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Small Grains in 2020

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2020 SPES-227NP

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Recommended Small Grain Varieties

The following are the small grain variety recommendations for Virginia in 2020. 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 to Mid-Season Heading Varieties (118-119 d, Julian)				
SY Viper	3	4	Poor	Fair
#Berkeley	3	2	Fair	Good
MBX 17-M-245	4	1	Good	Moderate
USG 3458	4	1	Good	Moderate
Liberty 5658	3	4	Good	Moderate
CROPLAN CP9606	3	1	Good	Good
Pioneer Brand 26R59	4	3	Moderate	Moderate
SY 547	3	3	n/a	n/a
USG 3329	4	1	Good	Good
#Blaze	4	1	Good	Good
AgriMAXX 415	4	4	Good	Moderate

Mid- to Full-Season Heading Varieties (120-121 d, Julian)				
Hilliard	3	3	Fair	Moderate
MAS #86	3	2	Good	Good
Pioneer Brand 26R45	3	3	Moderate	Good
USG 3895	4	2	Good	Good
Shirley	3	1	Moderate	Moderate
Featherstone 125	3	4	n/a	n/a
AgriMAXX 473	3	2	Moderate	Moderate
Pioneer Brand 26R10	3	3	Moderate	Moderate
USG 3316	4	2	Good	Good
#Bullet	3	2	n/a	n/a
MAS #316	3	3	n/a	n/a

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 to Mid-Season Heading Varieties (118-119 d, Julian)					
SY Viper	Mod-Good	Good	Weak	Very Good	Moderate
#Berkeley	Mod-Weak	Good	Mod-Good	Very Good	Good
MBX 17-M-245	Moderate	Good	Weak	Very Good	Mod-Good
USG 3458	Mod-Weak	Moderate	Weak	Very Good	Moderate
Liberty 5658	Mod-Good	Moderate	Good	Very Good	Mod-Good
CROPLAN CP9606	Moderate	Moderate	Moderate	Very Good	Mod-Good
Pioneer Brand 26R59	Mod-Weak	Good	Weak	Very Good	Mod-Weak
SY 547	Good	Very Good	Moderate	Moderate	Moderate
USG 3329	Good	Good	Weak	Very Good	Mod-Weak
#Blaze	Good	Good	Weak	Very Good	Mod-Weak
AgriMAXX 415	Good	Mod-Weak	Moderate	Very Good	Good
Mid- to Full-Season Heading Varieties (120-121 d, Julian)					
Hilliard	Good	Very Good	Good	Very Good	Very Good
MAS #86	Good	Very Good	Mod-Good	Mod-Good	Very Good
Pioneer Brand 26R45	Mod-Good	Moderate	Good	Very Good	Moderate
USG 3895	Mod-Weak	Weak	Good	Very Good	Very Good
Shirley	Mod-Weak	Very Good	Good	Very Weak	Good
Featherstone 125	Mod-Weak	Moderate	Very Good	Moderate	Good
AgriMAXX 473	Mod-Good	Very Good	Good	Good	Moderate
Pioneer Brand 26R10	Moderate	Weak	Weak	Very Good	Moderate
USG 3316	Good	Very Weak	Very Weak	Mod-Weak	Moderate
#Bullet	Good	Good	Good	Mod-Good	Moderate
MAS #316	Poor	Weak	Weak	Moderate	Moderate

† 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

Elsoms Ackermann Barley Limited, Albert Warehouse, Pinchbeck Road, Spalding, Lincolnshire, England, PE11 1QG – Flavia and Hirondella.
KWS Cereals, 4110 Colleen Drive, Champaign, IL 61822 – KWS Scala, KWS Somerset, KWS Donau, KWS Faro.
Limagrain Cereal Seeds (LCS), 7099 Parkbrook Lane, Cordova, TN 38018 – Calypso, Casanova, Fay, and Violetta.
Virginia Tech and Virginia Crop Improvement Association (VT and VCIA), 9142 Atlee Station Road, Mechanicsville, VA 23116 – Amaze 10, Atlantic, Barsoy, Callao, Dan, Doyce, Eve, Nomini, Price, Secretariat, Thoroughbred, and Wysor.

