Extreme
Eddie Mercer Agri-Services, Inc.	**MBX 14-S-210**	Vibrance™ Extreme + Cruiser Maxx®
6900 Linganore Road	**MBX 16-B-203**	Vibrance™ Extreme + Cruiser Maxx®
Frederick, MD 21702	**MBX 17-M-245**	Vibrance™ Extreme + Cruiser Maxx®
	MBX 17-P-275	Vibrance™ Extreme + Cruiser Maxx®
Erwin-Keith, Inc.	**#BOSS**	Vibrance™ Extreme
1529 Hwy 193	**#Bullet**	Vibrance™ Extreme
Wynne, AR 72396	**#Turbo**	Vibrance™ Extreme
	#Warrior	Vibrance™ Extreme
	PGX 14-5	Vibrance™ Extreme
	PGX 16-3	Vibrance™ Extreme
	Progeny 16-1	Vibrance™ Extreme

Entries in 2016-17 Virginia Wheat Test, arranged by company.

Company	Line	Seed Treatment reported by company
	Progeny 16-4	Vibrance™ Extreme
	Progeny 243	Vibrance™ Extreme
	Progeny 357	Vibrance™ Extreme
Featherstone Farm Seed	**Featherstone 73**	Vibrance™ Extreme
13941 Genito Road	**Featherstone VA258**	Vibrance™ Extreme
Amelia, VA 23002		
University of Georgia	GA051207-14E53	Vibrance™ Extreme
1109 Experiment Street	GA07353-14E19	Vibrance™ Extreme
Griffin, GA 30223	GAJT 141-14E45	Vibrance™ Extreme
Limagrain Cereal Seeds	**L11538**	Albaugh Cereals F&I Custom Blend
7099 Parkbrook Lane	**L11541**	Albaugh Cereals F&I Custom Blend
Codova, TN 38018	**L11550**	Albaugh Cereals F&I Custom Blend
University of Maryland	15MDX1	Vibrance™ Extreme/Storicide
1116 Research Greenhouse Complex	15MDX17	Vibrance™ Extreme/Storicide
College Park, MD 20742	15MDX2	Vibrance™ Extreme/Storicide
	15MDX4	Vibrance™ Extreme/Storicide
	15MW133	Vibrance™ Extreme/Storicide
Meherrin Ag & Chemical	**SH 7200**	Vibrance™ Extreme
413 Main Street	SH EXP 1706	Vibrance™ Extreme
Severn, NC 27877	**Southern Harvest 4300**	Vibrance™ Extreme
	Southern Harvest 4400	Vibrance™ Extreme
Mid-Atlantic Seeds	**MAS #35**	Raxil® + Thiram
316 Albemarle Street	**MAS #42**	Raxil® + Thiram
York, PA 17403	**MAS #6**	Raxil® + Thiram
	MAS #61	Raxil® + Thiram
	MAS #67	Raxil® + Thiram
	MAS #7	Raxil® + Thiram
	MAX116	Raxil® + Thiram
	MAX216	Raxil® + Thiram
	MAX316	Raxil® + Thiram
	MAX516	Raxil® + Thiram
North Carolina State University	NC13-20332	Untreated
840 Method Road Unit 3	NC13-21213	Untreated
Raleigh, NC 27695-7629	NC13-23443	Untreated
	NC13-23449	Untreated
Syngenta Seeds, Inc.	**Oakes**	Vibrance™ Extreme
806 N. 2nd St	**SY 007**	Vibrance™ Extreme
Berthoud, CO 80513	**SY 100**	Vibrance™ Extreme
	SY 547	Vibrance™ Extreme
	SY Harrison	Vibrance™ Extreme
	SY Viper	Vibrance™ Extreme
University of Tennessee	TN1501	Dividend®
252 Ellington Hall, 2431 Joe Johnson D	TN1604	Dividend®
Knoxville, TN 37996		

Entries in 2016-17 Virginia Wheat Test, arranged by company.

Company	Line	Seed Treatment reported by company
Texas A&M AgriLife Research 2600 South Neal Commerce, TX 75429	TX EL2	Foothold® Extra
UniSouth Genetics, Inc. 3205-C HWY 46S Dickson, TN 37055	**USG 3197**	Vibrance™ Extreme + Cruiser Maxx®
	USG 3228	Vibrance™ Extreme + Cruiser Maxx®
	USG 3316	Vibrance™ Extreme + Cruiser Maxx®
	USG 3404	Vibrance™ Extreme + Cruiser Maxx®
	USG 3458	Vibrance™ Extreme + Cruiser Maxx®
	USG 3536	Vibrance™ Extreme + Cruiser Maxx®
	USG 3549	Vibrance™ Extreme + Cruiser Maxx®
	USG 3895	Vibrance™ Extreme + Cruiser Maxx®
Virginia Tech and the Virginia Crop Improvement Association 9142 Atlee Station Road Mechanicsville, VA 23111	DH11SRW061-16	Raxil®MD Pro + Gaucho
	DH11SRW065-23	Raxil®MD Pro + Gaucho
	DH11SRW065-26	Raxil®MD Pro + Gaucho
	DH11SRW069-70	Raxil®MD Pro + Gaucho
	DH11SRW070-14	Raxil®MD Pro + Gaucho
	DH12SRW056-058	Raxil®MD Pro + Gaucho
	DH12SRW057-006	Raxil®MD Pro + Gaucho
	Hilliard	Raxil®MD Pro + Gaucho
	Massey	Raxil®MD Pro + Gaucho
	VA07MAS1-7047-1-1-4-2	Raxil®MD Pro + Gaucho
	VA07MAS3-7304-3-1-2-3	Raxil®MD Pro + Gaucho
	VA07MAS3-7304-3-2-4-2	Raxil®MD Pro + Gaucho
	VA08MAS1-188-6-4-1	Raxil®MD Pro + Gaucho
	VA09MAS1-12-5-1	Raxil®MD Pro + Gaucho
	VA09MAS1-12-5-1-1	Raxil®MD Pro + Gaucho
	VA09MAS1-12-5-1-3	Raxil®MD Pro + Gaucho
	VA09MAS1-12-8-4	Raxil®MD Pro + Gaucho
	VA09MAS2-131-6-2	Raxil®MD Pro + Gaucho
	VA09MAS2-131-6-2-4	Raxil®MD Pro + Gaucho
	VA09MAS3-34-2-1	Raxil®MD Pro + Gaucho
	VA09MAS6-122-7-1	Raxil®MD Pro + Gaucho
	VA09MAS6-122-7-1-1	Raxil®MD Pro + Gaucho
	VA09MAS6-122-7-1-4	Raxil®MD Pro + Gaucho
	VA09MAS8-34-5-2	Raxil®MD Pro + Gaucho
	VA11W-108PA	Raxil®MD Pro + Gaucho
	VA11W-279	Raxil®MD Pro + Gaucho
	VA11W-313	Raxil®MD Pro + Gaucho
	VA12FHB-8	Raxil®MD Pro + Gaucho
	VA12W-248	Raxil®MD Pro + Gaucho
	VA12W-31	Raxil®MD Pro + Gaucho
	VA12W-68	Raxil®MD Pro + Gaucho
	VA12W-72	Raxil®MD Pro + Gaucho
	VA13W-174	Raxil®MD Pro + Gaucho

Entries in 2016-17 Virginia Wheat Test, arranged by company.

Company	Line	Seed Treatment reported by company
	VA13W-38	Raxil®MD Pro + Gaucho
	VA14FHB-22	Raxil®MD Pro + Gaucho
	VA14FHB-28	Raxil®MD Pro + Gaucho
	VA14FHB-29	Raxil®MD Pro + Gaucho
	VA14W-28	Raxil®MD Pro + Gaucho
	VA14W-29	Raxil®MD Pro + Gaucho
	VA14W-32	Raxil®MD Pro + Gaucho
	VA15W-101	Raxil®MD Pro + Gaucho
	VA15W-63	Raxil®MD Pro + Gaucho
	VA15W-94	Raxil®MD Pro + Gaucho

Released cultivars are shown in bold print.

Table 21. Summary of performance of entries in the Virginia Tech Wheat Test over location, 2017 harvest.
Note: 2017 results were severely impacted by freeze damage at some locations. These effects should be taken into consideration when examining the over-location yield averages.

Line	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Powdery Mildew (0-9)	Leaf Rust (0-9)	BYD Virus[1] (0-9)	Stripe Rust (0-9)	Early Height (In)	FHB Index (0-100)	Hessian Fly Res.[2]	Awns[3]
	(6)	(6)	(2)	(3)	(5)	(3)	(3)	(3)	(2)	(1)			
CROPLAN 8550	82.3 +	55.4	113	35 +	2	1 -	1 -	1 -	0	10	6.563	BDL	A
AgriMAXX 473	82.2 +	55.7	113	35 +	2	1 -	2 -	1	1	10	4.754 -	BDL	A
Armor MAYHEM	81.5 +	55.7	114 +	35 +	2	1 -	2	1	0	10	6.339	BCDL	A
MAX116	80.9 +	55.8	113	35 +	2	1 -	2 -	1 -	0	10	5.179 -	BCDL	A
#Bullet	80.8 +	55.4	113 +	35 +	2	1 -	1 -	1	0	9	4.554 -	BCDL	A
Dyna-Gro 9701	80.6 +	55.4	113	35 +	2	1 -	1 -	2	0	10	6.696	BDL	A
CROPLAN SRW 9415	80.0 +	55.2	115 +	34 +	1 -	3 +	4 +	1	0	9	12.21	BDL	A
USG 3536	80.0 +	55.6	113 +	36 +	2	0 -	1 -	1	0	9	5.893	BDL	A
USG 3458	79.7 +	53.3 -	112 -	33	1 -	1	5 +	2	0	9 -	19.08	BDL	AL
CROPLAN SRW 9606	79.0 +	55.0	112	33	2	2	3 +	1	0	9 -	18.52	BDL	A
SH EXP 1706	78.9 +	56.7 +	113 +	33	3 +	2	2 -	1	0	10	19.11	none	A
Pioneer XW15C	78.2 +	54.5 -	113	34 +	3	2	2	2	0	8 -	7.974	BDL	AL
AgriMAXX 415	77.8 +	56.2 +	113	33	1 -	3 +	3 +	1	0	9	15.52	none	A
MBX 14-S-210	77.5 +	55.4	114 +	36 +	1 -	1 -	1 -	1	1	9	12.42	BCDL	A
Pioneer Brand 26R59	77.2 +	55.1	112	31	1 -	1	4 +	2	0	9	20.47	none	TA
USG 3404	76.9 +	55.1	115 +	34	1	2	3 +	1 -	0	10	10.16	none	A
CROPLAN 8530	76.8 +	53.3 -	111 -	33	2	1	1 -	1	2 +	10	4.927 -	none	A
VA09MAS1-12-5-1-1	76.4 +	58.0 +	113 +	33	3 +	3 +	1 -	1	0	11	23.3	none	A
MAS #61	76.4 +	54.5 -	110 -	33	4 +	3 +	2	1	1	9	5.77 -	BDL	A
VA12W-31	76.1 +	55.7	113	33	3	1	1 -	1	1	9 -	30.16 +	none	A
AgriMAXX 444	76.1 +	54.9	115 +	34	2	2	4 +	1 -	0	10	11.41	none	A
VA09MAS1-12-5-1-3	76.0 +	57.7 +	114 +	34 +	3 +	0 -	0 -	1 -	0	11	23.44	none	A
VA15W-63	76.0 +	56.2 +	113	33	1 -	1 -	1 -	1 -	1	9 -	21.38	BCDL	AL
USG 3895	75.7 +	54.8	113	33	2	4 +	2	1 -	0	9	16.72	none	A
Hilliard	75.5 +	55.7	113	34	2	1 -	2	1 -	0	11	18.2	BD	A
AgriMAXX 474	75.3 +	54.6 -	112 -	33	2	1 -	5 +	2	0	9 -	19.85	BDL	TA
Pioneer Brand 26R41	75.3 +	55.0	113 +	31	1 -	1 -	2	2	0	10	31.81 +	BCDL	A

Table 21. Summary of performance of entries in the Virginia Tech Wheat Test over location, 2017 harvest.
Note: 2017 results were severely impacted by freeze damage at some locations. These effects should be taken into consideration when examining the over-location yield averages.

Line	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Powdery Mildew (0-9)	Leaf Rust (0-9)	BYD Virus[1] (0-9)	Stripe Rust (0-9)	Early Height (In)	FHB Index (0-100)	Hessian Fly Res.[2]	Awns[3]
	(6)	(6)	(2)	(3)	(5)	(3)	(3)	(3)	(2)	(1)			
VA12W-72	75.2 +	54.8	112 -	32	2	1	2	1	0	11	6.181	---	A
Armor NEMESIS	75.1 +	56.9 +	115 +	33	3	3 +	0 -	1	0	10	13.36	none	AL
VA09MAS2-131-6-2-4	74.9 +	54.6 -	110 -	29 -	2	1	2 -	1 -	0	10	6.328	none	AL
MBX 17-M-245	74.9 +	53.7 -	112 -	33	1 -	1 -	5 +	1	0	9	20.45	BCDL	AL
Armor ARW1610	74.8 +	56.2 +	114 +	33	3 +	2	1 -	2	0	10	29.07 +	BCDL	A
DH11SRW065-23	74.8 +	57.4 +	117 +	34 +	3	2	1 -	1	0	10	36.34 +	none	A
VA09MAS2-131-6-2	74.7 +	54.9	109 -	27 -	1 -	1 -	1 -	1	0	10	21.38	none	AL
WX16722	74.6 +	54.6 -	112 -	33	1 -	1 -	5 +	3 +	0	9	16	BDL	AL
VA11W-108PA	74.6 +	55.5	112	33	2	0 -	2	2	0	12	24.4	---	A
Pioneer Brand 26R10	74.4 +	54.6 -	114 +	33	2	3 +	6 +	2	0	10	17.73	BCDL	A
DH11SRW069-70	74.4 +	54.8	115 +	34	2	2	2	1 -	0	10	23.02	none	A
CROPLAN 8415	74.3 +	55.2	113	32	3	1 -	3 +	2	0	11	31.51 +	BCDL	TA
L11550	73.8 +	56.6 +	114 +	33	3	2	1 -	1	0	9	32.76 +	none	A
L11541	73.7 +	57.3 +	115 +	32	2	3 +	0 -	2	0	8 -	8.538	none	TA
Dyna-Gro 9600	73.7 +	53.2 -	111 -	33	1	1	1 -	2	3 +	10	4.722 -	none	A
AgriMAXX 446	73.7 +	55.2	115 +	33	1 -	3	5 +	1	0	9 -	16.76	BDL	A
VA12W-68	73.7 +	55.0	111 -	31 -	3	2	1 -	1	0	13 +	5.256 -	BCDL	A
MAX316	73.6 +	55.3	115 +	36 +	2	3 +	4 +	2	0	8 -	5.625 -	BDL	A
Dyna-Gro 9522	73.5	54.8	115 +	34	1 -	2	4 +	2	0	9 -	10.38	none	A
Shirley	73.4	54.3 -	112	31 -	2	0 -	1 -	1	5 +	11	31.96 +	none	AL
VA09MAS8-34-5-2	73.3	54.0 -	113	34	3	0 -	1 -	1 -	0	9 -	21.36	none	TA
Dyna-Gro 9750	73.2	54.0 -	112 -	32	1 -	3 +	3 +	1	0	10	4.813 -	none	TA
DH12SRW057-006	73.2	58.3 +	114 +	31 -	2	0 -	2 -	1	0	9 -	18.66	none	AL
#Warrior	73.0	53.9 -	112 -	32	1 -	2	5 +	1	0	9 -	23.84	BCDL	AL
PGX 16-3	73.0	54.8	113	34	2	1	6 +	2 +	0	8 -	7.746	none	A
MAX216	72.8	56.4 +	112 -	30 -	2	1	4 +	1 -	0	10	10.04	none	A
AgriMAXX 463	72.8	53.7 -	111 -	31 -	2	4 +	3	1	0	9	3.521 -	none	TA

Table 21. Summary of performance of entries in the Virginia Tech Wheat Test over location, 2017 harvest.
Note: 2017 results were severely impacted by freeze damage at some locations. These effects should be taken into consideration when examining the over-location yield averages.

Line	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Powdery Mildew (0-9)	Leaf Rust (0-9)	BYD Virus[1] (0-9)	Stripe Rust (0-9)	Early Height (In)	FHB Index (0-100)	Hessian Fly Res.[2]	Awns[3]
	(6)	(6)	(2)	(3)	(5)	(3)	(3)	(3)	(2)	(1)			
MAS #7	72.7	55.9	114 +	35 +	2	1 -	5 +	2	0	8 -	11.72	none	TA
VA12W-248	72.4	55.7	112 -	34	3 +	2	1 -	1	5 +	11	15.92	none	AL
Dyna-Gro 9772	72.0	52.4 -	112 -	34	2	2	2	2	0	10	4.844 -	none	A
VA09MAS1-12-5-1	71.9	58.2 +	113	33	3	3	1 -	1	0	11	29.27 +	none	A
Pioneer Brand 26R53	71.9	56.2 +	113	31	1 -	3 +	4 +	1	0	10	15.98	none	A
VA14W-29	71.6	56.8 +	114 +	33	2	2	1 -	2	0	10	51.61 +	none	AL
VA13W-174	71.3	56.2 +	111 -	33	2	0 -	1 -	1	2 +	12 +	5.162 -	none	A
MBX 17-P-275	71.3	53.7 -	112 -	32	3	3 +	3 +	1	0	11	2.889 -	BCDL	TA
TX EL2	71.0	55.1	112	33	3 +	2	1 -	2	0	12	23.19	none	A
USG 3228	70.8	53.9 -	112 -	32	2	4 +	2	1	0	11	2.778 -	none	TA
AgriMAXX 464	70.7	52.1 -	112	35 +	2	2	2	1 -	2 +	10	3.366 -	none	A
USG 3197	70.7	52.5 -	112 -	36 +	3	3	2 -	1	1	10	4.944 -	none	A
L11538	70.6	54.8	114 +	34 +	4 +	3 +	3	1	0	12	20.27	none	A
Pioneer Brand 26R36	70.5	55.3	113	34	2	6 +	2	1 -	0	9 -	8.214	BDL	A
VA14FHB-22	70.5	56.8 +	113 +	32	3 +	3	1 -	1	0	11	27.03 +	none	TA
15MW133	70.4	57.5 +	114 +	33	2	2	0 -	2	0	10	9.773	none	TA
SY 007	70.4	54.7	111 -	33	2	1 -	6 +	1	0	11	5.576 -	none	A
Dyna-Gro 9862	70.0	56.1 +	114 +	33	2	2	5 +	1	0	9 -	5.714 -	BCDL	AL
SY Viper	69.8	56.5 +	111 -	33	3 +	1	5 +	2	0	11	29.2 +	BC	AL
TN1604	69.7	55.0	114 +	32	3	2	1 -	2	0	9	30.1 +	BCDL	TA
VA09MAS6-122-7-1	69.3	55.7	111 -	29 -	1 -	1 -	0 -	2	0	12	8.49	none	A
SH 7200	69.1	55.9 +	112 -	33	3	2	1 -	1	2 +	13 +	28.59 +	BCL	A
MAS #67	69.1	53.1 -	112 -	31 -	1	4 +	3 +	1	0	12	3.507 -	none	TA
Armor RIPTIDE	69.0	54.5 -	112 -	32	1 -	1	5 +	3 +	0	9	27.33 +	BDL	AL
DH12SRW056-058	69.0	56.4 +	113	33	2	2	1 -	2	0	12 +	13.81	none	A
VA14W-28	68.9	57.3 +	113	31	2	1 -	1 -	2	0	11	26.7 +	none	AL
DH11SRW070-14	68.7	54.3 -	112 -	28 -	1 -	1 -	0 -	2	0	13 +	20.26	none	A

Table 21. Summary of performance of entries in the Virginia Tech Wheat Test over location, 2017 harvest.
Note: 2017 results were severely impacted by freeze damage at some locations. These effects should be taken into consideration when examining the over-location yield averages.

Line	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Powdery Mildew (0-9)	Leaf Rust (0-9)	BYD Virus[1] (0-9)	Stripe Rust (0-9)	Early Height (In)	FHB Index (0-100)	Hessian Fly Res.[2]	Awns[3]
	(6)	(6)	(2)	(3)	(5)	(3)	(3)	(3)	(2)	(1)			
VA09MAS1-12-8-4	68.6	56.8 +	112	33	1	3 +	0 -	2	0	10	22.34	none	TA
#Turbo	68.3	55.7	112	31	1 -	1 -	1 -	1 -	0	12 +	11.41	BCDL	TA
VA08MAS1-188-6-4-1	68.2	55.5	110 -	31 -	1	0 -	1 -	2	1	11	36.11 +	none	AL
USG 3316	68.2	54.3 -	114 +	35 +	1 -	6 +	7 +	1	3 +	9 -	9.286	none	A
DH11SRW061-16	68.0	56.7 +	112 -	30 -	2	1 -	0 -	3 +	0	13 +	7.969	none	AL
MAS #35	67.8	55.0	114 +	32	1 -	4 +	3 +	2	2 +	8 -	8.214	none	A
VA09MAS6-122-7-1-1	67.8	55.2	111 -	29 -	3	1	0 -	2	0	13 +	31.4 +	none	A
Progeny 16-4	67.4	56.1 +	113	32	2	0 -	0 -	2	0	11	28.08 +	CD	TA
VA11W-279	67.2	55.8	111 -	29 -	3	0 -	0 -	1	0	13 +	13.35	BCDL	AL
VA13W-38	67.1	56.5 +	111 -	32	2	0 -	1 -	1	1	12 +	2.976 -	none	A
MAS #6	67.1	52.9 -	112	31 -	1	2	4 +	3 +	0	10	16.16	none	A
Dyna-Gro 9223	67.1	54.6 -	114 +	35 +	2	4 +	7 +	2	0	10	14.07	BCDL	TA
SY Harrison	66.2	53.4 -	113	33	2	4 +	5 +	2	0	9	22.18	none	A
Featherstone 73	66.2	56.9 +	113	33	1 -	2	0 -	3 +	0	11	18.08	none	TA
SY 547	66.1	55.9 +	112 -	34 +	2	0 -	2	4 +	1	11	7.995	none	TA
VA09MAS3-34-2-1	65.9 -	54.6 -	114 +	30 -	3 +	2	1 -	2 +	0	13 +	14.91	none	AL
VA07MAS3-7304-3-2-4-2	65.8 -	53.5 -	110 -	28 -	2	1 -	1 -	1	0	14 +	21.76	BCDL	AL
VA14FHB-29	65.7 -	57.0 +	113	33	3 +	2	0 -	1	0	11	15.42	none	TA
Progeny 16-1	65.5 -	56.5 +	114 +	31	2	3 +	0 -	3 +	0	12 +	38.61 +	CD	A
VA09MAS6-122-7-1-4	65.5 -	55.1	109 -	28 -	3	1 -	1 -	2	0	13 +	10.34	none	A
SY 100	65.3 -	52.5 -	114 +	32	2	2	5 +	2	0	10	11.64	---	AL
MBX 16-B-203	65.1 -	54.3 -	115 +	34 +	1 -	6 +	7 +	2	1	8 -	8.724	BCDL	A
VA11W-313	64.9 -	53.1 -	110 -	29 -	3	3 +	2	1 -	0	13 +	10.03	none	A
#BOSS	64.7 -	52.4 -	112	32	2	2	3	4 +	1	11	13.41	none	A
VA07MAS1-7047-1-1-4-2	64.7 -	55.3	111 -	28 -	3 +	0 -	0 -	3 +	0	12	26.41 +	BCDL	AL
VA15W-94	64.5 -	54.4 -	112 -	32	3 +	1 -	1 -	2	0	13 +	14.29	none	A
VA12FHB-8	64.1 -	53.6 -	111 -	31	3 +	1 -	3	2	2 +	12 +	12.08	none	AL

Table 21. Summary of performance of entries in the Virginia Tech Wheat Test over location, 2017 harvest.
Note: 2017 results were severely impacted by freeze damage at some locations. These effects should be taken into consideration when examining the over-location yield averages.

Line	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Powdery Mildew (0-9)	Leaf Rust (0-9)	BYD Virus[1] (0-9)	Stripe Rust (0-9)	Early Height (In)	FHB Index (0-100)	Hessian Fly Res.[2]	Awns[3]
	(6)	(6)	(2)	(3)	(5)	(3)	(3)	(3)	(2)	(1)			
Progeny 243	64.0 -	54.7	112 -	35 +	1 -	3 +	5 +	3 +	1	11	7.489	none	A
DH11SRW065-26	64.0 -	53.7 -	112 -	30 -	2	2	0 -	2	0	13 +	7.104	none	AL
15MDX4	63.7 -	57.2 +	114 +	31 -	1 -	1	0 -	2	0	9	5.585 -	none	A
VA15W-101	63.7 -	54.1 -	111 -	29 -	3 +	1 -	1 -	3 +	0	12 +	8.204	none	A
MAX516	63.7 -	56.2 +	109 -	34	3 +	4 +	2	1	2 +	10	6.458	BCDL	A
TN1501	63.4 -	53.2 -	113	34	4 +	4 +	4 +	1	0	10	18.78	none	A
GAJT 141-14E45	63.3 -	56.0 +	112	32	2	1 -	0 -	3 +	0	12	16.37	BCDL	A
Dyna-Gro 9692	63.1 -	54.0 -	114 +	35 +	1 -	4 +	7 +	1	1	9 -	10.06	none	A
MAS #42	62.9 -	54.5 -	115 +	34	1 -	5 +	7 +	2	1	9 -	9.141	BCDL	A
PGX 14-5	62.9 -	57.0 +	113	36 +	3	3	5 +	2	0	10	4.755 -	B	AL
Armor AMBUSH	62.8 -	56.4 +	114 +	33	1 -	6 +	2	3 +	0	10	8.557	---	AL
USG 3549	62.6 -	56.0 +	113	34	2	4 +	2	2	1	11	3.594 -	C	AL
Southern Harvest 4300	62.5 -	52.7 -	113	32	2	3 +	6 +	2	2 +	8 -	6.563	none	A
Oakes	61.9 -	57.6 +	113	32	2	3 +	4 +	2	0	9	17.06	none	TA
NC13-21213	61.3 -	56.3 +	113	33	4 +	1	1 -	2	0	11	28.74 +	CDL	TA
GA07353-14E19	61.1 -	56.9 +	112	33	2	3 +	0 -	2	0	11	36.64 +	none	A
Featherstone VA258	61.0 -	53.7 -	114 +	34	2	1 -	2	3 +	6 +	11	26.87 +	none	TA
NC13-23443	60.8 -	56.8 +	113	32	4 +	0 -	1 -	3 +	2 +	12 +	15.12	none	A
15MDX17	60.7 -	55.3	113	31 -	2	1	0 -	2 +	0	12 +	12.42	BCD	A
VA07MAS3-7304-3-1-2-3	60.3 -	54.8	108 -	29 -	3	2	1 -	1	0	15 +	14.91	BCDL	AL
Progeny 357	59.7 -	51.4 -	115 +	34 +	2	3 +	8 +	2	0	10	13.57	none	A
VA14W-32	59.7 -	55.7	110 -	30 -	4 +	2	2	2	0	13 +	13.19	none	AL
Southern Harvest 4400	59.6 -	55.3	115 +	37 +	1 -	4 +	4 +	1	0	9 -	5.582 -	BDL	TA
VA14FHB-28	59.6 -	55.7	109 -	32	2	3 +	1 -	2	0	14 +	7.314	none	A
NC13-23449	58.5 -	56.5 +	114 +	33	3	0 -	1 -	3 +	2 +	11	22.35	none	A
GA051207-14E53	58.5 -	55.2	112 -	32	2	5 +	1 -	3 +	0	13 +	12.76	BDL	TA
15MDX2	57.3 -	58.2 +	113	34 +	2	2	1 -	3 +	0	12	3.958 -	none	A

Table 21. Summary of performance of entries in the Virginia Tech Wheat Test over location, 2017 harvest.
Note: 2017 results were severely impacted by freeze damage at some locations. These effects should be taken into consideration when examining the over-location yield averages.

Line	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Powdery Mildew (0-9)	Leaf Rust (0-9)	BYD Virus[1] (0-9)	Stripe Rust (0-9)	Early Height (In)	FHB Index (0-100)	Hessian Fly Res.[2]	Awns[3]
	(6)	(6)	(2)	(3)	(5)	(3)	(3)	(3)	(2)	(1)			
15MDX1	56.2 -	56.3 +	113	32	4 +	1 -	2	2	0	12	20.47	BCD	A
NC13-20332	55.9 -	55.8	114 +	31	4 +	0 -	0 -	4 +	0	13 +	27.86 +	none	TA
Massey	41.4 -	53.7 -	112	33	5 +	0 -	9 +	2	0	14 +	7.656	B	AL
Average	69.7	55.2	113	33	2	2	2	2	0	10	15.25		
LSD (0.05)	3.8	0.6	1	1	1	1	1	1	1	2	9.471		
C.V.	9.3	2.0	1	5	57	40	39	49	217	11	44.68		

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.

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

[1] BYD = Barley Yellow Dwarf Virus.

[2] Seedlings were screened for resistance to biotypes B, C, D, and L of Hessian Fly. Letter in column indicates varietal resistance. "---" indicates seed either had been treated with insecticide or was otherwise unavailable for screening.

[3] A=awned, AL=awnletted, TA=tip awned.

Table 22. Two-year average summary of performance of entries in the Virginia Tech Wheat Tests, 2016 and 2017 harvests.

Line	Grain Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Mature Height (In)		Plant Lodging (0-9)		Powdery Mildew (0-9)		Leaf Rust (0-9)		BYD Virus[1] (0-9)		Stripe Rust (0-9)		Leaf Blotch (0-9)		Early Height (In)	
	(11)		(11)		(4)		(5)		(8)		(7)		(7)		(4)		(5)		(1)		(3)	
CROPLAN 8550	69.9	+	55.4		117	+	34	+	1		1	-	1	-	1		0	-	2		10	-
Hilliard	69.0	+	56.6	+	115		33	+	2		1	-	2	-	1	-	0	-	1		13	+
MAS #61	68.3	+	55.1		114	-	31		3	+	3	+	2	-	1	-	1		1		10	-
VA11W-108PA	68.1	+	56.4	+	115		32		2		1	-	1	-	2		0	-	1		13	+
#Bullet	67.9	+	55.3		117	+	34	+	1		1	-	2	-	1		0	-	1		10	-
Pioneer Brand 26R59	67.6	+	55.4		116		29	-	1	-	1	-	4	+	2		0	-	2		10	-
AgriMAXX 474	67.4	+	55.2		116		31		1		1	-	5	+	1		0	-	2		10	-
VA12W-31	67.1	+	56.3	+	116	+	31		2	+	1	-	1	-	1		2	+	1		9	-
L11550	66.6	+	57.0	+	117	+	32		2		2		1	-	1		0	-	1		11	-
VA12W-72	66.0	+	55.9	+	113	-	30	-	2		1	-	2	-	1		0	-	1		13	+
MBX 14-S-210	65.8	+	55.5		118	+	34	+	1	-	1	-	1	-	1		1		1		10	-
L11541	65.7	+	57.3	+	117	+	30		2		2	-	0	-	1		1		1		9	-
AgriMAXX 415	65.5	+	56.8	+	116	+	32		1		3	+	3		1		1		2		10	-
USG 3895	65.5	+	54.7		116	+	31		1		4	+	1	-	1	-	0	-	1		10	-
VA14W-29	64.9	+	57.3	+	116	+	31		1		2		1	-	1		0	-	2		12	
CROPLAN 8530	64.7	+	53.8	-	114	-	32		2		2	-	1	-	1		3	+	2		12	
MAS #67	64.5	+	53.9	-	115		30	-	1		3	+	3		1		1		2		12	
VA12W-248	64.5	+	55.7		114	-	33	+	3	+	2		1	-	1		5	+	2		14	+
AgriMAXX 444	64.5	+	54.8		118	+	32		1		2		4	+	1	-	0	-	2		10	-
VA12W-68	64.2	+	55.9	+	113	-	30	-	2	+	1	-	1	-	1		0	-	1		14	+
CROPLAN 8415	64.1	+	56.1	+	114	-	31		2	+	1	-	4	+	2		1	-	1		13	+
USG 3404	64.1		55.1		118	+	32		1		2		4	+	1		0	-	2		10	-
Pioneer Brand 26R41	64.0		54.9		117	+	29	-	1	-	1	-	2		1		0	-	3		11	
Shirley	63.8		53.5	-	117	+	30	-	2		0	-	1	-	1		6	+	1		11	
MAS #7	63.7		55.6		117	+	33	+	2		1	-	5	+	1		1		2		9	-
Pioneer Brand 26R10	63.6		55.0		117	+	31		1		3	+	6	+	1		0	-	2		10	-
VA13W-174	62.8		56.4	+	112	-	32		2		0	-	1	-	1		2	+	1		14	+
AgriMAXX 446	62.7		55.4		118	+	32		1	-	3		5	+	1		0	-	4	+	10	-

Table 22. Two-year average summary of performance of entries in the Virginia Tech Wheat Tests, 2016 and 2017 harvests.

Line	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Powdery Mildew (0-9)	Leaf Rust (0-9)	BYD Virus[1] (0-9)	Stripe Rust (0-9)	Leaf Blotch (0-9)	Early Height (In)
	(11)	(11)	(4)	(5)	(8)	(7)	(7)	(4)	(5)	(1)	(3)
USG 3197	62.6	53.2 -	116	34 +	2 +	2	2 -	1 -	2	1	11
Dyna-Gro 9522	62.3	54.9	118 +	32	1 -	2	4 +	1	0 -	3 +	10 -
MAS #35	62.3	55.5	117 +	31	1	3 +	2	1	3 +	1	9 -
SY Viper	62.1	56.8 +	114 -	33 +	3 +	2 -	5 +	1	0 -	1	13 +
DH11SRW070-14	62.0	54.4 -	113 -	27 -	1 -	1 -	1 -	1	1 -	1	14 +
Pioneer Brand 26R53	61.9	56.7 +	116 +	30 -	1 -	3 +	4 +	1	0 -	2	11 -
VA09MAS1-12-8-4	61.5	57.3 +	115	32	1	4 +	0 -	2	0 -	1	11
Dyna-Gro 9600	61.5	53.5 -	114 -	32	1	1 -	1 -	2	3 +	2	13 +
VA09MAS6-122-7-1	61.4	56.6 +	114 -	27 -	1 -	1 -	1 -	1	0 -	1	12
MAS #6	61.3	53.6 -	115	30 -	1	2	3	2 +	1	2	11
VA08MAS1-188-6-4-1	61.0	56.0 +	114 -	30 -	1	0 -	1 -	2	1	1	12
VA11W-279	60.8	56.6 +	112 -	28 -	2 +	0 -	0 -	1	1 -	1	14 +
Dyna-Gro 9772	60.7	53.1 -	115	32	2	2	2	1	2 +	1	12
SY 547	60.7	55.9 +	115	33 +	2 +	0 -	2 -	3 +	2	1	13 +
AgriMAXX 464	60.6	52.9 -	115	33 +	2	3	2 -	1 -	2 +	1	11
Featherstone 73	60.4	57.1 +	115	31	1	2	0 -	2 +	0 -	1	13 +
VA13W-38	60.0	57.0 +	111 -	30 -	2	0 -	1 -	1	2	1	15 +
VA12FHB-8	59.8	54.1 -	113 -	30 -	3 +	1 -	2 -	1	3 +	1	14 +
SH 7200	59.7	56.3 +	112 -	32	2 +	2	1 -	1	3 +	1	15 +
SY 007	58.9	55.1	113 -	31	2	1 -	6 +	1	1	2	13 +
VA11W-313	58.6	54.1 -	111 -	28 -	3 +	2	2 -	1	0 -	1	15 +
Pioneer Brand 26R36	58.5 -	55.8 +	117 +	32	2	5 +	2	1	0 -	3	9 -
Dyna-Gro 9223	57.8 -	54.0 -	117 +	33 +	2	4 +	7 +	2	1 -	4 +	11
Featherstone VA258	57.1 -	54.2 -	116 +	33 +	2 +	1 -	2 -	2 +	7 +	1	12
MAS #42	56.9 -	54.4 -	117 +	33 +	1 -	5 +	7 +	1	2 +	2	11 -
Southern Harvest 4300	56.8 -	53.1 -	117 +	31	2	3 +	5 +	2	4 +	2	9 -
SY Harrison	56.3 -	53.9 -	116 +	31	1	4 +	5 +	2	1 -	3 +	10 -
USG 3316	56.1 -	54.2 -	117 +	33 +	1 -	5 +	7 +	1	4 +	3	10 -

Table 22. Two-year average summary of performance of entries in the Virginia Tech Wheat Tests, 2016 and 2017 harvests.