Commercial and Experimental Wheat Entries

AgriMAXX Wheat Company, 7167 Highbanks Road, Mascoutah, IL 62258 –AgriMAXX 415, AgriMAXX 473, AgriMAXX 492, AgriMAXX 495, AgriMAXX 496, AgriMAXX 502, AgriMAXX 503, AgriMAXX 505, AgriMAXX EXP 2002, and AgriMAXX EXP 2003.
CORTEVA Agriscience Agriculture Division of DowDuPont (Pioneer), 974 Centre Rd, Chestnut Run Plaza Bldg. 735, Wilmington, DE 19805 - 26R10, 26R45, and 26R59.
Eddie Mercer Agri-Services, Inc. (Mercer Brand), 6900 Linganore Road, Frederick, MD 21701 – MBX 127, MBX 176, MBX 17-M-245, MBX 223, MBX 246, and MBX 969.
Erwin-Keith, Inc. (Progeny Ag Products), 1529 Highway 193, Wynne, AR 72396 – #BERKELEY, #BLAZE, #BULLET, PGX 17-16, PGX 18-2, PGX 18-7, and PGX 18-8.
Featherstone Farm Seed, Inc., 13941 Genito Road, Amelia, VA 23002 – Featherstone 31 and Featherstone 125.
University of Florida, 3105 McCarty Hall B, Gainesville, FL 32611 – FL14078LDH-28, FL14167LDH-158, FL15105-LDH110, FL15105-LDH145, and FLLA10033C-6.
University of Georgia, 1109 Experiment Street, Griffin, GA 30223 – GA10268-17LE16, GA10407-17E8, and GA11656-17E11.
KWS Cereals, 4101 Colleen Drive, Champaign, IL 61822 – KWS242 and KWS333.
Limagrain Cereal Seeds (LCS), 7099 Parkbrook Lane, Cordova, TN 38018 –L11719 and L11919.
Local Seed Company LLC, 802 Rozelle Street, Memphis, TN 38104 – LW2068, LW2848, LW2958, and LWX20C.
Meherrin Ag & Chemical Company (Southern Harvest), PO Box 200, Severn, NC 27877 – SH 4400, SH 7200, and SH 7510.
Mid-Atlantic Seeds, 204 St. Charles Way, #163E, York, PA 17402 –MAS #35, MAS #67, MAS #86, MAS #106, MAS #128, MAS #130, MAS #133, MAS #136, MAS #140, MAS #143, and MAS #316.
NC State University, 840 Method Road Unit 3, Raleigh, NC 27695-7629 – NC11546-14, NC15-21834, and NC15-21835.
Nutrien Ag Solutions (Dyna-Gro Seed), 15277 Richmond-Tappahannock Highway, St Stephens Church, VA 23148 - 9002, 9070, 9772, 9932, 9941, Laverne, Shirley, WX19713, WX20731, and WX20737.
Syngenta Seeds, Inc. (AgriPro), 14031 Trestle Road, Highland, IL 62249 – SY 007, SY 547, SY 576, SY Richie, and SY Viper.
Texas A&M AgriLife Research, 2600 S Neal, Commerce, TX 75429 – TX15D9253, TX15D9579, and TX15D9597.
UniSouth Genetics, Inc. (USG), 3205 C Highway 46S, Dickson, TN 37055 – USG 3118, USG 3221, USG 3230, USG 3316, USG 3329, USG 3458, USG 3536, USG 3790, and USG 3895.
Virginia Tech and Virginia Crop Improvement Association (VT and VCIA), 9142 Atlee Station Road, Mechanicsville, VA 23111 – Massey, Hilliard, Liberty 5658, and all lines prefixed by VA, VTK, DH and VDH.
Winfield United (CROPLAN), 1080 County Road F West, MS 5850, Shoreview, MN 55126-2910 – CP8081 and CP9606.

Appreciation is expressed to the Virginia Small Grains Check-Off Board, AgriMAXX, CORTEVA Agriscience Agriculture Division of DowDuPont, Eddie Mercer Agri-Services, Inc., Erwin-Keith, Inc., Featherstone Farm Seed, Inc., KWS Cereals, Limagrain Cereal Seeds, Local Seed Company, Meherrin Ag & Chemical, Mid-Atlantic Seeds, Nutrien Ag Solutions, Syngenta Seeds, Inc., UniSouth Genetics, Inc., Winfield United, 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. Nathaniel Lawton, Agricultural Supervisor; Ms. Elizabeth Rucker, Research Associate. Location Supervisors: Mr. Tom Custis (Painter); Dr. David Langston and Mr. Karl Jones (Holland); Dr. Joseph Oakes and Mr. Mark Vaughn, (Warsaw); Mr. Ned Jones (Blackstone); Dr. Carl Griffey, Mr. Wynse Brooks, Mr. Jon Light (Blacksburg); Mr. Bobby Clark (Shenandoah Valley); Mr. Gregory Lillard (Orange).

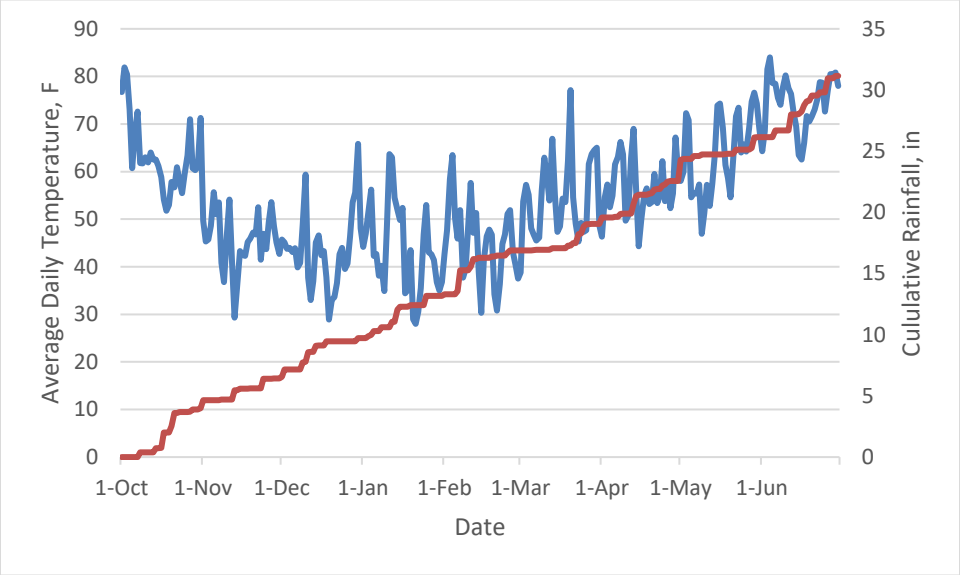
Introduction

The following tables present results from barley and wheat varietal tests conducted in Virginia in 2018-2020. Small grain cultivar performance tests are conducted each year in Virginia by the Virginia Tech School of Plant and 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 experiment location.