Line	Grain Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Mature Height (In)		Plant Lodging (0-9)		Powdery Mildew (0-9)		Leaf Rust (0-9)		BYD Virus[1] (0-9)		Stripe Rust (0-9)		Leaf Blotch (0-9)		Early Height (In)	
	(11)		(11)		(4)		(5)		(8)		(7)		(7)		(4)		(5)		(1)		(3)	
MBX 16-B-203	55.4	-	54.0	-	118	+	33	+	1	-	6	+	7	+	2		3	+	3	+	9	-
Oakes	54.6	-	58.0	+	116		31		2	+	4	+	4	+	2		2		2		12	
VA07MAS3-7304-3-1-2-3	54.5	-	55.4		109	-	27	-	3	+	2		1	-	2	+	1		1		17	+
Progeny 243	54.1	-	54.7		115		33	+	1	-	4	+	4	+	2	+	1		3	+	12	
VA14FHB-28	53.7	-	56.0	+	110	-	30	-	2		2		1	-	1		1		2		16	+
Dyna-Gro 9692	52.6	-	53.8	-	117	+	33	+	1	-	5	+	7	+	1		2		4	+	10	-
Southern Harvest 4400	51.2	-	54.8		118	+	34	+	1		4	+	4	+	1		0	-	2		9	-
Progeny 357	50.8	-	51.9	-	117	+	32		2		3	+	7	+	2	+	1		3	+	11	
Massey	41.3	-	55.1		113	-	32		5	+	1	-	8	+	2	+	2		1		17	+
Average	61.3		55.2		115		31		2		2		3		1		1		2		12	
LSD (O.05)	2.8		0.5		1		1		0		1		1		1		1		1		1	
C.V.	10.6		2.3		1		5		59		40		38		53		84		36		10	

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.

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

[1] BYD = Barley Yellow Dwarf Virus.

Table 23. Three-year average summary of performance of entries in the Virginia Tech Wheat Tests, 2015, 2016, and 2017 harvests.

Line	Grain Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Mature Height (In)		Plant Lodging (0-9)		Powdery Mildew (0-9)		Leaf Rust (0-9)		BYD Virus[1] (0-9)	
	(18)		(18)		(6)		(8)		(11)		(10)		(9)		(6)	
Pioneer Brand 26R59	70.0	+	55.5		119		29	-	1	-	1	-	4	+	2	+
Hilliard	69.5	+	56.5	+	119	-	33	+	2		1	-	2	-	1	
L11550	68.4	+	56.9	+	121	+	32		2		2		1	-	1	
USG 3895	68.0	+	55.0		120	+	31		1	-	3	+	1	-	1	-
VA12W-31	67.5	+	56.5	+	120	+	31		2	+	1	-	1	-	1	
Pioneer Brand 26R10	66.9	+	55.2		121	+	31		1	-	3	+	6	+	1	
VA12W-72	66.7	+	55.5		117	-	31	-	2		1	-	2	-	1	-
MBX 14-S-210	66.6	+	55.4		121	+	34	+	1	-	1	-	1	-	1	
AgriMAXX 415	66.6	+	56.9	+	120	+	32		1	-	3	+	3		1	
CROPLAN 8530	66.4	+	54.0	-	118	-	32		2		1	-	1	-	1	
VA12W-248	66.3	+	55.8	+	118	-	34	+	3	+	2		1	-	1	
MAS #7	66.2	+	55.2		121	+	33	+	2		1	-	5	+	1	
Shirley	65.9		53.9	-	120	+	31	-	2		0	-	1	-	1	
USG 3404	65.9		55.3		121	+	32		1	-	2		4	+	1	
AgriMAXX 444	65.8		55.1		122	+	32		1		2		4	+	1	-
AgriMAXX 446	65.7		55.5		121	+	32		1	-	3	+	5	+	1	
VA12W-68	65.4		55.8	+	117	-	31	-	2		1	-	1	-	1	-
CROPLAN 8415	64.9		56.0	+	118	-	32		2	+	0	-	4	+	2	
Dyna-Gro 9522	64.7		55.2		121	+	32		1	-	2	+	4	+	1	
VA11W-279	64.4		56.7	+	116	-	29	-	2	+	0	-	0	-	1	
SH 7200	64.4		56.5	+	117	-	33	+	3	+	2		1	-	1	
VA12FHB-8	64.2		54.5	-	118	-	31		3	+	1	-	2	-	1	
MAS #35	63.4		55.3		121	+	31	-	1	-	3	+	2	-	1	
AgriMAXX 464	63.3		53.1	-	119		33	+	2		2		2	-	1	-
SY 547	63.2		55.8	+	119		33	+	2		0	-	2	-	3	+
MAS #6	62.8		53.6	-	119		30	-	1	-	2		3		2	+
VA11W-313	62.5		54.1	-	115	-	29	-	2	+	2		1	-	1	
Pioneer Brand 26R53	62.3		56.8	+	120	+	30	-	1	-	3	+	4	+	1	
Featherstone 73	62.2		56.7	+	120	+	32		1		1	-	0	-	2	+
SY 007	62.1		55.4		117	-	32		2		1	-	5	+	1	
Dyna-Gro 9223	61.9		54.3	-	121	+	34	+	2		4	+	7	+	2	+
VA13W-38	61.8		56.9	+	116	-	31	-	2		0	-	1	-	1	
Southern Harvest 4300	61.3	-	53.5	-	120	+	31		2		3	+	5	+	2	+
Featherstone VA258	61.3	-	54.9	-	120	+	34	+	2	+	1	-	2	-	2	+
MAS #42	61.2	-	54.9	-	121	+	33	+	1	-	5	+	7	+	1	
Pioneer Brand 26R36	60.1	-	55.6		121	+	32		2		5	+	2	-	1	
Southern Harvest 4400	58.6	-	55.1		122	+	34	+	1	-	4	+	4	+	2	
Progeny 357	55.7	-	52.4	-	121	+	32		2		3	+	7	+	2	
Massey	48.7	-	55.8	+	118	-	33	+	4	+	1	-	8	+	2	+
Average	63.9		55.3		119		32		2		2		3		1	

Table 23. Three-year average summary of performance of entries in the Virginia Tech Wheat Tests, 2015, 2016, and 2017 harvests.

Line	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Powdery Mildew (0-9)	Leaf Rust (0-9)	BYD Virus[1] (0-9)
	(18)	(18)	(6)	(8)	(11)	(10)	(9)	(6)
LSD (0.05)	2.3	0.4	0	1	0	0	1	0
C.V.	10.4	2.2	1	5	59	46	39	50

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.

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

[1] BYD = Barley Yellow Dwarf Virus.

Table 24. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern VA AREC in Warsaw, VA, 2017 harvest.

Line	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Heade l (Julian)	Height (In)	Plant Lodging (0-9)	Powdery Mildew (0-9)	Leaf Rust (0-9)	Stripe Rust (0-9)	Early Height (In)	Spring Freeze[1] (0-9)
CROPLAN 8550	---	93.7 +	112.8 +	60.3 +	109	35 +	2	1 -	1	0	10	0
AgriMAXX 473	---	---	111.6 +	60.1	109	34 +	2	1 -	1	1	10	0
MAX116	---	---	111.3 +	60.4 +	109	34 +	4	1	2	0	10	0
Dyna-Gro 9701	---	---	111.2 +	60.0	109	35 +	1	0 -	2	0	10	0
Armor MAYHEM	---	---	110.4 +	59.6	109 +	34 +	3	1 -	2	0	10	1
#Bullet	---	87.3 +	109.2 +	60.5 +	109 +	35 +	1	1 -	2	0	9	0
USG 3536	---	---	105.8 +	60.4 +	109 +	34 +	2	1 -	2	0	9	0
CROPLAN SRW 9606	---	---	104.1 +	58.7	108	32	0	2	2	0	9 -	0
Pioneer Brand 26R59	87.4 +	85.8 +	103.7 +	60.0	108	29 -	0	1 -	3	0	9	1
Pioneer XW15C	---	---	103.7 +	58.6	108	32	4	2	2	0	8 -	0
USG 3458	---	---	102.5 +	58.5	108	31	0	2	3	0	9 -	0
CROPLAN 8530	83.2 +	84.3 +	101.2 +	57.5 -	107	31	2	1 -	1 -	1	10	1
AgriMAXX 474	---	83.3 +	101.1 +	58.2	108	31	1	1 -	4 +	0	9 -	0
Armor RIPTIDE	---	---	100.4 +	58.8	107	31	0	1 -	4 +	0	9	0
VA09MAS2-131-6-2-4	---	---	100.3 +	58.7	106 -	28 -	2	1	1	0	10	1
VA12W-72	82.6 +	85.5 +	100.2 +	59.0	107	31	1	0 -	1 -	0	11	2
MBX 17-M-245	---	---	100.1 +	58.5	108	31	1	1	5 +	0	9	0
MBX 14-S-210	81.7 +	81.1 +	100.1 +	58.9	109 +	35 +	1	1	1 -	1	9	0
SY Viper	---	84.6 +	99.4 +	59.9	107 -	33 +	3	2	3	0	11	0
VA14FHB-22	---	---	99.3	60.8 +	109	32	5 +	2	0 -	0	11	1
Pioneer Brand 26R41	---	81.4 +	99.1	59.4	109 +	31	1	1	2	0	10	0
MAS #7	84.1 +	84.4 +	98.2	59.8	109 +	33 +	1	1	4 +	0	8 -	0
AgriMAXX 415	80.8 +	81.1 +	98.1	60.2 +	109	32	1	2	2	0	9	0
Dyna-Gro 9862	---	---	98.1	59.5	110 +	32	3	3 +	5 +	0	9 -	0
MAX316	---	---	97.8	59.2	110 +	34 +	2	3 +	3	0	8 -	0
SH EXP 1706	---	---	97.7	60.6 +	110 +	32	4	1	1 -	0	10	0
WX16722	---	---	97.7	58.4	108	31	1	1	5 +	0	9	0
USG 3228	---	---	97.5	57.6 -	107	31	1	3 +	4 +	0	11	1
VA14W-29	---	85.4 +	97.4	60.3 +	110 +	32	1	2	1 -	0	10	0

Table 24. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern VA AREC in Warsaw, VA, 2017 harvest.

Line	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Headed (Julian)	Height (In)	Plant Lodging (0-9)	Powdery Mildew (0-9)	Leaf Rust (0-9)	Stripe Rust (0-9)	Early Height (In)	Spring Freeze[1] (0-9)
VA09MAS8-34-5-2	---	---	97.1	57.8 -	109	34 +	3	0 -	1	0	9 -	0
VA09MAS1-12-5-1-3	---	---	96.8	60.5 +	109 +	33 +	3	0 -	0 -	0	11	0
USG 3895	83.2 +	82.9 +	96.7	58.6	108	31	1	3 +	1	0	9	0
VA11W-108PA	---	84.6 +	96.4	59.9	108	32	2	0 -	2	0	12	1
AgriMAXX 463	---	---	96.2	56.9 -	107 -	30	1	4 +	4 +	0	9	2
USG 3404	76.9	77.0	96.2	59.0	110 +	33	1	2	3	0	10	0
Armor ARW1610	---	---	95.8	60.4 +	110 +	32	5 +	2	1	0	10	0
DH11SRW061-16	---	---	95.7	60.2 +	106 -	29 -	2	0 -	1 -	0	13 +	3
Featherstone 73	78.5	79.5	95.7	61.3 +	108	33 +	1	1	1 -	0	11	0
DH11SRW069-70	---	---	95.7	58.2	111 +	32	2	2	3	0	10	0
Dyna-Gro 9522	78.4	77.7	95.4	59.1	111 +	32	0	2	3	0	9 -	0
#Warrior	---	---	95.2	58.4	108	30	1	1	4 +	0	9 -	0
DH11SRW070-14	---	85.1 +	94.7	57.6 -	107 -	26 -	1	0 -	0 -	0	13 +	3
Dyna-Gro 9600	---	77.4	94.6	57.4 -	107 -	32	1	1 -	1 -	2	10	1
MBX 17-P-275	---	---	94.5	57.5 -	107	31	2	3 +	4 +	0	11	2
VA09MAS2-131-6-2	---	---	94.1	58.8	106 -	26 -	0	0 -	1 -	0	10	1
Dyna-Gro 9772	---	76.9	94.1	55.3 -	107	33 +	1	3 +	2	0	10	1
L11541	---	79.7	93.9	61.4 +	110 +	31	1	1 -	0 -	0	8 -	0
MAS #61	---	82.5 +	93.9	57.3 -	106 -	31	6 +	2	4 +	1	9	0
MAS #6	79.8	81.4 +	93.8	57.3 -	108	30 -	1	2	2	0	10	0
Pioneer Brand 26R10	76.7	74.1	93.7	58.3	110 +	31	2	4 +	5 +	0	10	0
Dyna-Gro 9750	---	---	93.5	57.2 -	107	30	0	2	4 +	0	10	0
15MDX4	---	---	93.1	61.3 +	109 +	30	1	0 -	0 -	0	9	0
DH12SRW057-006	---	---	93.0	61.5 +	110 +	30 -	1	0 -	2	0	9 -	0
VA14FHB-29	---	---	92.9	60.6 +	108	31	5 +	2	0 -	0	11	3
CROPLAN 8415	81.0 +	80.9	92.8	58.7	108	31	3	0 -	3	0	11	3
VA09MAS6-122-7-1	---	82.2 +	92.7	59.2	106 -	27 -	0	0 -	1 -	0	12	1
VA12W-68	79.1	81.1 +	92.7	58.2	106 -	29 -	5 +	1	1 -	0	13 +	2
VA15W-63	---	---	92.6	58.6	108	31	1	0 -	1 -	3 +	9 -	0

Table 24. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern VA AREC in Warsaw, VA, 2017 harvest.

Line	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Headed (Julian)	Height (In)	Plant Lodging (0-9)	Powdery Mildew (0-9)	Leaf Rust (0-9)	Stripe Rust (0-9)	Early Height (In)	Spring Freeze[1] (0-9)
PGX 16-3	---	---	92.6	58.8	109	32	2	1	5 +	0	8 -	0
Pioneer Brand 26R36	71.8 -	71.9	92.6	59.4	109	33 +	2	5 +	2	0	9 -	0
L11550	82.3 +	83.1 +	92.4	60.5 +	110 +	32	3	1	1	0	9	0
SY 100	---	---	92.4	57.2 -	109	30 -	2	2	4 +	0	10	0
VA09MAS6-122-7-1-4	---	---	92.2	58.9	104 -	27 -	2	1	1 -	0	13 +	2
VA08MAS1-188-6-4-1	---	74.9	92.0	58.6	106 -	29 -	1	0 -	1 -	1	11	0
AgriMAXX 446	77.7	74.6	91.6	59.3	110 +	32	0	3 +	3	0	9 -	0
VA09MAS1-12-5-1	---	---	91.6	60.4 +	109	32	4	3 +	1 -	0	11	0
MAS #67	---	82.1 +	91.4	56.9 -	107	28 -	2	4 +	5 +	0	12	3
VA15W-94	---	---	91.2	58.5	107 -	31	4	1 -	1 -	0	13 +	3
CROPLAN SRW 9415	---	---	91.2	59.6	110 +	32	1	3 +	3	0	9	0
VA12W-31	81.1 +	79.0	91.1	58.5	109	32	2	0 -	2	1	9 -	0
Hilliard	82.6 +	82.7 +	91.0	59.4	109	32	3	0 -	1	0	11	1
L11538	---	---	91.0	59.7	109 +	33 +	4	2	2	0	12	1
VA09MAS1-12-8-4	---	77.9	90.8	60.2 +	107	31	1	4 +	0 -	0	10	0
AgriMAXX 444	76.2	76.0	90.6	58.2	110 +	32	2	2	4 +	0	10	0
MAX216	---	---	90.6	59.5	107	29 -	2	1	4 +	0	10	0
15MW133	---	---	90.3	61.7 +	109 +	32	2	0 -	0 -	0	10	0
#Turbo	---	---	90.3	58.8	107	30	1	0 -	1 -	0	12 +	2
DH12SRW056-058	---	---	90.3	59.9	108	32	2	3	2	0	12 +	5
Armor NEMESIS	---	---	90.0	60.7 +	110 +	31	4	2	0 -	1	10	0
Progeny 16-4	---	---	89.8	59.4	109	33	0	0 -	1 -	0	11	1
VA14W-28	---	---	89.6	60.6 +	109	30	1	1 -	1 -	0	11	1
VA07MAS1-7047-1-1-4-2	---	---	89.4	59.2	106 -	27 -	4	0 -	1 -	0	12	4
SY 547	77.3	74.8	89.4	59.5	107	34 +	1	0 -	3	1	11	0
DH11SRW065-26	---	---	89.3	57.5 -	107 -	29 -	2	2	1 -	0	13 +	4
PGX 14-5	---	---	89.3	61.2 +	108	36 +	2	4 +	4 +	0	10	0
VA13W-38	73.3	75.2	89.3	60.3 +	105 -	31	1	0 -	1	2 +	12 +	3
MAS #35	76.7	76.7	89.1	59.2	109 +	31	0	3 +	2	2	8 -	0

Table 24. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern VA AREC in Warsaw, VA, 2017 harvest.