The Season – 2020

Early fall, 2019 was unseasonably warm and dry in most of the Commonwealth, delaying planting in some areas. Rain in mid to late October mitigated the dry conditions but also slowed planting. By October 25, 58% of intended acres were planted, increasing to 71% by November 3 which was more than a 20% increase over 2018-19. In December over 90% of the state reported adequate moisture and 69 and 62% of wheat and barley were reported to be in good condition. January and February were relatively warm and wet resulting in muddy fields. Reports held that 78% of wheat was in good or excellent condition. March brought more rain and cooler than normal temperatures with 80% of wheat acres in good or excellent condition. By mid-April, wheat condition continued to be very good with 3% of the crop headed, compared with 11% on this date last year. Cooler weather continued through the month with only 13% of the crop headed by April 20. There were also areas that experienced frost. On May 6, 51% of the wheat crop had headed, compared with the 5-year average of 55%. Over 80% of the crop continued to be rated good or excellent. Frost damage and moisture stress caused the percentage of the wheat crop rated good to decline to 66% by mid-May. A late frost event on the weekend of May 9 caused significant damage in some fields, resulting in near total loss, though this was not widespread. By May 20, 91% of wheat had headed and 2% of barley was harvested. Wheat harvest begin in early June with 11% of the crop harvested by June 10. Some areas experienced rain but harvest increased to 20% of acres by June 17. By July 1, 91% of barley and 73% of wheat acres were harvested, 7% greater than the 5-year average. Farmers are expected to harvest 11.0 million bushels of winter wheat during 2020 according to the Virginia field office of USDA's National Agricultural Statistics Service. The expected crop for 2020 would be up 69% from the previous year. The forecast was based on crop conditions as of June 1 and decreased 6% from the May forecast. Growers expect a yield of 61.0 bushels per acre, down 1.0 bushel from 2019 and down 4.0 bushels from May. Farmers seeded 260,000 acres last fall with 180,000 acres to be harvested for grain. Acres for other uses totaled 80,000 acres and will be used as cover crop for tobacco or cut as silage or hay.

Figure 1. 2019-20 daily average temperature and cumulative growing season precipitation for Virginia.



Section 1: Barley Varieties

For the past ten years, the Virginia Tech Barley Breeding program has been conducting barley research funded by commodity boards (Virginia Small Grains Board, Maryland Grain Producer Utilization Board, and Kentucky Small Grains Growers Association), American Malting Barley Association, Brewers Association and the US Wheat and Barley Scab Initiative. The goal of the breeding program is to develop high yielding, disease resistant barley cultivars adapted to the mid-Atlantic and southeastern US region and with qualities designed for specific end uses (feed, malt, food and others). Overall, our intent is to make winter barley a more competitive crop in the eastern US by implementing a program to develop barley cultivars with greater marketability in both domestic and foreign markets.

Recently there have been demands for the follow barley end uses: low beta-glucan feed types for monogastric animals, high starch and protein types for ruminant feed, and production of high-quality winter barley for the malt, brewing and distilling industries. These have generated new interest in barley.

This cooperative project involved collaboration among barley breeding programs in the US and other parts of the world and was initiated to genetically characterize and map over 40 targeted traits in barley breeding lines. In 2019, progress continued towards development of high value barley varieties, improving yield and quality, straw strength, grain plumpness and better resistance to disease. Meanwhile, we are pleased to report the release of Virginia Tech's first two-rowed winter malt barley variety 'Avalon' (tested as VA16M-81 and its first two-rowed winter hulless barley variety VA15H-73 with resistance to scab.

We have continued to make progress improving resistance to FHB. We are using marker assisted selection (MAS) to incorporate unique FHB resistant Quantitative Trait Loci (QTL) into our high yielding barley varieties and breeding lines. A resistance QTL associated with scab severity, DON toxin and fusarium damaged kernel (FDK) was recently identified in one of our hulless barley varieties, Eve. We are also using the double haploid (DH) breeding method in collaboration with Oregon State University. This will reduce our breeding cycle by at least 3-4 years and could have a dramatic impact on breeding progress.

Hulless Barley

Hulless barley tests were planted in seven-inch rows at Blackstone, Orange, Holland, and Painter. They were planted in six-inch rows at Warsaw and Blacksburg. The no-till site at Holland was planted at 66 seeds per square foot. All other locations were planted at 60 seeds per square foot.