Line	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Heade l (Julian)	Height (In)	Plant Lodging (0-9)	Powdery Mildew (0-9)	Leaf Rust (0-9)	Stripe Rust (0-9)	Early Height (In)	Spring Freeze[1] (0-9)
VA09MAS6-122-7-1-1	---	---	89.1	58.5	106 -	27 -	3	1	1 -	0	13 +	0
Southern Harvest 4400	71.7 -	68.9 -	89.0	60.4 +	111 +	34 +	1	5 +	3	0	9 -	0
USG 3197	---	76.8	88.8	56.5 -	107	34 +	1	2	2	2	10	1
VA15W-101	---	---	88.2	58.2	106 -	28 -	3	1 -	1 -	0	12 +	2
VA09MAS1-12-5-1-1	---	---	88.1	60.0	109 +	32	6 +	3 +	1 -	0	11	0
Pioneer Brand 26R53	72.4 -	71.4	87.9	60.5 +	108	30	0	3 +	3	0	10	1
VA09MAS3-34-2-1	---	---	87.8	57.5 -	109 +	29 -	5 +	3 +	1 -	0	13 +	2
VA12W-248	81.5 +	80.9	87.6	59.6	107 -	33	5 +	2	2	5 +	11	0
AgriMAXX 464	75.0	77.0	87.3	55.7 -	107	33 +	0	2	3	2	10	0
TN1604	---	---	86.8	57.4 -	109 +	32	3	1	1 -	0	9	0
TX EL2	---	---	86.8	58.1	108	31	4	1	1 -	0	12	0
VA11W-279	79.7	78.8	86.6	59.4	106 -	28 -	2	0 -	0 -	0	13 +	3
VA14W-32	---	---	86.5	58.9	106 -	29 -	7 +	2	2	0	13 +	2
VA13W-174	---	76.8	86.3	59.0	106 -	31	3	0 -	1 -	3 +	12 +	2
USG 3549	---	---	85.9	60.0	109	34 +	3	4 +	1	1	11	0
SH 7200	76.1	74.8	85.9	58.8	107 -	32	5 +	1	1 -	3 +	13 +	3
Progeny 16-1	---	---	85.8	59.3	109 +	30	0	1	1 -	0	12 +	1
#BOSS	---	---	85.7	56.3 -	108	31	2	2	3	0	11	0
DH11SRW065-23	---	---	85.7	59.4	112 +	33 +	3	1 -	1 -	0	10	1
SY 007	71.8 -	68.1 -	85.5	57.5 -	107 -	31	2	2	7 +	0	11	1
NC13-21213	---	---	84.6	60.1 +	108	31	4	1 -	1 -	0	11	1
GAJT 141-14E45	---	---	84.1	59.9	108	31	3	0 -	1 -	0	12	1
Dyna-Gro 9223	70.2 -	67.6 -	83.8	58.3	109 +	34 +	3	5 +	5 +	0	10	0
MAX516	---	---	83.5	59.8	105 -	32	4	5 +	2	0	10	1
Progeny 243	---	64.4 -	83.4	59.5	107	33 +	0	3 +	4 +	1	11	0
SY Harrison	---	68.3 -	83.1	58.2	108	32	0	5 +	4 +	0	9	0
VA07MAS3-7304-3-1-2-3	---	73.2	82.1	59.2	103 -	27 -	3	3 +	1 -	0	15 +	6
VA11W-313	77.3	74.7	81.1 -	56.6 -	106 -	28 -	3	3	5 +	0	13 +	3
Armor AMBUSH	---	---	80.9 -	60.6 +	109 +	33 +	1	6 +	2	0	10	1

Table 24. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern VA AREC in Warsaw, VA, 2017 harvest.

Line	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Headed (Julian)	Height (In)	Plant Lodging (0-9)	Powdery Mildew (0-9)	Leaf Rust (0-9)	Stripe Rust (0-9)	Early Height (In)	Spring Freeze[1] (0-9)
NC13-20332	---	---	80.6 -	59.3	108	31	6 +	0 -	1 -	0	13 +	1
15MDX17	---	---	79.9 -	58.9	107	31	1	1 -	1 -	0	12 +	1
Shirley	75.0	69.6 -	79.7 -	56.4 -	108	30	2	0 -	2	5 +	11	0
VA07MAS3-7304-3-2-4-2	---	---	79.4 -	57.2 -	105 -	26 -	1	0 -	1	0	14 +	4
NC13-23443	---	---	79.4 -	60.0	109	32	6 +	0 -	1	2 +	12 +	1
Oakes	---	64.7 -	78.6 -	61.4 +	108	31	2	3 +	3	0	9	1
TN1501	---	---	78.5 -	56.2 -	108	31	5 +	5 +	3	0	10	0
VA14FHB-28	---	72.4	77.7 -	58.9	105 -	30	3	4 +	1	0	14 +	5
GA051207-14E53	---	---	76.7 -	57.4 -	107 -	31	3	6 +	1 -	0	13 +	4
15MDX2	---	---	76.1 -	60.8 +	108	33 +	3	1	2	0	12	3
NC13-23449	---	---	75.7 -	60.2 +	109 +	33	3	0 -	1 -	3 +	11	0
GA07353-14E19	---	---	75.6 -	59.3	107	31	3	4 +	1 -	0	11	2
15MDX1	---	---	74.9 -	59.9	108	32	5 +	0 -	2	0	12	1
Dyna-Gro 9692	---	58.6 -	74.8 -	57.8	109 +	34 +	0	6 +	6 +	2 +	9 -	0
Southern Harvest 4300	70.3 -	65.5 -	74.4 -	56.3 -	109 +	31	1	3 +	5 +	3 +	8 -	0
VA12FHB-8	76.2	72.6	74.4 -	56.5 -	106 -	30	5 +	1 -	3	3 +	12 +	5
Featherstone VA258	72.7	69.2 -	73.5 -	56.4 -	109	34 +	4	1 -	2	7 +	11	1
USG 3316	---	58.2 -	71.8 -	57.3 -	109 +	33 +	1	6 +	6 +	3 +	9 -	0
Progeny 357	60.2 -	57.9 -	69.8 -	57.0 -	110 +	32	3	4 +	8 +	0	10	0
MAS #42	66.4 -	61.3 -	66.7 -	57.6 -	110 +	33 +	0	6 +	7 +	2	9 -	0
MBX 16-B-203	---	56.6 -	65.8 -	58.0	110 +	33 +	0	7 +	7 +	2	8 -	0
Massey	55.1 -	48.9 -	45.2 -	55.8 -	107 -	30	8 +	0 -	9 +	0	14 +	4
Average	76.5	75.8	90.3	58.9	108	31	2	2	2	0	10	1
LSD (0.05)	3.9	5.2	9.0	1.2	1	1	2	1	1	2	2	---
C.V.	6.1	6.7	6.1	1.4	1	3	82	39	38	257	11	---

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.

[1] Injury caused by spring freeze.

Table 25. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern Shore AREC, Painter, VA, 2017 harvest.

Line	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Powdery Mildew (0-9)	Leaf Rust (0-9)	Stripe Rust (0-9)
Dyna-Gro 9701	---	---	76.1 +	58.0 +	0.7	1.3 -	0.3
AgriMAXX 473	---	---	75.9 +	58.2 +	0.3	1.7 -	1.0
USG 3536	---	---	74.2 +	57.6	0.3	1.0 -	1.0
DH11SRW065-23	---	---	73.4 +	60.9 +	1.7	0.7 -	0.0
VA09MAS6-122-7-1	---	60.3 +	73.1 +	58.5 +	1.3	0.3 -	0.0
VA09MAS6-122-7-1-1	---	---	72.1 +	58.0 +	1.3	0.3 -	0.0
VA09MAS2-131-6-2-4	---	---	71.9 +	57.5	1.7	3.0	0.7
MAX116	---	---	71.5 +	58.2 +	0.7	1.3 -	0.0
VA11W-108PA	---	58.9 +	70.4 +	56.4	0.3	2.0	0.0
DH11SRW065-26	---	---	70.3 +	55.9	2.7	0.0 -	0.5
Armor MAYHEM	---	---	70.2 +	58.0 +	0.3	1.7 -	0.0
DH11SRW069-70	---	---	69.6 +	57.5	1.3	2.7	0.0
#Bullet	---	54.4 +	69.6 +	56.5	0.7	1.3 -	0.0
VA09MAS2-131-6-2	---	---	69.5 +	57.1	1.0	1.3 -	1.0
VA14W-29	---	57.9 +	69.2 +	58.6 +	2.0	2.0	0.0
Armor ARW1610	---	---	68.9 +	57.4	3.3	2.0	0.0
MAS #61	---	56.7 +	68.3 +	56.8	4.7 +	2.0	1.0
TX EL2	---	---	67.9 +	57.2	1.7	1.0 -	0.0
Hilliard	57.0 +	56.6 +	67.8 +	57.0	1.0	3.7	0.0
CROPLAN 8530	55.9 +	52.0 +	67.5 +	54.5 -	1.7	2.7	3.0 +
Armor NEMESIS	---	---	67.4 +	58.8 +	5.0 +	0.0 -	0.0
AgriMAXX 464	53.4	50.2	67.4 +	54.3 -	2.0	1.3 -	3.3 +
L11550	58.4 +	55.9 +	67.1 +	59.2 +	3.0	2.0	0.0
VA09MAS1-12-5-1-1	---	---	66.7 +	60.2 +	2.3	1.0 -	0.7
VA09MAS6-122-7-1-4	---	---	66.5 +	57.4	1.3	0.0 -	0.7
VA07MAS1-7047-1-1-4-2	---	---	66.5 +	56.5	0.0 -	0.3 -	0.0
VA12W-72	59.5 +	56.1 +	65.6 +	55.4	2.3	2.7	0.0
SH EXP 1706	---	---	65.5 +	59.1 +	2.7	3.0	0.0
VA12W-68	59.2 +	55.8 +	65.2 +	55.8	2.3	1.3 -	0.0
VA08MAS1-188-6-4-1	---	56.2 +	65.1	57.6	0.0 -	1.7 -	0.7
VA12W-31	54.1	51.3	64.9	57.5	2.7	1.0 -	0.7
VA13W-174	---	52.6 +	64.9	57.8	0.3	2.3	1.7
GAJT 141-14E45	---	---	64.7	58.7 +	1.7	0.0 -	0.0
VA09MAS1-12-5-1-3	---	---	64.6	59.3 +	0.3	0.7 -	0.0
VA11W-313	58.1 +	53.5 +	64.3	54.4 -	2.3	1.7 -	0.7
Dyna-Gro 9772	---	49.4	64.0	53.7 -	1.7	4.0	0.7
CROPLAN 8550	---	52.1 +	63.9	57.1	0.3	1.0 -	0.0
DH11SRW070-14	---	51.9 +	63.8	54.5 -	1.3	0.3 -	0.0
Pioneer XW15C	---	---	63.8	57.3	1.7	2.3	0.0
MAX216	---	---	63.6	58.2 +	0.7	6.7 +	0.7
VA14W-28	---	---	62.9	59.0 +	0.3	2.0	0.0

Table 25. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern Shore AREC, Painter, VA, 2017 harvest.

Line	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Powdery Mildew (0-9)	Leaf Rust (0-9)	Stripe Rust (0-9)
Pioneer Brand 26R41	---	48.8	62.8	55.7	0.7	3.3	0.7
USG 3895	58.9 +	51.9 +	62.8	56.4	4.7 +	3.3	0.0
Dyna-Gro 9750	---	---	62.7	54.5 -	4.7 +	4.0	0.0
VA09MAS1-12-5-1	---	---	62.7	60.3 +	2.0	0.7 -	0.0
Pioneer Brand 26R59	61.7 +	55.9 +	62.1	54.5 -	1.0	7.3 +	0.0
VA11W-279	58.6 +	55.2 +	62.1	58.6 +	0.3	0.0 -	0.0
USG 3197	---	50.4	61.9	53.7 -	3.0	2.3	1.3
VA12W-248	54.3	47.9	61.8	57.1	2.7	0.3 -	4.7 +
TN1604	---	---	61.5	57.7	3.0	1.0 -	0.0
VA15W-63	---	---	61.5	57.7	2.7	2.0	0.3
VA13W-38	53.3	48.6	61.2	57.7	0.3	1.0 -	0.7
Progeny 16-1	---	---	60.8	57.7	4.0 +	0.0 -	0.0
Shirley	50.0	45.3	60.6	56.8	0.7	1.3 -	5.7 +
USG 3228	---	---	60.6	54.7 -	4.0 +	3.3	0.0
NC13-20332	---	---	60.4	57.9 +	0.3	0.3 -	0.0
MBX 14-S-210	54.1	49.0	60.2	57.2	1.0	1.0 -	1.0
NC13-23443	---	---	60.1	59.1 +	0.3	1.0 -	1.7
SH 7200	56.6 +	50.0	60.0	57.3	3.0	2.0	1.3
AgriMAXX 463	---	---	59.8	54.5 -	3.7 +	4.0	0.0
VA09MAS3-34-2-1	---	---	59.2	56.4	1.0	1.7 -	0.0
VA09MAS8-34-5-2	---	---	58.9	56.6	1.0	0.3 -	0.0
MAS #67	---	52.7 +	58.9	53.9 -	3.3	3.7	0.0
Dyna-Gro 9600	---	47.8	58.7	54.1 -	1.3	2.3	3.7 +
DH11SRW061-16	---	---	58.6	59.4 +	2.0	0.3 -	0.0
VA07MAS3-7304-3-2-4-2	---	---	58.2	54.3 -	1.3	2.3	0.7
15MW133	---	---	58.1	60.7 +	5.0 +	0.0 -	0.0
GA07353-14E19	---	---	58.0	59.1 +	2.7	0.0 -	0.7
Progeny 16-4	---	---	58.0	57.6	0.7	0.3 -	0.0
VA15W-94	---	---	57.7	55.4	1.0	1.0 -	0.0
CROPLAN 8415	55.1	51.4	57.2	55.8	1.3	4.7	0.0
USG 3458	---	---	56.7	54.5 -	0.0 -	7.7 +	0.0
VA14FHB-28	---	46.2	56.7	56.8	3.0	0.3 -	0.7
VA15W-101	---	---	56.7	55.8	0.7	2.0	0.0
15MDX17	---	---	56.3	56.4	1.3	0.0 -	0.0
VA09MAS1-12-8-4	---	47.5	56.2	59.1 +	2.3	0.3 -	0.0
NC13-21213	---	---	55.8	59.4 +	1.7	0.3 -	0.0
Pioneer Brand 26R36	48.9	44.7	55.6	56.6	5.3 +	2.7	0.0
#Warrior	---	---	55.4	56.2	1.3	7.0 +	0.7
Pioneer Brand 26R53	48.7	46.2	54.6	56.1	3.0	6.7 +	0.0
AgriMAXX 415	51.5	46.8	54.5	56.7	2.7	6.0 +	0.0
WX16722	---	---	54.4	55.3	0.3	7.7 +	0.0

Table 25. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern Shore AREC, Painter, VA, 2017 harvest.

Line	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Powdery Mildew (0-9)	Leaf Rust (0-9)	Stripe Rust (0-9)
MBX 17-M-245	---	---	54.0	55.2	0.0 -	8.0 +	0.7
DH12SRW056-058	---	---	53.8	56.9	2.0	1.3 -	0.0
CROPLAN SRW 9415	---	---	53.8	54.3 -	1.3	6.3 +	0.0
MBX 17-P-275	---	---	53.4	54.0 -	3.0	4.3	0.0
CROPLAN SRW 9606	---	---	53.2	54.9	0.7	7.0 +	0.0
USG 3404	48.4	44.5	53.0	55.8	1.3	5.3 +	0.0
SY 007	47.4	40.3 -	52.8	53.8 -	0.0 -	6.0 +	0.7
MAX516	---	---	52.6	58.0 +	3.0	2.3	4.0 +
SY 547	51.5	45.7	52.5	57.7	0.0 -	3.0	0.7
AgriMAXX 474	---	49.3	52.5	54.8	0.0 -	7.7 +	0.7
L11538	---	---	52.3	54.5 -	2.3	5.0 +	0.0
GA051207-14E53	---	---	52.3	58.0 +	4.7 +	1.0 -	0.0
MAX316	---	---	52.2	54.4 -	3.0	6.5 +	0.0
VA12FHB-8	54.7	46.4	52.0	54.1 -	1.0	4.0	2.3 +
AgriMAXX 444	48.8	42.6	51.5	55.2	1.0	5.7 +	0.0
15MDX4	---	---	51.3	59.2 +	2.0	0.0 -	0.0
15MDX1	---	---	50.9	59.0 +	0.7	2.7	0.0
Dyna-Gro 9522	49.5	42.7	50.8	54.7	1.3	6.3 +	0.0
L11541	---	48.6	50.5	59.0 +	5.0 +	0.0 -	0.0
Armor RIPTIDE	---	---	50.2	53.9 -	1.0	7.7 +	0.7
VA07MAS3-7304-3-1-2-3	---	48.4	50.0	56.1	2.3	0.3 -	0.3
VA14FHB-22	---	---	49.8	59.2 +	2.7	1.0 -	0.0
USG 3549	---	---	49.4	57.7	4.7 +	3.0	0.7
PGX 16-3	---	---	49.3	54.2 -	1.0	8.0 +	0.0
SY Viper	---	44.9	49.2	56.3	0.3	7.7 +	0.0
MAS #7	53.2	46.0	48.9	56.3	0.3	8.0 +	0.7
DH12SRW057-006	---	---	48.4	59.9 +	0.3	3.0	0.0
#Turbo	---	---	48.2	56.6	0.3	1.0 -	0.0
Dyna-Gro 9862	---	---	48.0	55.9	1.3	6.0 +	0.0
NC13-23449	---	---	47.8	58.3 +	0.7	1.0 -	1.7
MAS #6	47.3	41.6	47.0 -	53.4 -	2.0	6.3 +	0.7
Featherstone VA258	48.1	40.5 -	46.9 -	53.6 -	0.3	3.0	6.0 +
15MDX2	---	---	46.7 -	60.0 +	4.0 +	1.3 -	0.0
#BOSS	---	---	45.5 -	51.9 -	1.0	5.0 +	1.7
SY Harrison	---	39.4 -	45.0 -	52.9 -	2.0	7.7 +	0.0
AgriMAXX 446	48.1	40.2 -	44.6 -	53.7 -	1.3	8.0 +	0.0
MAS #35	45.5 -	39.6 -	43.9 -	55.2	4.0 +	6.7 +	2.0
TN1501	---	---	43.8 -	52.2 -	2.7	7.0 +	0.0
Pioneer Brand 26R10	48.6	40.4 -	43.4 -	52.9 -	1.7	8.0 +	0.0
Progeny 243	---	37.1 -	43.4 -	53.7 -	1.7	7.3 +	0.7
Oakes	---	39.4 -	43.2 -	58.2 +	3.7 +	6.7 +	0.7

Table 25. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern Shore AREC, Painter, VA, 2017 harvest.

Line	3-year Av. Yield (Bu/a)		2-year Av. Yield (Bu/a)		Grain Yield (Bu/a)		Test Weight (Lb/bu)		Powdery Mildew (0-9)		Leaf Rust (0-9)		Stripe Rust (0-9)	
VA14FHB-29	---		---		43.0	-	59.9	+	3.0		0.0	-	0.0	
Dyna-Gro 9223	44.3	-	35.9	-	41.6	-	52.6	-	2.0		8.0	+	0.0	
PGX 14-5	---		---		41.0	-	57.2		1.3		7.3	+	0.0	
Featherstone 73	45.0	-	39.9	-	40.8	-	59.1	+	2.0		0.0	-	0.0	
VA14W-32	---		---		39.7	-	56.5		2.0		4.0		0.0	
Southern Harvest 4400	42.5	-	33.4	-	38.5	-	52.2	-	1.3		6.7	+	0.7	
Southern Harvest 4300	40.9	-	33.8	-	38.2	-	50.2	-	1.7		8.0	+	1.3	
USG 3316	---		30.9	-	37.4	-	52.4	-	4.3	+	7.3	+	3.0	+
Armor AMBUSH	---		---		36.0	-	58.7	+	6.7	+	2.7		0.7	
MBX 16-B-203	---		32.0	-	35.8	-	51.5	-	4.7	+	7.7	+	0.0	
SY 100	---		---		32.1	-	50.2	-	1.3		8.3	+	0.3	
MAS #42	39.8	-	29.8	-	30.9	-	52.8	-	3.3		7.7	+	0.0	
Dyna-Gro 9692	---		27.4	-	29.4	-	50.5	-	1.3		8.7	+	1.0	
Massey	37.4	-	28.1	-	25.2	-	53.6	-	0.0	-	9.0	+	0.0	
Progeny 357	32.9	-	22.5	-	22.5	-	46.7	-	1.0		9.0	+	0.0	
Average	50.8		46.1		56.3		56.3		1.8		3.3		0.5	
LSD (O.05)	4.9		5.4		8.9		1.6		1.6		1.4		1.5	
C.V.	11.9		11.9		11.1		1.9		52.2		26.7		170.8	

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

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

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

Note: this location was severely affected by stripe rust and leaf rust, reducing yields.

Table 26. Summary of performance of entries in the Virginia Tech Wheat Test, Southern Piedmont AREC, Blackstone, VA, 2017 harvest.

Line	Grain Yield (Bu/a)		Test Weight (Lb/bu)		Plant Lodging (0-9)		Powder / Mildew (0-9)		BYD Virus[1] (0-9)	
MBX 17-M-245	76.5	+	55.0		3		2		1	
#Warrior	73.3	+	54.9		3		3		1	
AgriMAXX 474	72.7	+	54.7		3		2		2	
VA09MAS1-12-5-1-3	71.9	+	57.4	+	4		0	-	1	
CROPLAN SRW 9415	71.7	+	54.5		3		4	+	1	
USG 3458	70.4	+	55.1		3		2		1	
Armor NEMESIS	69.7	+	56.0	+	3		1		2	
VA09MAS1-12-5-1-1	69.4	+	56.1	+	5	+	3		1	
SH EXP 1706	69.1	+	55.7	+	4		2		1	
L11541	68.9	+	56.7	+	3		3		3	+
AgriMAXX 446	68.5	+	55.0		3		3		1	
CROPLAN SRW 9606	68.3	+	54.1		4		3		1	
Pioneer XW15C	68.0	+	54.7		5	+	2		3	+
DH11SRW065-23	67.6	+	56.1	+	3		3		1	
MAS #7	67.0	+	55.0		3		1		2	
MBX 14-S-210	66.9	+	54.3		2	-	1	-	1	
Shirley	66.9	+	53.9		3		0	-	1	
PGX 16-3	66.7	+	55.0		3		1		2	
MAX316	66.6	+	54.5		3		2		1	
AgriMAXX 444	66.5	+	54.6		3		3		1	
Pioneer Brand 26R59	66.1		54.2		3		2		3	+
SY 007	65.8		53.7		4		2		1	
MAS #61	65.2		53.2	-	5	+	3	+	1	
PGX 14-5	65.0		56.6	+	3		3		1	
SY Viper	64.8		56.0	+	4		2		1	
AgriMAXX 415	64.7		54.8		3		3	+	1	
CROPLAN 8415	64.7		54.9		4		0	-	2	
CROPLAN 8550	64.7		53.7		2	-	1	-	1	
L11550	64.3		55.0		4		2		1	
Dyna-Gro 9862	64.2		55.1		3		2		1	
Hilliard	64.1		54.6		3		1	-	1	
15MW133	64.0		56.3	+	3		2		3	+
VA11W-108PA	63.9		53.9		3		1	-	2	
Pioneer Brand 26R10	63.8		54.5		3		4	+	1	
USG 3404	63.8		54.9		3		2		1	
Pioneer Brand 26R53	63.7		55.1		3		3	+	1	
VA15W-63	63.7		56.0	+	2	-	1	-	1	
VA09MAS2-131-6-2-4	63.5		53.4	-	3		1		1	
WX16722	63.4		54.5		3		2		3	+
AgriMAXX 473	63.4		53.8		3		1	-	1	

Table 26. Summary of performance of entries in the Virginia Tech Wheat Test, Southern Piedmont AREC, Blackstone, VA, 2017 harvest.

Line	Grain Yield (Bu/a)	Test Weight (Lb/bu)		Plant Lodging (0-9)		Powdery Mildew (0-9)		BYD Virus[1] (0-9)	
#Bullet	63.4	53.6		3		1	-	1	
Dyna-Gro 9701	63.3	52.7	-	2	-	1	-	3	
VA13W-174	63.1	55.4	+	3		0	-	1	
USG 3316	63.1	54.0		3		6	+	1	
VA12W-31	63.1	54.9		4		1	-	1	
MAX116	63.0	53.8		3		1		1	
MAS #35	62.9	54.1		2	-	5	+	2	
MBX 16-B-203	62.9	54.0		3		7	+	1	
Armor ARW1610	62.6	55.3	+	3		2		2	
DH12SRW057-006	62.6	57.4	+	3		0	-	1	
Armor MAYHEM	62.2	54.2		2	-	1	-	1	
VA14W-29	61.9	55.6	+	3		3		2	
CROPLAN 8530	61.7	53.0	-	3		2		1	
Oakes	61.6	56.7	+	4		4	+	1	
Armor RIPTIDE	61.5	54.4		2	-	2		4	+
Southern Harvest 4300	61.2	53.7		4		3	+	2	
Dyna-Gro 9522	60.6	54.7		3		3		2	
VA12W-248	60.6	55.4	+	4		2		1	
Dyna-Gro 9600	60.1	52.5	-	4		2		2	
L11538	60.1	53.5		5	+	4	+	1	
MAX216	60.1	55.3	+	4		2		1	
SH 7200	60.0	55.0		4		2		2	
DH11SRW069-70	60.0	54.1		4		2		1	
Dyna-Gro 9750	60.0	52.8	-	3		4	+	1	
VA11W-279	60.0	55.5	+	4		0	-	1	
AgriMAXX 464	59.9	50.7	-	4		3		1	
MAS #42	59.7	54.2		3		6	+	1	
MAX516	59.6	55.5	+	4		3	+	1	
AgriMAXX 463	59.5	52.3	-	3		4	+	1	
TN1604	59.4	54.1		3		3		3	+
USG 3197	58.9	50.5	-	4		2		1	
Progeny 357	58.9	52.4	-	4		5	+	3	
USG 3895	58.8	53.8		3		4	+	1	
MAS #67	58.8	52.3	-	3		4	+	1	
TX EL2	58.5	54.2		5	+	3		1	
#Turbo	58.4	54.3		2	-	2		1	
USG 3228	58.2	52.6	-	3		4	+	1	
DH11SRW070-14	58.2	54.0		2	-	0	-	1	
Pioneer Brand 26R41	58.1	53.1	-	2	-	1	-	1	
Southern Harvest 4400	58.0	54.1		2	-	5	+	3	

Table 26. Summary of performance of entries in the Virginia Tech Wheat Test, Southern Piedmont AREC, Blackstone, VA, 2017 harvest.

Line	Grain Yield (Bu/a)		Test Weight (Lb/bu)		Plant Lodging (0-9)		Powdery Mildew (0-9)		BYD Virus[1] (0-9)	
USG 3536	57.9		54.5		3		0	-	1	
SY Harrison	57.9		53.0	-	3		4	+	3	+
VA12W-72	57.8		53.4	-	3		1	-	1	
VA09MAS8-34-5-2	57.6		53.4	-	3		0	-	1	
SY 100	57.3		51.0	-	4		4	+	3	
VA08MAS1-188-6-4-1	57.1		54.6		3		0	-	1	
VA13W-38	56.9		55.2		4		0	-	1	
MBX 17-P-275	56.9		52.4	-	4		4	+	1	
Dyna-Gro 9692	56.8		54.0		3		6	+	2	
VA09MAS2-131-6-2	56.8		53.7		3		1		1	
VA09MAS1-12-5-1	56.5		57.3	+	4		3		1	
SY 547	56.4		54.4		2	-	0	-	5	+
Dyna-Gro 9223	56.2		54.7		3		5	+	2	
VA14W-28	55.7		56.0	+	3		2		1	
VA14FHB-29	55.7		55.5	+	4		2		1	
#BOSS	55.7		53.0	-	3		3		5	+
15MDX17	55.6		54.0		3		2		2	
VA12FHB-8	55.6		53.4	-	4		1		1	
VA09MAS1-12-8-4	55.4		55.4	+	3		4	+	2	
VA12W-68	54.9		54.0		4		2		1	
15MDX4	54.9		55.7	+	2	-	2		3	+
Progeny 243	54.9		53.7		3		4	+	3	+
Armor AMBUSH	54.8		55.6	+	3		6	+	3	+
MAS #6	54.5		52.6	-	3		2		3	+
Featherstone 73	54.4		55.5	+	3		2		4	+
DH11SRW061-16	54.4		55.3	+	3		0	-	2	
Dyna-Gro 9772	54.4		51.4	-	4		3		1	
NC13-23449	54.3		55.4	+	5	+	0	-	2	
15MDX1	54.3		55.0		5	+	1	-	1	
DH12SRW056-058	54.0		55.1		3		2		1	
VA07MAS3-7304-3-2-4-2	53.9		52.6	-	3		1	-	1	
Progeny 16-1	53.7		55.2		2	-	3		3	+
VA15W-94	53.2		53.5		4		1		1	
VA14FHB-22	53.0		55.4	+	5	+	3		1	
VA09MAS6-122-7-1-1	52.5		54.0		4		1	-	3	
Featherstone VA258	52.4		53.2	-	4		1		3	+
USG 3549	52.3		54.9		4		4	+	2	
VA07MAS1-7047-1-1-4-2	51.4	-	54.0		4		0	-	2	
VA15W-101	51.1	-	52.9	-	5	+	1	-	2	
VA09MAS3-34-2-1	51.1	-	53.7		4		2		3	+

Table 26. Summary of performance of entries in the Virginia Tech Wheat Test, Southern Piedmont AREC, Blackstone, VA, 2017 harvest.

Line	Grain Yield (Bu/a)		Test Weight (Lb/bu)		Plant Lodging (0-9)		Powder Mildew (0-9)		BYD Virus[1] (0-9)	
DH11SRW065-26	50.7	-	52.3	-	4		3		1	
Progeny 16-4	50.7	-	55.1		3		0	-	2	
15MDX2	50.4	-	56.9	+	2		2		2	
Pioneer Brand 26R36	50.3	-	53.7		5	+	6	+	1	
GA051207-14E53	50.3	-	53.8		5	+	5	+	2	
GAJT 141-14E45	50.1	-	54.7		3		1	-	4	+
VA14W-32	48.3	-	54.4		4		2		2	
NC13-23443	48.2	-	55.6	+	5	+	0	-	2	
TN1501	48.1	-	51.5	-	7	+	4	+	1	
VA14FHB-28	47.0	-	54.0		4		2		1	
VA11W-313	46.7	-	52.1	-	5	+	4	+	1	
VA07MAS3-7304-3-1-2-3	46.7	-	53.3	-	5	+	2		1	
GA07353-14E19	46.6	-	55.7	+	4		2		2	
VA09MAS6-122-7-1	46.5	-	54.0		3		2		1	
NC13-21213	46.3	-	55.7	+	4		1	-	2	
NC13-20332	45.3	-	53.8		4		0	-	5	+
VA09MAS6-122-7-1-4	44.9	-	53.4	-	3		1	-	2	
Massey	42.5	-	53.7		5	+	0	-	1	
Average	59.1		54.3		3		2		2	
LSD (O.05)	7.3		0.9		1		1		1	
C.V.	8.7		1.1		23		29		39	

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.

[1] BYD = Barley Yellow Dwarf Virus.

Table 27. Summary of performance of entries in the Virginia Tech Wheat Test, Northern Piedmont Center, Orange, VA, 2017 harvest.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Height (In)		Plant Lodging (0-9)	BYD Virus[1] (0-9)	
CROPLAN SRW 9415	109.7	+	53.6		34		0	3	
USG 3404	106.6	+	53.1		34		0	1	
CROPLAN SRW 9606	105.0	+	53.3		33		1	1	
USG 3458	104.2	+	53.4		33		0	4	
Pioneer Brand 26R36	104.1	+	54.2		32		0	1	
USG 3316	103.1	+	54.4		34		0	2	
AgriMAXX 415	102.2	+	54.8		32		0	2	
VA09MAS1-12-5-1-1	101.5	+	57.3	+	32		0	2	
CROPLAN 8550	100.8	+	53.7		34		1	1	
SH EXP 1706	100.3	+	55.3		32		0	1	
AgriMAXX 474	98.5	+	52.7	-	32		1	2	
AgriMAXX 444	98.5	+	53.0		34		1	1	
MAS #42	98.5	+	55.2		33		0	3	
USG 3895	98.2	+	54.2		34		1	1	
MBX 17-M-245	98.2	+	52.6	-	33		0	2	
L11538	98.0		54.6		35		0	1	
USG 3536	97.6		53.9		37	+	0	2	
TN1501	96.6		53.1		33		1	2	
VA12W-31	96.1		54.5		32		1	2	
VA12W-68	95.8		54.3		32		0	1	
MAX116	95.5		54.6		34		0	1	
VA12W-248	94.9		54.2		33		0	2	
Pioneer Brand 26R10	94.7		53.2		32		1	3	
#Bullet	94.6		54.3		34		0	2	
MBX 16-B-203	94.5		54.2		35		0	3	
WX16722	94.5		52.3	-	33		1	4	+
DH12SRW057-006	94.2		56.0	+	31		1	1	
AgriMAXX 463	94.0		53.2		30		0	2	
VA09MAS1-12-5-1	93.7		57.0	+	34		0	1	
Dyna-Gro 9750	93.7		53.8		33		0	2	
AgriMAXX 446	93.7		54.1		32		0	2	
MAS #61	93.6		52.5	-	33		0	2	
SY 007	93.5		54.6		33		0	2	
VA09MAS1-12-5-1-3	93.5		56.4	+	33		0	1	
VA09MAS8-34-5-2	92.4		51.9	-	33		1	1	
AgriMAXX 473	92.2		53.9		34		0	2	
VA12W-72	91.9		54.3		32		1	1	
Armor MAYHEM	91.6		54.0		35		1	2	
#Warrior	91.6		52.7	-	31		0	3	
Dyna-Gro 9701	91.5		53.8		34		0	2	
Dyna-Gro 9692	91.0		53.6		36	+	0	2	

Table 27. Summary of performance of entries in the Virginia Tech Wheat Test, Northern Piedmont Center, Orange, VA, 2017 harvest.

Line	Yield (Bu/a)	Test Weight (Lb/bu)	Height (In)	Plant Lodging (0-9)	BYD Virus[1] (0-9)
VA13W-174	90.8	54.9	34	0	1
Dyna-Gro 9862	90.7	56.1 +	32	0	2
MBX 17-P-275	90.7	53.4	31	1	1
Pioneer XW15C	90.3	53.9	34	0	3
CROPLAN 8415	90.2	54.5	31	0	2
USG 3197	90.1	51.6 -	36	1	1
Pioneer Brand 26R53	89.8	55.1	31	0	1
DH11SRW069-70	89.8	52.5 -	34	1	1
Dyna-Gro 9223	89.8	53.8	33	1	3
Armor ARW1610	89.3	54.7	33	0	3
Dyna-Gro 9600	89.3	50.6 -	34	0	3
TN1604	89.1	53.9	31	0	3
PGX 16-3	88.7	53.7	32	0	4 +
#Turbo	88.7	54.4	31	1	1 -
MAX216	88.7	53.6	28 -	0	1
Hilliard	88.6	53.6	33	0	1
CROPLAN 8530	88.6	51.2 -	33	1	2
DH11SRW065-23	88.6	56.9 +	35	0	2
VA09MAS2-131-6-2	88.6	53.2	26 -	1	1
Pioneer Brand 26R59	88.1	55.2	32	0	3
AgriMAXX 464	87.8	51.4 -	35	1	1
L11550	87.3	55.0	33	1	2
Shirley	87.3	52.4 -	31	0	3
MAX316	87.2	54.9	35	0	3
VA14FHB-22	87.2	54.5	32	0	1
Pioneer Brand 26R41	86.7	53.4	31	0	3
Dyna-Gro 9522	86.7	52.8 -	34	0	2
MBX 14-S-210	86.6	54.1	34	0	2
Armor AMBUSH	86.1	54.3	32	0	4 +
MAS #7	86.1	55.1	33	0	3
USG 3549	85.8	55.3	31	0	2
MAS #67	85.7	52.2 -	31	0	2
VA09MAS1-12-8-4	85.7	56.0 +	34	0	4
Dyna-Gro 9772	85.1	51.0 -	31	2 +	3
SY Harrison	85.0	51.8 -	33	0	3
VA11W-108PA	85.0	54.3	33	0	2
VA15W-63	84.3	54.5	32	0	1
VA09MAS3-34-2-1	84.3	53.7	30	0	3
DH12SRW056-058	84.2	56.2 +	33	0	1
L11541	83.8	55.1	31	1	2
Progeny 357	83.7	50.8 -	35	0	3

Table 27. Summary of performance of entries in the Virginia Tech Wheat Test, Northern Piedmont Center, Orange, VA, 2017 harvest.