In the 2020 harvest year, grain yield for Doyce hulless barley in Virginia was 96 bushels per acre with test weight of 47.0 pounds per bushel. Average grain yield of Eve was 78 bushels per acre with test weight of 57.4 pounds per bushel. Average grain yield of Dan was 75 bushels per acre with a test weight of 57.7 pounds per bushel. Average grain yield of Amaze 10 was 89 bushels per acre. It produced a

test weight of 56.9 pounds/bushel that was similar to Eve (57.4 pounds/bushel) and 9.9 pounds per bushel higher than Doyce (47.0 pounds/bushel). Doyce had the highest overall average grain yield (96 bushel per acre) that was 7 bushels per acre higher than that of Amaze 10 (89 bushels per acre), 18 bushels per acre higher than Eve (78 bushels per acre), 21 bushels per acre higher than Dan (75 bushels/acre), and 13 bushels per acre more than the test average (83 bushels per acre). Two hulless experimental lines VA06H-79 and VA16H-160 ranked 2nd and 3rd respectively in grain yield (92 bushels per acre).

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.

In the 2020 harvest year, the overall grain yield of Secretariat was 107 bushels per acre with an average test weight of 48.5 pounds per bushel compared to the mean yield of 99 bushels per acre and a test weight of 48.8 pounds per bushel for the mean of all cultivars tested. Average grain yield of Secretariat (107 bushels per acre) was 8 bushels per acre higher than Thoroughbred (99 bushels per acre), 4 bushels per acre higher than Atlantic (103 bushels per acre), 10 bushels per acre higher than SB255 (VA11B-141 LA and Callao (97 bushels per acre). However, the six rowed barley cultivar KWS Faro had the highest average overall grain yield (118 bushel per acre) that was 11 bushel per acre higher than Secretariat, 19 bushel per acre more than Thoroughbred and the overall test mean. In addition, two other cultivars (Hirondella and Flavia) ranked 2nd and 3rd respectively in average grain yield (112 and 110 bushels per acre) that were 5 and 3 bushels per acre higher than that of Secretariat; 13 and 11 bushels per acre higher than Thoroughbred.

Summary of barley management practices for the 2020 harvest season (All rates are given on a per acre basis.)

Blacksburg - Planted October 15, 2019. Pre-plant fertilizer was 30-50-70-10(S)-2(B). Site was sprayed with 1 oz. Harmony Extra SG® and fertilized with 25 units N on March 15, 2020. Site was fertilized with 20 units N + .25 lb. Boron + 1 qt Manni-Plex® for small grain April 6, 2020. Harvest occurred June 25, 2020.

Blackstone - Planted October 24, 2019. Pre-plant fertilizer was 500 lb. 6-6-18 on October 21, 2019. Site received 60 lb. N using UAN + 0.5 oz. Harmony Extra XP® January 23, 2020. Site received 60 lb. N using UAN on March 2, 2020. Site received 4 oz. Mustang® Maxx on March 27, 2020. Harvest occurred June 3, 2020.

Painter - Planted October 30, 2019. Pre-plant fertilizer was 60 lb. N using 30% on October 29, 2019. Application of .75 oz. Harmony + 60 lb. N using 30% UAN April 5, 2020. Site was abandoned.

Warsaw - Planted November 5-6, 2019. Lime was applied on the hulled barley at 1 ton September 18, 2019. No lime was applied to the hulless barley. Pre-plant fertilizer was 35-80-80-10 applied November 4, 2019. Site was fertilized using 12-0-0-1.5 at 25 lb. on December 21, 2019 and again on January 30, 2020. Rates of 0.5 oz Harmony Extra SG® + .75 oz. Quelex® with surfactant at 1.5 qt. /100 gal. water were applied on February 23, 2020. Finesse was applied at 0.4 oz on March 12, 2020. Site was fertilized using 24-0-0-3 at 40 lb. on barley and 60 lb. on hulless barley on March 14, 2020. Site was treated with 1 qt. Boron on March 31, 2020. Harvest occurred June 6, 2020.

Holland - Planted October 31, 2019. Fertilizer was applied at 322 lb. 9-18-31 + 5000 lb. lime on January 30, 2020. Site was fertilized with 60 units N using 24-0-0-3 + 1 qt Mg + 75 oz Quelex® on February 4, 2020 and again with 60 units N using 24-0-0-3 on March 14, 2020. Harvest occurred June 4-5, 2020.

Orange - Planted October 15, 2019. Pre-plant fertilizer was 245 lb. 30-60-60 October 14, 2019. Sixty lb. N plus 0.5 oz. Harmony Extra SG® was applied February 18, 2020. Forty lb. N was applied March 18, 2020. Harvest occurred June 15, 2020.

Table 1. Summary of performance of entries in the Virginia Tech Hulless Barley Test over locations, 2020 harvest.