Line	Yield (Bu/a)	Test Weight (Lb/bu)		Height (In)		Plant Lodging (0-9)	BYD Virus[1] (0-9)	
VA09MAS2-131-6-2-4	83.3	51.7	-	29		1	1	
Armor NEMESIS	83.2	54.6		33		1	1	
USG 3228	82.6	53.5		34		0	2	
Armor RIPTIDE	82.5	52.6	-	30		0	5	+
VA09MAS6-122-7-1	82.4	54.2		29		1	2	
Southern Harvest 4300	82.4	52.0	-	32		0	4	+
PGX 14-5	81.9	56.0	+	36	+	0	3	
MAS #35	81.7	53.0		31		1	3	
15MW133	81.7	54.7		33		0	2	
TX EL2	81.5	54.9		34		0	3	
VA11W-313	81.4	52.2	-	29		1	1	
SY 100	81.3	53.0		30		0	2	
VA07MAS3-7304-3-2-4-2	80.9	52.7	-	30		0	2	
SY Viper	80.5	56.0	+	32		0	3	
VA09MAS6-122-7-1-4	80.5	53.5		28	-	0	1	
VA14W-32	80.2	55.5	+	29		1	2	
Oakes	80.1	57.1	+	32		0	3	
NC13-21213	79.9	55.6	+	33		0	2	
VA07MAS3-7304-3-1-2-3	78.9	53.7		29		0	2	
MAX516	78.9	54.2		34		0	2	
VA12FHB-8	78.8	52.6	-	32		1	2	
Progeny 243	78.7	53.8		34		0	3	
VA11W-279	77.2	53.6		29		0	2	
VA14W-29	77.1	55.6	+	32		0	2	
SY 547	76.9	54.8		31		1	4	+
SH 7200	76.8	55.4	+	34		0	2	
VA09MAS6-122-7-1-1	76.7	53.3		31		0	2	
VA14FHB-29	76.5	55.7	+	34		0	1	
#BOSS	76.4	48.8	-	31		0	6	+
MAS #6	76.1	50.7	-	32		0	5	+
Featherstone VA258	76.0	54.0		30		0	4	
GA07353-14E19	75.5	56.5	+	34		0	2	
VA14W-28	75.2	55.5	+	32		0	3	
DH11SRW061-16	74.9	55.5	+	30		0	3	
VA08MAS1-188-6-4-1	74.8	53.9		32		0	3	
Progeny 16-4	74.3	55.4	+	31		0	2	
DH11SRW070-14	74.2	54.2		30		1	1	
VA14FHB-28	74.0	55.5	+	31		0	2	
Featherstone 73	73.9	55.3		30		0	3	
15MDX17	73.9	54.9		32		0	2	
VA15W-101	73.4	53.5		28	-	1	3	

Table 27. Summary of performance of entries in the Virginia Tech Wheat Test, Northern Piedmont Center, Orange, VA, 2017 harvest.

Line	Yield (Bu/a)		Test Weight (Lb/bu)		Height (In)		Plant Lodging (0-9)		BYD Virus[1] (0-9)	
15MDX4	73.3	-	56.0	+	31		0		2	
VA13W-38	73.3	-	55.1		32		0		1	
DH11SRW065-26	72.8	-	52.1	-	30		0		1	
NC13-23443	72.7	-	56.0	+	31		0		5	+
NC13-23449	72.1	-	55.4	+	31		0		4	+
VA15W-94	71.6	-	53.7		32		0		2	
GAJT 141-14E45	71.6	-	54.8		32		0		3	
Progeny 16-1	71.3	-	55.8	+	32		0		3	
15MDX2	69.5	-	58.3	+	34		0		4	+
15MDX1	65.7	-	55.4	+	33		0		3	
VA07MAS1-7047-1-1-4-2	65.0	-	54.4		27	-	1		3	
GA051207-14E53	64.8	-	54.0		33		0		4	
NC13-20332	61.8	-	57.1	+	30		1		6	+
Massey	60.8	-	54.3		33		0		4	
Southern Harvest 4400[2]	.		.		.		.		.	
Average	86.1		54.1		32		0		2	
LSD (O.05)	12.4		1.2		3		1		1	
C.V.	10.3		1.6		8		287		37	

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.

[1] BYD = Barley Yellow Dwarf Virus.

[2] This entry's seed did not arrive in time to be planted at this location.

Table 28. Summary of performance of entries in the Virginia Tech Wheat Test, Kentland farm, Blacksburg, VA, 2017 harvest.

Line	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Leaf Rust (0-9)
VA15W-63	---	---	105.7 +	57.1 +	117	35	0	0 -
DH12SRW057-006	---	---	103.0 +	59.5 +	118	32 -	0	0 -
CROPLAN 8550	---	94.7 +	101.5 +	56.1	118	37 +	1	1
Armor MAYHEM	---	---	101.4 +	56.3 +	118	36 +	1	2
USG 3458	---	---	101.0 +	55.2	116 -	36 +	2	5 +
Pioneer XW15C	---	---	99.9 +	55.9	117	37 +	2	1
#Bullet	---	88.5 +	99.8 +	55.9	118	37 +	0	1
MBX 17-M-245	---	---	99.1 +	54.9	116 -	36	0	4 +
AgriMAXX 474	---	89.3 +	98.3 +	54.7	116 -	36	2	4 +
CROPLAN 8530	91.1 +	92.4 +	97.7 +	52.9 -	116 -	36	1	1
AgriMAXX 473	---	---	97.6 +	55.8	118	36 +	0	2
Shirley	94.6 +	95.1 +	97.2 +	53.9 -	117	32 -	2	0 -
MAX116	---	---	97.1 +	55.6	118	38 +	0	2
#Warrior	---	---	96.8 +	54.8	116 -	35	0	4 +
VA12W-31	93.9 +	92.4 +	96.8 +	55.9	117	35	3	1
MBX 14-S-210	93.9 +	94.3 +	95.7 +	55.8	119 +	39 +	0	1
L11541	---	87.5	95.7 +	57.1 +	119 +	33	1	0 -
MAS #7	88.3	87.5	95.3 +	56.7 +	119 +	37 +	3	4 +
VA09MAS8-34-5-2	---	---	94.8 +	53.8 -	117	35	4	1
Armor NEMESIS	---	---	94.4 +	56.9 +	119 +	34	2	0 -
Dyna-Gro 9701	---	---	94.1 +	56.0	118	37 +	2	2
MAS #67	---	91.4 +	94.1 +	55.1	116 -	34	1	2
WX16722	---	---	94.0 +	54.3	116 -	35	0	4 +
CROPLAN 8415	83.8	81.2	93.1 +	55.2	118	34	2	3
AgriMAXX 415	87.3	88.3 +	92.9 +	57.2 +	117	37 +	1	2
USG 3536	---	---	92.8 +	55.5	118	37 +	1	1
MAX216	---	---	92.4 +	57.2 +	116 -	32 -	3	3
CROPLAN SRW 9415	---	---	92.4 +	55.6	119 +	37 +	0	3 +
Pioneer Brand 26R59	85.4	83.5	92.0 +	54.3	117	33	0	3 +
CROPLAN SRW 9606	---	---	91.9 +	56.1	116 -	35	3	2
Pioneer Brand 26R10	91.5 +	86.4	91.7 +	55.5	119 +	35	1	4 +
Pioneer Brand 26R41	---	87.4	91.2 +	55.7	118	32 -	1	1
Hilliard	93.7 +	94.5 +	90.8 +	56.3 +	117	36	2	1
DH11SRW069-70	---	---	90.8 +	54.6	119 +	35	1	1
Dyna-Gro 9750	---	---	90.6 +	55.2	116 -	33	0	2
USG 3228	---	---	90.4 +	55.2	117	32 -	1	1
Armor RIPTIDE	---	---	90.2	54.2	116 -	35	1	3
VA09MAS2-131-6-2	---	---	89.8	54.4	112 -	28 -	0	0 -
Dyna-Gro 9600	---	87.5	89.7	53.6 -	116 -	35	0	0 -
MAS #61	---	92.8 +	89.6	54.3	115 -	35	3	1
#Turbo	---	---	89.3	56.7 +	117	33	0	0 -

Table 28. Summary of performance of entries in the Virginia Tech Wheat Test, Kentland farm, Blacksburg, VA, 2017 harvest.

Line	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Leaf Rust (0-9)
MAX316	---	---	89.2	55.7	120 +	38 +	1	3 +
SY 100	---	---	89.1	53.6 -	119 +	35	0	3 +
VA12W-72	90.8 +	88.4 +	88.9	55.1	116 -	32 -	4	3
AgriMAXX 463	---	---	88.8	55.0	116 -	33	2	1
Progeny 16-4	---	---	88.5	56.2 +	118	34	3	0 -
AgriMAXX 444	85.7	83.6	88.5	54.6	120 +	36	0	2
MBX 17-P-275	---	---	88.3	54.9	117	34	3	3
Dyna-Gro 9862	---	---	88.3	56.7 +	119 +	35	1	3 +
VA14FHB-29	---	---	88.2	56.7 +	118	35	3	0 -
AgriMAXX 446	86.1	83.3	88.1	55.8	120 +	37 +	0	4 +
VA14FHB-22	---	---	87.8	56.5 +	118 +	34	3	0 -
Dyna-Gro 9772	---	84.2	87.7	52.9 -	116 -	37 +	2	2
SH EXP 1706	---	---	87.4	55.6	117	35	3	1
Featherstone 73	87.8	86.8	87.0	56.2 +	118	35	0	0 -
VA14W-28	---	---	86.2	56.7 +	118	32 -	1	1
VA09MAS1-12-5-1-1	---	---	85.9	58.0 +	118	36 +	1	1
Pioneer Brand 26R53	81.4	82.9	85.6	56.5 +	118 +	33	1	3
TX EL2	---	---	85.3	53.8 -	117	34	2	1
VA09MAS2-131-6-2-4	---	---	85.0	53.3 -	115 -	30 -	1	1
VA11W-108PA	---	88.6 +	84.6	55.6	117	35	2	1
DH11SRW061-16	---	---	84.5	57.1 +	117	32 -	1	0 -
VA09MAS1-12-5-1-3	---	---	84.3	56.8 +	119 +	36 +	5 +	1
MAS #6	84.2	85.2	84.0	52.3 -	116 -	32 -	1	2
Dyna-Gro 9522	84.6	77.9	83.9	54.6	120 +	36	0	2
VA12W-248	89.2	87.3	83.8	55.0	117	37 +	6 +	1
USG 3404	86.4	82.1	83.7	54.7	119 +	35	1	3
PGX 16-3	---	---	83.5	54.0	118	37 +	2	4 +
SY Viper	---	81.5	83.5	56.4 +	116 -	36	5 +	4 +
Armor ARW1610	---	---	83.3	55.5	118	35	3	1
Armor AMBUSH	---	---	83.1	55.2	118	35	0	1
USG 3895	87.6	84.5	83.1	53.2 -	118	34	0	1
VA12W-68	87.6	86.0	82.3	55.4	116 -	32 -	3	1
L11550	90.3 +	87.4	82.2	56.1	118	35	2	1
15MW133	---	---	82.2	56.9 +	119 +	34	1	0 -
DH12SRW056-058	---	---	82.0	56.7 +	117	35	1	1
#BOSS	---	---	81.9	52.3 -	117	34	0	1
SH 7200	87.5	81.5	81.9	56.1	117	35	3	2
VA14W-29	---	85.5	81.6	56.9 +	118 +	34	2	1
DH11SRW065-23	---	---	81.1	56.9 +	121 +	35	4 +	1
VA09MAS1-12-5-1	---	---	81.0	57.7 +	118	33	2	1
VA09MAS6-122-7-1	---	85.3	80.8	54.7	116 -	29 -	0	0 -

Table 28. Summary of performance of entries in the Virginia Tech Wheat Test, Kentland farm, Blacksburg, VA, 2017 harvest.

Line	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Leaf Rust (0-9)
VA08MAS1-188-6-4-1	---	84.2	79.9	55.1	114 -	31 -	0	0 -
USG 3197	---	82.1	79.4	51.8 -	117	38 +	4	1
VA12FHB-8	82.9	80.9	78.9	53.3 -	116 -	33	3	2
VA09MAS1-12-8-4	---	84.3	78.6	56.5 +	117	35	0	0 -
Progeny 243	---	77.7	78.5	54.9	116 -	38 +	0	3 +
Dyna-Gro 9223	78.7 -	72.3 -	78.2	55.1	119 +	37 +	1	6 +
DH11SRW070-14	---	80.1	77.8	52.9 -	117	28 -	0	0 -
SY 007	77.7 -	72.0 -	77.8	55.4	115 -	35	2	4 +
TN1604	---	---	77.7	54.5	119 +	35	4	1
SY 547	81.9	79.8	77.5	55.8	117	37 +	5 +	0 -
VA13W-38	85.6	79.7	77.5	57.0 +	117	33	3	0 -
Progeny 16-1	---	---	77.0	56.5 +	119 +	32 -	2	0 -
MAS #35	86.9	86.3	76.5	55.2	119 +	35	0	1
VA13W-174	---	72.9 -	75.8	55.6	116 -	35	0	1
VA07MAS3-7304-3-2-4-2	---	---	75.7	53.0 -	115 -	29 -	1	1
TN1501	---	---	74.7	54.4	118	36 +	2	3
SY Harrison	---	68.9 -	74.3	52.0 -	117	35	0	4 +
VA07MAS1-7047-1-1-4-2	---	---	74.0	54.8	116 -	29 -	4	1
VA09MAS6-122-7-1-1	---	---	73.7	53.8 -	116 -	29 -	3	0 -
VA11W-313	82.7	77.7	73.4	52.4 -	114 -	31 -	2	1
USG 3316	---	68.8 -	73.4	54.2	120 +	37 +	0	7 +
Featherstone VA258	85.8	79.6	73.2	53.3 -	119 +	37 +	1	2
L11538	---	---	73.2	54.9	119 +	35	5 +	1
AgriMAXX 464	82.4	77.4	73.2	50.7 -	117	36 +	3	2
VA11W-279	82.7	76.0	72.7 -	54.3	117	31 -	4 +	0 -
NC13-21213	---	---	71.1 -	54.6	118	34	7 +	1
VA09MAS6-122-7-1-4	---	---	70.9 -	53.7 -	115 -	29 -	4 +	1
Dyna-Gro 9692	---	66.8 -	70.7 -	54.2	118 +	35	0	7 +
GAJT 141-14E45	---	---	69.8 -	54.8	117	34	1	0 -
VA09MAS3-34-2-1	---	---	69.8 -	53.2 -	119 +	31 -	4	0 -
15MDX4	---	---	69.4 -	56.7 +	119 +	31 -	0	0 -
MBX 16-B-203	---	66.6 -	69.2 -	54.2	119 +	35	0	6 +
Southern Harvest 4300	78.9 -	73.9 -	69.1 -	52.1 -	118	34	0	4 +
GA07353-14E19	---	---	68.7 -	56.3 +	117	34	0	1
Progeny 357	72.1 -	65.6 -	68.3 -	50.7 -	119 +	36 +	1	6 +
VA15W-94	---	---	68.3 -	53.3 -	117	34	4 +	1
VA15W-101	---	---	67.8 -	52.6 -	117	32 -	5 +	1
VA14W-32	---	---	66.9 -	55.5	115 -	31 -	5 +	1
NC13-23443	---	---	66.0 -	56.0	118	33	4 +	1
Pioneer Brand 26R36	77.7 -	71.7 -	65.7 -	54.8	118	36	0	2
MAS #42	77.7 -	70.8 -	65.4 -	53.6 -	120 +	36	0	7 +

Table 28. Summary of performance of entries in the Virginia Tech Wheat Test, Kentland farm, Blacksburg, VA, 2017 harvest.

Line	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Leaf Rust (0-9)
VA07MAS3-7304-3-1-2-3	---	66.7 -	64.8 -	54.5	113 -	30 -	1	1
USG 3549	---	---	64.5 -	54.4	118	36 +	2	1
DH11SRW065-26	---	---	64.5 -	53.4 -	117	31 -	1	1
Oakes	---	68.5 -	63.8 -	56.8 +	119 +	33	1	3
Southern Harvest 4400	78.1 -	70.6 -	63.6 -	55.6	120 +	40 +	0	4 +
NC13-23449	---	---	61.5 -	55.4	118	35	2	1
VA14FHB-28	---	70.4 -	61.1 -	55.6	114 -	33	1	1
15MDX2	---	---	60.6 -	57.2 +	118	35	2	1
MAX516	---	---	59.7 -	55.5	113 -	35	3	1
GA051207-14E53	---	---	59.5 -	54.8	117	33	0	0 -
PGX 14-5	---	---	57.6 -	56.0	118	37 +	6 +	2
NC13-20332	---	---	55.0 -	54.7	121 +	34	4	1
15MDX17	---	---	54.4 -	54.1	118	31 -	2	1
15MDX1	---	---	53.6 -	54.8	118	33	5 +	1
Massey	55.4 -	45.8 -	35.5 -	50.7 -	118	35	7 +	9 +
Average	84.6	81.2	81.6	55.0	117	34	2	2
LSD (0.05)	5.4	7.0	8.7	1.1	1	2	2	1
C.V.	6.9	7.5	7.5	1.4	1	4	93	58

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

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

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

Table 29. Summary of performance of entries in the Virginia Tech Wheat Test, planted No-Till at Tidewater AREC, Holland, VA, 2017 harvest.