Hulless Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Date Headed (Julian)		Mature Height (In)		Plant Lodging (0-9)		Net Blotch (0-9)	
	(5)		(5)		(2)		(3)		(5)		(3)	
Doyce	96.4	+	47.0	-	111	-	38		4.9	+	8.5	+
VA06H-79	91.8	+	56.0	-	110	-	38		2.4		3.4	-
VA16H-160	91.6	+	58.5	+	112		35	-	1.6		5.6	
VA15H-11	89.3	+	57.8		110	-	37		2.1		4.4	
Amaze 10	88.5	+	56.9		116	+	39		2.9		4.5	
VA16H-24	87.6		57.1		118	+	40	+	1.6		3.0	-
VA15H-73	87.4		56.9		116	+	42	+	2.4		6.5	+
VA07H-35 WS	86.0		57.6		115	+	40	+	2.3		4.5	
VA18H-7	85.8		57.7		115	+	41	+	1.5		6.1	
VA16H-27	85.7		57.2		118	+	39		1.3		3.5	-
VA16H-28	85.0		56.7		118	+	39		1.5		3.4	-
VA16H-159	84.3		58.2	+	113		36	-	1.8		6.3	+
VA17H-21	83.1		57.5		118	+	38		1.5		3.8	-
VA14H-58	82.5		57.1		109	-	37		2.9		4.6	
VA17H-19	79.2		58.0	+	113		38		2.3		4.8	
Eve	77.5	-	57.4		104	-	35	-	1.9		7.6	+
VA18HFHB-30 WS	76.6	-	60.8	+	109	-	37		0.9	-	6.5	+
VA08H-79 WS	76.1	-	57.0		115	+	39		2.6		2.9	-
VA18HFHB-29 WS/B	75.5	-	59.6	+	110	-	37		2.3		7.1	+
Dan	74.9	-	57.7		112		37		1.3		4.5	
VA18HFHB-18	73.3	-	56.2	-	107	-	41	+	2.5		6.4	+
VA18HFHB-26 WS	71.5	-	59.9	+	108	-	37		2.1		7.0	+
Average	83.2		57.2		112		38		2.1		5.2	
LSD (0.05)	4.9		0.8		1		1		1.1		0.9	
C.V.	8.9		2.1		1		5		---		---	

Released cultivars are shown in bold print.

Varieties are ordered by descending one-year yield averages.

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

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

Table 2. Two-year average summary of performance of entries in the Virginia Tech Hulless Barley Tests, 2019 and 2020 harvests.

Hulless Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Date Headed (Julian)		Mature Height (In)		Plant Lodging (0-9)		Net Blotch (0-9)	
	(10)		(11)		(4)		(6)		(8)		(3)	
VA16H-160	92.1	+	58.3	+	112	-	33	-	1.2	-	3.8	
VA06H-79	90.8	+	56.2	-	110	-	36		2.0		1.9	-
VA15H-11	90.6	+	58.0	+	110	-	36		2.0		2.4	-
VA15H-73	88.9		57.5		114	+	39	+	1.1	-	4.1	+
VA16H-24	88.0		57.6		116	+	37	+	1.0	-	2.0	-
VA16H-159	87.4		58.1	+	112		33	-	1.3	-	4.9	+
VA14H-58	87.3		58.0	+	109	-	35		2.2		3.0	
VA16H-27	86.7		57.5		116	+	37	+	0.7	-	2.1	-
VA16H-28	86.5		57.2		116	+	37	+	0.8	-	2.1	-
Amaze 10	84.9		57.4		114	+	36		3.3	+	4.1	+
Doyce	84.7		49.0	-	110	-	34	-	4.8	+	7.8	+
VA17H-21	84.0		57.6		117	+	36		1.7		2.7	-
VA07H-35 WS	83.9		57.8	+	114	+	36		2.6	+	4.2	+
VA17H-19	83.5		58.2	+	113		35		1.9		2.6	-
VA08H-79 WS	79.0	-	57.0		114	+	36		2.3		2.2	-
Eve	76.6	-	57.6		105	-	32	-	3.1	+	6.9	+
Dan	75.1	-	59.0	+	111	-	35		1.8		3.0	
Average	85.3		57.2		113		36		2.0		3.5	
LSD (0.05)	4.0		0.5		1		1		0.6		0.6	
C.V.	9.9		1.8		1		6		---		---	

Released cultivars are shown in bold print.

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

Varieties are ordered by descending yield averages.

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

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

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

Table 3. Three-year average summary of performance of entries in the Virginia Tech Hulless Barley Tests, 2018, 2019, and 2020 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)
	(15)	(17)	(6)	(9)	(14)	(2)	(4)	(1)
VA16H-160	87.4 +	56.4 +	114 -	34 -	2.4 -	2.8 -	3.7	0.5
VA06H-79	87.1 +	54.9 -	113 -	36	2.8	6.3 +	2.3 -	0.0
VA15H-73	86.7 +	56.3 +	117 +	39 +	1.7 -	3.8	3.9	0.0
VA16H-27	86.2 +	55.8	119 +	37 +	2.1 -	4.0	2.1 -	0.0
VA15H-11	85.9 +	56.4 +	113 -	36	3.2	2.0 -	2.3 -	0.0
VA16H-24	85.7 +	56.1 +	119 +	38 +	2.5 -	4.5	2.0 -	0.0
VA16H-28	85.0	55.7	119 +	37 +	2.1 -	5.0	2.1 -	0.0
VA16H-159	83.8	56.1 +	115	34 -	2.7	3.8	4.5 +	1.0
VA14H-58	81.7	56.7 +	113 -	36	4.0 +	2.3 -	3.3	0.0
Amaze 10	80.4	55.5	117 +	37	4.1 +	3.3	4.3 +	1.5
VA07H-35 WS	79.7	55.6	116 +	36	3.9 +	3.0	4.3 +	2.0 +
Doyce	78.4 -	48.5 -	113 -	35	5.4 +	2.8 -	7.3 +	1.0
VA08H-79 WS	76.6 -	54.6 -	117 +	36	3.3	7.5 +	2.4 -	0.0
Eve	75.2 -	56.3 +	108 -	33 -	3.9 +	4.3	6.5 +	0.5
Dan	74.8 -	57.0 +	114 -	35	3.0	5.0	3.1 -	0.0
Average	82.3	55.5	115	36	3.1	4.0	3.6	0.4
LSD (0.05)	3.2	0.4	1	1	0.6	1.1	0.5	1.5
C.V.	10.4	2.1	1	6				

Released cultivars are shown in bold print.

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

Varieties are ordered by descending yield averages.

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

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

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

Table 4. Summary of performance of entries in the Virginia Tech Hulless Barley Test, Southern Piedmont AREC, Blackstone, VA, 2020 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)	
Doyce	77.8		79.7		108.4	+	46.1	-
VA15H-11	80.4		82.0		102.4	+	58.7	
VA18H-7	---		---		98.8	+	59.2	
VA16H-160	85.0	+	86.8	+	97.6	+	59.8	
VA06H-79	82.1		83.0	+	96.7	+	56.6	
VA16H-159	81.4		82.3	+	96.6		59.7	
Eve	80.3		79.1		91.8		59.7	
VA18HFHB-30 WS	---		---		90.1		62.2	+
VA16H-24	79.0		78.0		89.9		58.5	
VA18HFHB-29 WS/B	---		---		89.9		61.4	+
VA18HFHB-26 WS	---		---		89.7		61.4	+
VA17H-19	---		80.3		89.1		57.2	
Amaze 10	72.2	-	70.7	-	87.4		57.1	
VA16H-28	81.0		77.8		87.1		55.9	
VA15H-73	79.2		78.1		86.0		58.5	
VA16H-27	75.9		74.9		85.5		58.3	
VA17H-21	---		69.9	-	83.9		57.9	
VA18HFHB-18	---		---		83.9		57.9	
VA07H-35 WS	75.1		73.7		81.7	-	57.5	
VA08H-79 WS	74.1		72.7		81.0	-	58.2	
VA14H-58	77.2		77.5		80.4	-	58.1	
Dan	69.7	-	65.5	-	68.6	-	57.5	
Average	78.0		77.2		89.4		58.0	
LSD (0.05)	4.1		5.1		7.2		2.2	
C.V.	6.3		6.3		5.4		2.6	

Released cultivars are shown in bold print.

Varieties are ordered by descending one-year yield averages.

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

Table 5. Summary of performance of entries in the Virginia Tech Hulless Barley Test, Tidewater AREC, Holland, VA, 2020 harvest.

Hulless Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)	
Doyce	78.5	+	51.6	-
VA16H-160	63.6		59.5	+
Amaze 10	57.7		59.3	
VA14H-58	57.4		59.3	
VA15H-11	56.1		59.3	
VA17H-21	55.0		59.0	
VA18HFHB-30 WS	54.6		62.4	+
VA08H-79 WS	54.2		57.7	
VA16H-27	54.0		57.8	
VA06H-79	53.0		56.5	-
VA16H-24	51.5		57.3	-
VA18H-7	51.2		58.2	
Dan	50.4		60.5	+
Eve	50.0		58.6	
VA15H-73	49.0		58.3	
VA16H-159	43.8		59.6	+
VA16H-28	43.7		57.6	-
VA07H-35 WS	43.0		59.0	
VA18HFHB-26 WS	40.9		60.4	+
VA18HFHB-29 WS/B	39.2		59.8	+
VA17H-19	37.9		59.3	
VA18HFHB-18	33.4	-	57.0	-
Average	50.8		58.5	
LSD (0.05)	13.3		0.9	
C.V.	16.1		1.1	

Released cultivars are shown in bold print.

Varieties are ordered by descending one-year yield averages.

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

NOTE: Two-year data for this location is not being reported because the 2019 harvest was not representative of performance.

Table 6. Summary of performance of entries in the Virginia Tech Hulless Barley Test, Northern Piedmont Center, Orange, VA, 2020 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)		Mature Height (In)	
VA16H-24	105.8	+	113.4	+	128.3	+	57.4		38	
VA17H-19	---		98.7		116.5	+	57.3		41	+
VA15H-73	102.9	+	110.1	+	115.0		56.5		41	+
VA16H-28	99.1		109.5	+	114.4		57.0		37	
VA16H-27	103.9	+	108.5		112.8		56.7		37	
VA07H-35 WS	84.8	-	94.9		108.9		56.8		41	+
Doyce	78.2	-	85.0	-	108.8		43.8	-	40	
VA06H-79	101.5	+	107.5		108.5		53.5		39	
VA16H-160	94.3		102.0		107.7		56.4		35	-
Amaze 10	93.4		103.5		106.5		54.9		39	
VA18H-7	---		---		105.1		57.3		41	+
VA14H-58	97.0		104.1		99.1		53.3		37	
VA16H-159	89.2		91.6		98.4		55.2		36	
VA17H-21	---		94.0		97.3		56.8		39	
VA18HFHB-29 WS/B	---		---		93.9		58.4	+	36	
VA18HFHB-30 WS	---		---		93.3		57.1		33	-
VA18HFHB-26 WS	---		---		93.3		58.3	+	35	-
VA15H-11	101.3	+	104.3		92.2		54.6		39	
VA08H-79 WS	81.7	-	91.6		90.9		54.9		38	
VA18HFHB-18	---		---		82.9	-	52.5	-	42	+
Dan	82.1	-	81.2	-	82.8	-	53.4		36	
Eve	80.6	-	83.6	-	82.8	-	52.1	-	35	-
Average	93.1		99.0		101.8		55.2		38	
LSD (0.05)	8.2		10.1		14.3		2.6		2	
C.V.	10.2		9.3		8.3		2.8		4	