Line	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Plant Lodging (0-9)	BYD Virus[1] (0-9)
Dyna-Gro 9522	55.7	55.3	63.4 +	53.2	3	1
MBX 16-B-203	---	55.2	62.1 +	53.8	2	1
CROPLAN SRW 9415	---	---	61.1 +	53.6	2	0
AgriMAXX 444	56.0	54.1	61.0 +	53.9	2	0
USG 3316	---	51.1	60.3 +	53.5	2 -	0
Pioneer Brand 26R10	53.9	49.9	59.0 +	53.2	2	1
USG 3404	54.2	50.8	57.9 +	53.2	3	1
PGX 16-3	---	---	56.9 +	53.0	4	1
MAS #42	56.7	52.9	56.4 +	53.7	3	1
AgriMAXX 446	55.0	51.5	55.8 +	53.4	2 -	1
Dyna-Gro 9692	---	46.6	55.8 +	54.0	3	0
MBX 14-S-210	51.3	52.7	55.6 +	52.3	3	1
Progeny 357	52.4	47.6	54.9 +	50.9	2	1
Pioneer Brand 26R36	52.0	49.9	54.8 +	53.4	4	1
USG 3895	55.2	54.5	54.4 +	52.9	3	1
AgriMAXX 415	54.4	53.0	54.2 +	53.7	2	0
Pioneer Brand 26R41	---	55.6	54.0 +	52.6	3	0
Armor MAYHEM	---	---	53.9	52.0	3	1
SH EXP 1706	---	---	53.5	53.8	4	1
DH11SRW065-23	---	---	53.2	54.5	3	1
SY Harrison	---	49.1	53.1	52.6	4	1
MAS #35	53.8	52.0	52.9	53.3	3	1
Dyna-Gro 9223	53.7	47.9	52.8	52.9	4	1
AgriMAXX 473	---	---	52.7	52.2	4	1
Southern Harvest 4400	50.6	45.7	51.7	52.5	3	1
USG 3536	---	---	51.5	52.0	3	0
CROPLAN SRW 9606	---	---	51.4	52.7	4	1
Pioneer Brand 26R59	59.3 +	55.2	51.2	52.6	4	1
Pioneer Brand 26R53	49.4	49.9	50.8	54.2	3	1
Hilliard	54.2	52.8	50.5	53.3	3	1
VA12W-68	51.9	53.4	50.4	52.1	3	1
SH 7200	57.0	50.9	50.2	53.2	3	1
CROPLAN 8550	---	51.2	50.1	51.9	2 -	1
Dyna-Gro 9600	---	51.0	49.9	51.2	3	1
DH12SRW056-058	---	---	49.8	53.4	2 -	3 +
VA09MAS2-131-6-2	---	---	49.7	52.4	3	2
L11541	---	48.9	49.7	54.8	3	0
L11550	54.8	53.2	49.6	53.8	4	1
Southern Harvest 4300	52.7	50.9	49.3	52.0	5	1
AgriMAXX 464	54.6	51.3	48.8	50.2	4	0
L11538	---	---	48.8	51.5	4	1

Table 29. Summary of performance of entries in the Virginia Tech Wheat Test, planted No-Till at Tidewater AREC, Holland, VA, 2017 harvest.

Line	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)		Plant Lodging (0-9)		BYD Virus[1] (0-9)	
Armor ARW1610	---	---	48.7	53.9		5		1	
Shirley	51.4	50.3	48.6	52.3		3		0	
MAX316	---	---	48.4	53.2		3		1	
Dyna-Gro 9701	---	---	48.3	51.7		2		1	
#Bullet	---	50.0	48.1	51.9		4		1	
VA15W-63	---	---	48.0	53.2		2	-	0	
CROPLAN 8415	51.9	52.8	47.9	52.4		4		1	
MAX516	---	---	47.8	54.3		5		1	
MAS #61	---	55.1	47.7	52.9		5	+	0	
MAS #6	50.0	49.1	47.4	51.2		3		1	
GA051207-14E53	---	---	47.3	53.1		3		2	
TX EL2	---	---	47.1	52.8		5	+	2	
VA11W-108PA	---	54.1	47.1	53.0		3		1	
VA09MAS1-12-5-1-1	---	---	47.0	56.3	+	4		1	
VA12W-72	50.7	52.1	47.0	51.6		2		1	
MAX116	---	---	47.0	52.6		3		1	
SY 007	53.9	51.3	46.8	53.1		5		1	
VA07MAS3-7304-3-2-4-2	---	---	46.7	51.4		3		2	
VA13W-174	---	52.8	46.7	54.4		4		1	
Dyna-Gro 9772	---	52.4	46.3	50.2		5	+	1	
VA09MAS1-12-5-1	---	---	46.3	56.4	+	4		1	
VA12W-248	52.3	50.9	45.9	52.9		3		1	
VA14FHB-22	---	---	45.8	54.8		3		1	
15MW133	---	---	45.8	54.9		3		1	
Armor NEMESIS	---	---	45.8	54.4		3		0	
VA09MAS2-131-6-2-4	---	---	45.5	52.8		3		1	
Progeny 243	---	47.2	45.2	52.5		3		2	
Featherstone 73	53.3	51.9	45.1	54.0		3		2	+
VA15W-101	---	---	45.1	51.8		4		3	+
VA12FHB-8	55.5	52.4	45.0	51.9		5	+	2	
VA09MAS1-12-5-1-3	---	---	44.9	55.7	+	5	+	1	
VA12W-31	53.6	52.7	44.8	53.3		4		1	
USG 3197	---	47.9	44.8	50.7		4		1	
VA09MAS1-12-8-4	---	49.2	44.7	53.9		3		1	
VA13W-38	52.0	52.1	44.7	54.1		3		2	
VA15W-94	---	---	44.7	52.0		4		2	+
Progeny 16-1	---	---	44.5	54.4		3		2	
VA11W-279	53.4	49.4	44.3	53.2		3		2	
Progeny 16-4	---	---	44.3	53.1		3		3	+
Featherstone VA258	51.3	48.3	44.2	51.9		4		2	+
CROPLAN 8530	51.5	48.1	44.0	51.1		4		1	

Table 29. Summary of performance of entries in the Virginia Tech Wheat Test, planted No-Till at Tidewater AREC, Holland, VA, 2017 harvest.

Line	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Plant Lodging (0-9)	BYD Virus[1] (0-9)
15MDX17	---	---	44.0	53.6	3	3 +
SY 547	51.9	52.2	44.0	53.5	4	2
Oakes	---	44.5	43.9	55.7 +	3	2
TN1604	---	---	43.9	52.5	4	1
MBX 17-P-275	---	---	43.7	50.4	4	1
Pioneer XW15C	---	---	43.6	46.4 -	4	0
DH11SRW070-14	---	49.5	43.6	52.9	3	3 +
WX16722	---	---	43.5	52.8	3	1
VA14W-28	---	---	43.5	56.3 +	3	2
USG 3458	---	---	43.3	43.6 -	2 -	1
#BOSS	---	---	43.2	52.5	4	1
VA09MAS3-34-2-1	---	---	43.1	53.0	4	2
VA09MAS6-122-7-1-1	---	---	42.7	53.6	4	2
PGX 14-5	---	---	42.5	55.1	3	1
GA07353-14E19	---	---	42.3	54.4	4	3 +
VA14W-29	---	44.8	42.3	53.7	3	2
VA11W-313	51.1	45.6	42.2	51.2	3	1
MAS #7	44.7 -	40.2 -	41.7	52.2	3	1
SY Viper	---	40.8 -	41.7	54.4	4	1
VA07MAS1-7047-1-1-4-2	---	---	41.5	53.1	5 +	3 +
VA09MAS6-122-7-1	---	47.7	41.3	53.7	3	2
MAX216	---	---	41.3	55.0	3	1
VA14FHB-28	---	46.7	41.1	53.1	4	2
15MDX2	---	---	40.4	55.9 +	4	2 +
15MDX4	---	---	40.4	54.5	3	2
VA08MAS1-188-6-4-1	---	44.4	40.3	53.3	3	1
DH11SRW061-16	---	---	40.3	53.1	2 -	3 +
DH11SRW069-70	---	---	40.2	52.0	3	0
SY 100	---	---	39.6	49.8 -	5	1
Massey	46.7 -	40.9 -	39.5	54.0	5 +	2
NC13-23449	---	---	39.4	54.4	5	1
GAJT 141-14E45	---	---	39.4	52.8	3	2 +
VA07MAS3-7304-3-1-2-3	---	45.0	39.0	52.3	4	1
Dyna-Gro 9750	---	---	39.0	50.4	3	1
VA09MAS8-34-5-2	---	---	38.7	50.4	3	0
TN1501	---	---	38.4	51.7	6 +	1
AgriMAXX 463	---	---	38.4	50.5	3	1
NC13-23443	---	---	38.3	54.0	6 +	3 +
VA09MAS6-122-7-1-4	---	---	38.2	53.7	3	2
VA14FHB-29	---	---	38.1	54.0	4	1
15MDX1	---	---	37.9	54.1	5 +	2

Table 29. Summary of performance of entries in the Virginia Tech Wheat Test, planted No-Till at Tidewater AREC, Holland, VA, 2017 harvest.

Line	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Plant Lodging (0-9)	BYD Virus[1] (0-9)
DH12SRW057-006	---	---	37.9	55.7 +	5 +	2
USG 3549	---	---	37.8	53.7	3	1
VA14W-32	---	---	36.4 -	53.2	4	3 +
DH11SRW065-26	---	---	36.1 -	51.3	5	3 +
Armor AMBUSH	---	---	36.0 -	54.1	2	1
USG 3228	---	---	35.5 -	50.1 -	3	1
#Turbo	---	---	35.2 -	53.1	3	0
NC13-20332	---	---	32.0 -	52.1	5	1
NC13-21213	---	---	31.0 -	52.4	6 +	1
Dyna-Gro 9862	---	---	30.4 -	53.1	3	1
Armor RIPTIDE	---	---	29.2 -	53.1	2	1
AgriMAXX 474	---	42.0 -	28.9 -	52.5	2	1
MAS #67	---	41.1 -	25.7 -	48.0 -	3	1
#Warrior	---	---	25.6 -	46.5 -	2 -	0
MBX 17-M-245	---	---	21.6 -	46.4 -	2 -	1
Average	52.9	49.8	45.4	52.8	3	1
LSD (O.05)	5.3	6.0	8.5	2.7	1	1
C.V.	11.4	10.8	12.7	3.5	28	76

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.

[1] BYD = Barley Yellow Dwarf Virus.

Section 4: Milling and Baking Quality

Grain samples of 61 entries in Virginia's 2016 State Wheat Test grown at Warsaw, VA were submitted to the USDA-ARS Soft Wheat Quality Lab in Wooster, OH for advanced milling and baking quality evaluations. Wheat cultivars and experimental lines (collectively referred to as "varieties" herein) are listed in Table 30 from highest to lowest T-scores for overall milling and baking quality. The soft red winter cultivar Shirley that historically has had good milling and pastry baking quality was used as the quality standard check and has an overall quality T-score of zero. Wheat cultivars or experimental lines with T-scores greater than zero have overall quality that is similar to or exceed that of Shirley, while those with T-scores less than zero have overall quality that is similar to or less than that of Shirley. Quality grades (A-F) were also assigned (see Tables below) for flour yield (a key indicator of milling quality) and cookie diameter (a key indicator of pastry baking quality) as varieties having good milling quality may or may not have good baking quality and vice versa.

Adjusted Flour Yield% and Grade (Based on Samples Between 2009-2015)

Grade	Range	Percent
A	>70.85	15
B	69.71 to 70.85	20
C	68.23 to 69.70	30
D	66.86 to 68.22	20
F	<66.86	15

Cookie Diameter in cm (Based on Samples Between 2009 and 2015)

Grade	Range	Percent
A	>19.25	15
B	18.83 to 19.25	20
C	18.35 to 18.83	30
D	17.94 to 18.35	20
F	<17.94	15

Additional Information on Quality Analysis

Of the quality characteristics measured at the Soft Wheat Quality Laboratory, flour milling yield is the most reproducible and perhaps most important because it is genetically and environmentally associated with good soft wheat flour quality. Flour yields of the 61 varieties ranged from 63.6% to 72.4% and 20 varieties had flour yields and grades (A-C) that were similar to or higher than that of Shirley (69.1%) the quality standard check (Table 30).

After flour yield, the second quality trait that we recommend for use in selection is softness equivalent. It tends to have high heritability and is an important predictor of milling break flour yield. Overall varieties had harder kernels and lower softness equivalence scores in 2016 (43.6% to 60.0%) than in 2015 (46.7% to 69.8%), which could be responsible for the poorer milling performance and smaller cookie diameters of some varieties. Larger values are preferred for most soft wheat manufactured goods, particularly cakes and other high sugar baked products. Softness equivalence scores of 21 varieties were similar to or higher than that of Shirley (52.5%).

Flour protein concentration of Shirley was 7.98% and the 61 varieties ranged from 7.50% to 10.42%. Gluten strength is measured as lactic acid Solvent Retention Capacity (SRC) and is also correlated to flour protein concentration, but the effect is dependent on variety and growing conditions. Weaker gluten strength is desired for most pastry products, such as cookies and cakes, while stronger gluten strength is desired in production of crackers and some bread type products. Lactic acid SRC values ranged from 77.9% (Shirley) to 135.2% with 19 varieties having SRC values below 100% and 22 varieties having values above 110%.

Pastry baking quality was assessed via measurement of cookie spread diameter, which ranged from 16.5 to 18.9 cm with a test average of 17.5 cm. Eighteen of the 61 varieties, including Shirley, had cookie spread diameters ranging from 17.6 to 17.9 cm, and 10 varieties had cookie spread diameters ranging from 18.0 to 18.9 cm.

Table 30. Milling and baking quality of entries in the Virginia Tech Wheat Test based on evaluation of the 2016 harvest.

Entry	Adjusted Flour Yield (%)	Adjusted Flour Yield % Grade	Softness Equivalent (%)	Flour Protein (at 14%)	Lactic Acid SRC (%)	Cookie Diameter (cm)	Cookie Diameter Grade	Total T-Score
DH11SRW070-14	71.8	A	53.0	8.4	98	18.4	C	1.21
MAS #46	70.5	B	58.4	7.7	98	18.9	B	0.90
USG 3895	70.0	B	59.4	7.7	82	17.9	F	0.69
AgriMAXX 415	69.8	B	51.8	8.5	102	17.9	F	0.46
SS 8340	69.3	C	51.2	8.8	98	18.5	C	0.32
ARGA04510-11LE24	70.2	B	50.0	9.7	120	17.0	F	0.28
VA09MAS1-12-8-4	69.6	C	49.4	8.6	103	17.8	F	0.27
L11541	69.9	B	50.8	8.7	104	17.6	F	0.26
USG 3201	68.8	C	50.3	9.1	110	18.0	D	0.19
MAS #65	70.1	B	51.2	8.2	85	17.6	F	0.17
Massey	68.1	D	50.1	9.7	125	17.6	F	0.10
Pioneer Brand 26R10	68.0	D	60.0	8.6	101	18.0	D	0.08
Pioneer Brand 26R59	68.2	D	52.5	8.2	93	18.0	D	0.01
Shirley (Standard)	69.1	C	52.5	8.0	78	17.6	F	0.00
USG 3251	67.7	D	54.6	8.7	93	18.3	D	-0.03
#Warrior	69.2	C	51.5	8.1	89	17.4	F	-0.13
AgriMAXX 474	69.0	C	51.6	8.3	89	17.4	F	-0.13
VA09MAS6-122-7-1	67.6	D	49.4	9.6	108	17.9	F	-0.13
VA10W-119	68.6	C	48.3	9.0	115	16.7	F	-0.16
MAS #32	68.0	D	53.5	8.0	87	17.8	F	-0.16
MAS #7	67.6	D	53.3	8.6	109	18.0	D	-0.16
MAS #6	69.1	C	52.9	8.3	96	17.9	F	-0.17
VA12W-248	68.3	C	49.6	8.5	108	17.4	F	-0.18
MAS #35	72.4	A	44.3	8.1	90	16.9	F	-0.18
VA11W-108PA	67.7	D	55.2	8.1	119	18.0	D	-0.20
Pioneer Brand 26R41	68.1	D	53.5	8.5	111	17.3	F	-0.22
Pioneer Brand 26R20	67.3	D	55.5	7.5	99	17.9	F	-0.23
VA14FHB-28	68.4	C	47.0	8.3	101	16.9	F	-0.26
Croplan 8415	68.3	C	47.7	9.8	114	16.9	F	-0.28
VA13W-38	67.6	D	46.7	9.2	114	17.4	F	-0.29
Croplan 8550	68.3	C	52.4	8.2	84	17.5	F	-0.29
#Bullet	67.9	D	53.6	8.0	87	18.0	D	-0.30
VA12W-68	66.7	F	48.5	9.4	102	17.4	F	-0.37
GA-03564-12E6	68.5	C	44.7	8.9	118	16.7	F	-0.40
Hilliard	67.6	D	54.5	8.2	119	17.7	F	-0.46
VA12W-72	66.5	F	49.0	8.8	102	17.5	F	-0.49
VA11W-106	66.4	F	50.4	8.9	108	17.6	F	-0.51
MAS #67	66.8	F	49.9	8.0	90	17.8	F	-0.61
AR01040-4-1	67.6	D	52.5	8.0	91	17.6	F	-0.62
VA12FHB-8	66.8	F	51.8	7.5	94	17.3	F	-0.62
MAS #61	67.2	D	50.5	7.8	103	17.4	F	-0.64

Table 30. Milling and baking quality of entries in the Virginia Tech Wheat Test based on evaluation of the 2016 harvest.

Entry	Adjusted Flour Yield (%)	Adjusted Flour Yield % Grade	Softness Equivalent (%)	Flour Protein (at 14%)	Lactic Acid SRC (%)	Cookie Diameter (cm)	Cookie Diameter Grade	Total T-Score
VA14W-29	66.2	F	50.1	8.3	122	17.6	F	-0.66
Featherstone 73	67.0	D	50.3	9.1	112	16.9	F	-0.68
VA12W-31	65.6	F	50.2	8.6	119	17.6	F	-0.70
MBX 14-S-210	65.7	F	56.3	8.8	106	17.2	F	-0.74
VA07MAS3-7304-3-1-2-	68.1	D	43.8	8.4	105	17.2	F	-0.75
Croplan 8530	67.0	D	52.8	8.5	121	17.3	F	-0.77
NC8170-4-3	66.1	F	44.3	10.4	135	17.0	F	-0.84
VA11W-279	65.6	F	47.0	8.8	116	17.2	F	-1.06
VA11W-313	66.4	F	46.4	8.4	115	17.1	F	-1.09
VA13W-174	65.7	F	46.4	8.6	114	16.9	F	-1.12
SY Viper	64.0	F	49.9	9.5	109	17.6	F	-1.37
Jamestown	65.1	F	45.7	8.8	121	16.6	F	-1.42
MD272-8-4-14-6	63.8	F	53.1	9.4	103	16.9	F	-1.51
VA08MAS1-188-6-4-1	65.2	F	44.0	9.3	106	17.1	F	-1.53
#Turbo	64.6	F	44.4	8.7	111	16.9	F	-1.70
SY 547	64.5	F	43.7	10.3	106	16.8	F	-1.77
USG 3197	64.4	F	51.6	7.8	113	17.1	F	-1.78
Featherstone VA258	66.0	F	44.7	8.8	101	16.8	F	-1.80
VA10W-96	63.6	F	43.6	9.8	133	16.5	F	-1.94
AgriMAXX 464	64.0	F	48.3	8.2	117	16.9	F	-2.15
Mean (N=61)	67.5		50.3	8.6	105.3	17.5		
Standard Deviation	1.9		3.9	0.7	12.6	0.5		

Notes:

* Overall, entries are relatively lower in flour yield, softness equivalence, and cookie diameter than that of the typical SRW wheat.