Released cultivars are shown in bold print.

Varieties are ordered by descending one-year yield averages.

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

Table 7. Summary of performance of entries in the Virginia Tech Hulless Barley Test, Kentland Farm, Blacksburg, VA, 2020 harvest.

Hulless Lines	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)		Net Blotch (0-9)	
Doyce	79.8		68.1	46.8	-	117		38		1.8	+	8.0	+
VA16H-27	79.8		67.4	54.7		121	+	37		0.0		3.8	
VA16H-28	78.2		65.5	54.5		121	+	34		0.0		3.5	
VA15H-73	81.0		64.2	53.0	-	121	+	38		0.5		5.8	
Amaze 10	84.7		64.0	54.7		122	+	38		0.0		2.8	-
VA18H-7	---		62.4	55.2		120	+	40	+	0.0		5.5	
VA07H-35 WS	83.1		62.2	55.9		120	+	38		0.0		2.5	-
VA17H-19	73.1		61.9	56.0		116		35		0.0		4.0	
Dan	72.8		60.7	54.9		115		36		0.0		4.0	
VA16H-160	84.1		60.5	56.9		116		34		0.0		4.8	
VA16H-159	86.5	+	60.5	56.3		118		33	-	0.0		5.0	
VA16H-24	77.2		58.5	54.5		122	+	36		0.0		3.3	-
VA06H-79	76.3		58.2	54.4		115		36		0.0		3.8	
VA15H-11	80.4		58.2	57.5	+	115		37		0.0		2.8	-
VA08H-79 WS	75.8		54.7	55.2		119		38		0.0		3.3	-
VA18HFHB-29 WS/B	---		54.3	56.9		115		34		0.0		5.5	
VA18HFHB-30 WS	---		54.0	59.2	+	115	-	36		0.0		5.5	
VA14H-58	76.7		51.9	55.1		114	-	36		0.0		3.8	
VA17H-21	78.2		51.9	55.5		122	+	37		0.0		3.5	
Eve	72.9		51.2	55.1		106	-	34		0.0		7.8	+
VA18HFHB-18	---		50.0	55.7		111	-	41	+	0.0		5.5	
VA18HFHB-26 WS	---		49.8	57.8	+	113	-	37		0.0		5.8	
Average	78.9		58.6	55.2		117		36		0.1		4.5	
LSD (0.05)	7.0		10.7	2.1		2		3		1.1		1.2	
C.V.	8.5		12.2	2.7		1		6		---		---	

Released cultivars are shown in bold print.

Varieties are ordered by descending one-year 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 8. Summary of performance of entries in the Virginia Tech Hulless Barley Test, Eastern Virginia AREC, Warsaw, VA, 2020 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)		Net Blotch (0-9)	
VA16H-159	106.9	+	125.9	+	139.8	+	59.4		108		38	-	3.5		7.5	+
VA06H-79	104.7	+	120.3	+	133.1	+	58.9		104	-	39		4.8		3.0	-
VA17H-19	---		121.3	+	131.9	+	59.8	+	109	+	40		4.5		5.5	
VA15H-11	99.6		114.9		129.3	+	59.2		104	-	37	-	4.3		6.0	
VA07H-35 WS	99.5		116.2	+	127.8	+	58.4		111	+	41		4.5		6.5	
VA16H-160	103.4	+	117.1	+	125.8	+	59.7	+	108		37	-	3.3		6.5	
Amaze 10	97.5		110.4		123.3		58.3		110	+	39		5.8		6.3	
VA14H-58	90.6		105.2		121.5		59.9	+	104	-	38	-	5.8		5.5	
VA17H-21	---		109.3		116.3		58.5		113	+	39		3.0		4.0	-
Doyce	87.0	-	101.4		112.7		46.0	-	105	-	37	-	8.0	+	9.0	+
VA16H-24	96.1		106.4		110.7		58.1		114	+	45	+	3.3		2.8	-
Eve	79.0	-	90.38	-	107.1		60.4	+	102	-	36	-	3.8		7.5	+
VA16H-28	96.2		104.4		106.6		58.5		114	+	44	+	3.0		3.3	-
Dan	85.1	-	94.46	-	106.4		61.1	+	109		38		2.5		5.0	
VA18HFHB-18	---		---		106.3		58.0	-	103	-	41		5.0		7.3	
VA08H-79 WS	91.0		97.63	-	103.3		58.2		111	+	40		5.3		2.5	-
VA15H-73	93.7		101.1		103.2		58.5		112	+	46	+	4.3		7.3	
VA18H-7	---		---		102.9		58.8		111	+	43	+	3.0		6.8	
VA16H-27	95.5		101.6		100.8	-	58.3		114	+	44	+	2.5		3.3	-
VA18HFHB-30 WS	---		---		95.0	-	62.3	+	104	-	41		1.8	-	7.5	+
VA18HFHB-26 WS	---		---		86.0	-	61.5	+	104	-	40		4.3		8.3	+
VA18HFHB-29 WS/B	---		---		85.9	-	61.3	+	104	-	41		4.5		8.8	+
Average	95.0		108.1		112.5		58.8		108		40		4.1		5.9	
LSD (0.05)	5.6		7.984		11.6		0.7		1		2		1.9		1.4	
C.V.	6.9		6.845		7.1		0.8		1		4		---		---	