* Much higher kernel hardness than the typical SRW wheat; could be cause of the poor experimental milling performance and low cookie diameter.

* Total T-Score = Sum of (0.15 x Test Weight), (-0.1 x SKCS Kernel Hardness), (0.4 x Flour Yield), (0.15 x Softness Equivalent) and (-0.2 x Sodium Carbonate SRC)

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) orscab. In 2017, all wheat entries in Virginia's Official State Variety Trials were evaluated for FHB resistance in an inoculated, irrigated nursery at the Virginia Crop Improvement Association (VCIA) test site in Mt. Holly, VA. Data from this test for the current crop year and two-year average for FHB incidence, FHB severity and FHB Index (incidence x severity / 100) are included in this bulletin (Table 32) 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.

In 2017, entries were inoculated by spreading scabby corn kernels (50g/4-rows) in plots at the booting stage. Among 139 lines and varieties tested in 2017, the FHB index varied from 2.8 to 51.6 with FHB incidence ranging from 25% to 75% and FHB severity ranging from 5.9% to 70.1% (Table 31). Seventy-eight lines and varieties had FHB index values lower than the mean (<15.3) and expressed moderate resistant to FHB in 2017. Based on two year mean data for 2016 and 2017 (Table 32), eight lines and 26 varieties had FHB index values lower than the test mean (<15.9).

Table 31. Summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab) and glume blotch resistance, 2017 harvest.

Line	FHB Incidence[1] (%)		FHB Severity[2] (%)		FHB Index[3] (0-100)		Flowering Date (Julian)		Rank FHB Index
USG 3228	37.5	-	7.3	-	2.8	-	107.3		1
MBX 17-P-275	42.5		6.9	-	2.9	-	107.0		2
VA13W-38	25.0	-	11.1	-	3.0	-	103.3	-	3
AgriMAXX 464	32.5	-	9.9	-	3.4	-	107.0		4
MAS #67	45.0		7.9	-	3.5	-	106.5		5
AgriMAXX 463	47.5		7.2	-	3.5	-	106.5		6
USG 3549	45.0		8.1	-	3.6	-	108.3	+	7
15MDX2	40.0	-	9.4	-	4.0	-	104.0	-	8
#Bullet	51.3		8.8	-	4.6	-	108.8	+	9
Dyna-Gro 9600	47.5		11.2	-	4.7	-	106.5		10
AgriMAXX 473	52.5		8.9	-	4.8	-	108.0		11
PGX 14-5	37.5	-	12.0	-	4.8	-	107.0		12
Dyna-Gro 9750	53.8		8.9	-	4.8	-	106.8		13
Dyna-Gro 9772	27.5	-	17.0		4.8	-	106.5		14
CROPLAN 8530	46.3		10.7	-	4.9	-	107.0		15
USG 3197	45.0		10.6	-	4.9	-	107.5		16
VA13W-174	50.0		10.4	-	5.2	-	104.3	-	17
MAX116	51.3		10.1	-	5.2	-	108.0		18
VA12W-68	42.5		12.3	-	5.3	-	103.3	-	19
SY 007	45.0		12.9		5.6	-	107.5		20
Southern Harvest 4400	73.8	+	7.3	-	5.6	-	96.0	-	21
15MDX4	57.5		9.7	-	5.6	-	107.5		22
MAX316	58.8		9.7	-	5.6	-	110.8	+	23
Dyna-Gro 9862	43.8		13.4		5.7	-	111.0	+	24
MAS #61	37.5	-	14.7		5.8	-	107.5		25
USG 3536	55.0		10.9	-	5.9		110.0	+	26
VA12W-72	37.5	-	16.3		6.2		104.0	-	27
VA09MAS2-131-6-2-4	47.5		12.9		6.3		104.8	-	28
Armor Mayhem	60.0		10.5	-	6.3		109.3	+	29
MAX516	47.5		13.8		6.5		105.5	-	30
CROPLAN 8550	57.5		11.4	-	6.6		110.5	+	31
Southern Harvest 4300	43.8		14.8		6.6		108.8	+	32
Dyna-Gro 9701	57.5		11.7	-	6.7		108.0		33
DH11SRW065-26	43.8		16.3		7.1		105.5	-	34
VA14FHB-28	55.0		13.0		7.3		99.3	-	35
Progeny 243	38.8	-	17.3		7.5		108.0		36
Massey	45.0		18.3		7.7		106.5		37
PGX 16-3	62.5		12.2	-	7.7		108.3	+	38
DH11SRW061-16	43.8		18.3		8.0		103.0	-	39
Pioneer XW15C	48.8		16.2		8.0		108.0		40
SY 547	50.0		16.0		8.0		107.5		41

Table 31. Summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab) and glume blotch resistance, 2017 harvest.

Line	FHB Incidence[1] (%)		FHB Severity[2] (%)	FHB Index[3] (0-100)	Flowering Date (Julian)		Rank FHB Index
VA15W-101	57.5		14.3	8.2	105.0	-	42
MAS #35	50.0		17.2	8.2	108.8	+	43
Pioneer Brand 26R36	57.5		13.8	8.2	109.0	+	44
VA09MAS6-122-7-1	47.5		17.5	8.5	103.0	-	45
L11541	61.3		13.5	8.5	108.0		46
Armor ARW1575	56.3		15.1	8.6	108.5	+	47
MBX 16-B-203	53.8		16.1	8.7	107.5		48
MAS #42	48.8		18.4	9.1	109.3	+	49
USG 3316	55.0		17.3	9.3	108.3	+	50
15MW133	55.0		17.3	9.8	108.5	+	51
VA11W-313	50.0		19.2	10.0	101.0	-	52
MAX216	52.5		18.3	10.0	107.5		53
Dyna-Gro 9692	56.3		18.6	10.1	110.0	+	54
USG 3404	51.3		20.6	10.2	111.5	+	55
VA09MAS6-122-7-1-4	47.5		22.1	10.3	103.5	-	56
Dyna-Gro 9522	48.8		20.7	10.4	110.8	+	57
AgriMAXX 444	47.5		23.9	11.4	111.0	+	58
#Turbo	51.3		22.2	11.4	105.5	-	59
SY 100	66.3		17.6	11.6	107.0		60
MAS #7	60.0		19.7	11.7	111.0	+	61
VA12FHB-8	45.0		25.5	12.1	101.0	-	62
CROPLAN SRW 9415	60.0		19.4	12.2	110.5	+	63
MBX 14-S-210	48.8		23.6	12.4	110.5	+	64
15MDX17	50.0		23.5	12.4	105.5	-	65
GA051207-14E53	57.5		22.3	12.8	106.0		66
VA14W-32	42.5		28.2	13.2	100.5	-	67
VA11W-279	55.0		24.2	13.4	101.3	-	68
Armor ARW1611	65.0		20.6	13.4	108.0		69
#BOSS	47.5		28.5	13.4	106.5		70
Progeny 357	56.3		23.8	13.6	111.5	+	71
DH12SRW056-058	53.8		24.7	13.8	108.0		72
Dyna-Gro 9223	63.8		22.2	14.1	109.0	+	73
VA15W-94	57.5		24.8	14.3	106.0		74
VA09MAS3-34-2-1	57.5		26.3	14.9	106.0		75
VA07MAS3-7304-3-1-2-3	66.3		21.9	14.9	98.5	-	76
NC13-23443	57.5		27.6	15.1	107.0		77
VA14FHB-29	50.0		30.4	15.4	106.3		78
AgriMAXX 415	58.8		25.6	15.5	108.3	+	79
VA12W-248	46.3		35.1	15.9	105.5	-	80
Pioneer Brand 26R53	51.3		31.0	16.0	108.0		81
WX16722	70.0	+	22.9	16.0	108.0		82

Table 31. Summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab) and glume blotch resistance, 2017 harvest.

Line	FHB Incidence[1] (%)		FHB Severity[2] (%)		FHB Index[3] (0-100)		Flowering Date (Julian)		Rank FHB Index
MAS #6	55.0		28.9		16.2		107.3		83
GAJT 141-14E45	46.3		34.4		16.4		105.5	-	84
USG 3895	58.8		28.9		16.7		107.0		85
AgriMAXX 446	55.0		29.3		16.8		109.8	+	86
Oakes	65.0		26.2		17.1		108.0		87
Pioneer Brand 26R10	53.8		32.8		17.7		109.5	+	88
Featherstone 73	58.8		30.6		18.1		109.0	+	89
Hilliard	50.0		35.7		18.2		107.0		90
CROPLAN SRW 9606	65.0		28.4		18.5		108.3	+	91
DH12SRW057-006	60.0		31.5		18.7		107.5		92
TN1501	67.5		28.2		18.8		106.5		93
USG 3458	63.8		29.6		19.1		108.3	+	94
SH EXP 1706	58.8		33.1		19.1		108.5	+	95
AgriMAXX 474	71.3	+	27.6		19.8		109.0	+	96
DH11SRW070-14	63.8		30.4		20.3		104.5	-	97
L11538	52.5		38.8		20.3		107.5		98
MBX 17-M-245	70.0	+	29.6		20.5		108.0		99
Pioneer Brand 26R59	60.0		34.8		20.5		107.5		100
15MDX1	63.8		31.5		20.5		107.3		101
VA09MAS8-34-5-2	61.3		34.0		21.4		107.5		102
VA09MAS2-131-6-2	61.3		33.0		21.4		105.5	-	103
VA15W-63	71.3	+	30.0		21.4		107.5		104
VA07MAS3-7304-3-2-4-2	68.8	+	31.5		21.8		100.5	-	105
SY Harrison	55.0		40.5	+	22.2		107.5		106
VA09MAS1-12-8-4	53.8		39.1		22.3		106.5		107
NC13-23449	56.3		40.8	+	22.4		108.0		108
DH11SRW069-70	50.0		45.7	+	23.0		110.0	+	109
TX EL2	55.0		41.2	+	23.2		107.0		110
VA09MAS1-12-5-1-1	60.0		39.1		23.3		109.5	+	111
VA09MAS1-12-5-1-3	62.5		37.5		23.4		109.0	+	112
#Warrior	70.0	+	33.7		23.8		107.5		113
VA11W-108PA	52.5		47.1	+	24.4		107.0		114
VA07MAS1-7047-1-1-4-2	53.8		40.0	+	26.4	+	105.5	-	115
VA14W-28	63.8		41.8	+	26.7	+	107.5		116
Featherstone VA258	62.5		43.7	+	26.9	+	107.0		117
VA14FHB-22	63.8		43.0	+	27.0	+	108.0		118
Armor ARW1514	66.3		41.8	+	27.3	+	108.0		119
NC13-20332	71.3	+	39.2		27.9	+	107.5		120
Progeny 16-4	56.3		50.1	+	28.1	+	105.5	-	121
SH 7200	63.8		44.8	+	28.6	+	106.0		122
NC13-21213	63.8		43.5	+	28.7	+	107.5		123

Table 31. Summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab) and glume blotch resistance, 2017 harvest.

Line	FHB Incidence[1] (%)		FHB Severity[2] (%)		FHB Index[3] (0-100)		Flowering Date (Julian)		Rank FHB Index
Armor ARW1610	68.8	+	40.6	+	29.1	+	109.5	+	124
SY Viper	51.3		57.0	+	29.2	+	106.8		125
VA09MAS1-12-5-1	62.5		46.9	+	29.3	+	107.5		126
TN1604	75.0	+	40.2	+	30.1	+	108.0		127
VA12W-31	73.8	+	41.1	+	30.2	+	107.5		128
VA09MAS6-122-7-1-1	67.5		45.9	+	31.4	+	106.0		129
CROPLAN 8415	66.3		44.8	+	31.5	+	107.0		130
Pioneer Brand 26R41	61.3		51.6	+	31.8	+	109.0	+	131
Shirley	61.3		52.8	+	32.0	+	107.5		132
L11550	66.3		49.1	+	32.8	+	108.0		133
VA08MAS1-188-6-4-1	68.8	+	52.8	+	36.1	+	106.0		134
DH11SRW065-23	65.0		56.2	+	36.3	+	109.0	+	135
GA07353-14E19	65.0		56.8	+	36.6	+	106.3		136
Progeny 16-1	66.3		57.4	+	38.6	+	107.5		137
VA14W-29	73.8	+	70.1	+	51.6	+	107.5		138
Average	55.3		26.1		15.3		106.9		
LSD (O.05)	13.4		13.6		9.5		1.2		
C.V.	17.4		37.5		44.7		0.8		

Released cultivars are shown in bold print.

Varieties are ordered by ascending index averages.

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

Entries were planted in 2-row plots, 4 ft in length at Mt. Holly, VA and were inoculated at booting stage with scabby corn kernels (50g/4-rows).

[1]Scab Incidence (%): Percentage of infected spikes among 20 randomly selected spikes.

[2]Scab Severity (%): Percentage of infected spikelets among 20 infected spikes.

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

Table 32. Two year average summary of reaction of entries in the Virginia Tech State Wheat Tests to Fusarium head blight (scab), 2016 and 2017 harvests.

Line	FHB Incidence[1] (%)		FHB Severity[2] (%)		FHB Index[3] (0-100)		Rank FHB Index
VA13W-38	35.0	-	12.2	-	4.6	-	1
USG 3197	42.5	-	11.9	-	5.1	-	2
Dyna-Gro 9600	50.0		11.1	-	5.1	-	3
MAS #67	54.2		9.4	-	5.3	-	4
Dyna-Gro 9772	40.0	-	15.5		5.9	-	5
AgriMAXX 464	43.3	-	13.4	-	6.6	-	6
#Bullet	60.0		11.0	-	7.0	-	7
VA13W-174	59.2		11.6	-	7.1	-	8
MAS #61	46.7		14.9		7.1	-	9
CROPLAN 8530	50.8		13.9		7.6	-	10
CROPLAN 8550	65.0		12.4	-	8.2	-	11
Progeny 243	47.5		16.6		8.3		12
MAS #35	60.0		15.4		8.7		13
VA12W-72	55.0		16.0		8.7		14
Massey	54.2		17.1		8.7		15
USG 3316	60.0		15.3		8.8		16
SY 547	59.2		15.5		9.1		17
SY 007	53.3		16.8		9.3		18
MBX 16-B-203	62.5		15.2		9.4		19
L11541	69.2		13.4	-	9.5		20
Southern Harvest 4400	75.0		12.9	-	9.7		21
MAS #42	60.8		16.8		10.0		22
Southern Harvest 4300	56.7		17.8		10.8		23
VA12W-68	57.5		16.6		10.8		24
Dyna-Gro 9692	65.8		17.4		10.9		25
USG 3404	61.7		18.8		10.9		26
VA14FHB-28	62.5		16.5		11.1		27
MAS #7	64.2		18.3		11.5		28
Pioneer Brand 26R36	67.5		16.2		11.7		29
VA09MAS6-122-7-1	58.3		20.8		12.9		30
VA11W-313	60.0		21.0		13.2		31
MBX 14-S-210	56.7		22.6		13.3		32
Dyna-Gro 9522	60.8		21.8		13.7		33
AgriMAXX 444	59.2		25.2		15.0		34
VA12FHB-8	57.5		26.1		15.6		35
MAS #6	64.2		25.8		16.1		36
Featherstone 73	65.0		25.7		16.2		37
AgriMAXX 415	62.5		25.4		16.2		38
VA11W-279	66.7		24.6		16.5		39
Progeny 357	67.5		24.2		16.6		40

Table 32. Two year average summary of reaction of entries in the Virginia Tech State Wheat Tests to Fusarium head blight (scab), 2016 and 2017 harvests.

Line	FHB Incidence[1] (%)	FHB Severity[2] (%)		FHB Index[3] (0-100)		Rank FHB Index
VA07MAS3-7304-3-1-2-3	73.3	23.3		17.7		41
Oakes	69.2	25.6		17.8		42
Hilliard	59.2	31.1		17.8		43
VA12W-248	57.5	32.9		18.2		44
Dyna-Gro 9223	71.7	25.2		18.4		45
Pioneer Brand 26R53	60.0	30.9		18.6		46
Pioneer Brand 26R10	65.0	29.8		18.7		47
AgriMAXX 446	65.8	28.6		19.1		48
USG 3895	70.0	29.6		20.7		49
Pioneer Brand 26R59	69.2	32.4		21.7		50
VA11W-108PA	60.0	38.7	+	21.8		51
SY Harrison	63.3	36.4	+	22.1		52
AgriMAXX 474	77.5	29.3		23.1		53
DH11SRW070-14	73.3	31.6		24.1	+	54
SY Viper	60.0	45.3	+	25.5	+	55
Featherstone VA258	73.3	37.8	+	26.1	+	56
VA09MAS1-12-8-4	65.8	39.4	+	26.9	+	57
VA12W-31	80.0	35.0		27.2	+	58
L11550	72.5	40.9	+	29.0	+	59
SH 7200	73.3	41.8	+	30.1	+	60
Pioneer Brand 26R41	72.5	43.9	+	30.2	+	61
VA08MAS1-188-6-4-1	73.3	43.2	+	30.7	+	62
Shirley	73.3	45.0	+	30.9	+	63
CROPLAN 8415	76.7	44.3	+	35.1	+	64
VA14W-29	80.0	63.3	+	49.8	+	65
Average	62.4	24.6		15.9		
LSD (0.05)	17.8	10.8		7.7		
C.V.	25.2	38.6		42.6		

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.
In 2016, 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).
In 2017, Entries were planted in 2-row plots, 4 ft in length at Mt. Holly, VA and were inoculated at booting stage with scabby corn kernels (50g/4-rows).
[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.