Released cultivars are shown in bold print.

Varieties are ordered by descending one-year 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 Barley Test, 2020 harvest.

Barley Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Date Headed (Julian)		Mature Height (In)		Plant Lodging (0-9)		Net Blotch (0-9)	
	(5)		(5)		(2)		(3)		(3)		(2)	
KWS Faro	118.0	+	48.4		112	+	34		0.4	-	2.3	
Hirondella	111.8	+	47.2	-	114	+	34		0.9		2.0	
Flavia	110.2	+	48.9		116	+	31	-	0.4	-	2.0	
Calypso	109.7	+	48.3		115	+	38	+	0.8		2.9	
Fay	109.3	+	47.5	-	110	+	33	-	0.8		2.1	
KWS Somerset	107.9	+	48.9		114	+	34		0.9		2.1	
Br11864pl	107.4	+	48.8		108		30	-	0.3	-	2.4	
Secretariat	107.0	+	48.5		107	-	33	-	2.3	+	2.6	
VA18B-52 LA (Dec.)	106.8	+	49.6	+	107	-	35		0.7		2.0	
VA18B-43 LA	106.1	+	48.5		110	+	36		0.3	-	1.6	
Casanova	104.5	+	49.3		116	+	33	-	0.4	-	1.8	
VA18B-39	104.4		48.7		108		34		2.0	+	2.4	
VA18B-50 LA	103.1		50.1	+	107	-	34		1.4		2.3	
Atlantic	103.0		48.5		105	-	34		2.4	+	2.1	
VA18B-5 LA	102.7		49.7	+	112	+	38	+	1.2		2.9	
VA16BFHB-279 NA	102.4		47.0	-	105	-	38	+	0.9		2.9	
VA18B-33 LA	102.2		49.4		108		35		1.8	+	1.8	
VA17B-163 LA	101.7		50.0	+	107	-	35		1.5		1.4	-
VA16B-264 LA	101.3		49.6	+	104	-	36		0.6		2.0	
VA18B-23 LA	101.2		49.6	+	111	+	37		1.8	+	1.9	
VA16M-81	101.1		50.5	+	114	+	37		1.0		1.8	
VA13B-25 LA	101.0		48.2		103	-	35		0.8		1.6	
VA17B-177 LA	100.9		49.1		107		34		1.3		2.4	
VA14B-63	100.2		48.3		109	+	35		1.7		1.8	
Nomini	100.0		45.7	-	103	-	38	+	1.8	+	2.0	
Violetta	99.8		49.0		109	+	32	-	0.7		2.1	
VA18B-34	99.6		49.2		109	+	35		2.3	+	1.4	-
Thoroughbred	99.1		49.5	+	111	+	38	+	0.7		3.0	+
VA18B-35	98.8		48.8		105	-	34		2.3	+	2.3	
VA17B-166 LA	97.8		50.0	+	107	-	35		1.1		1.1	-
VA18BFHB-80 LA	97.5		49.0		109	+	37		0.9		2.0	
VA18BFHB-160 LA	97.3		48.2		106	-	37		0.8		2.5	
SB255 (VA11B-141 LA)	97.1		49.4		108		37		0.6		2.3	
VA16B-213 LA	97.1		48.3		109		38	+	0.4	-	1.8	
Callao	97.0		47.3	-	104	-	32	-	3.2	+	2.1	
VA18B-44 LA (Dec.)	96.5		50.1	+	106	-	36		0.8		1.6	
KWS Scala	96.2		47.3	-	109		30	-	0.6		2.8	
Wysor	95.9		46.1	-	107	-	39	+	2.8	+	3.6	+
VA17B-175 LA	95.6		49.2		105	-	35		1.1		1.9	
VA17B-156 LA	95.3		49.2		106	-	35		1.0		1.3	-

Table 9. Summary of performance of entries in the Virginia Tech Barley Test, 2020 harvest.

Barley Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Date Headed (Julian)		Mature Height (In)		Plant Lodging (0-9)		Net Blotch (0-9)	
	(5)		(5)		(2)		(3)		(3)		(2)	
VA18BFHB-126 LA	95.2		49.7	+	108		37		0.7		2.4	
VA18B-51 LA	95.2		48.7		107	-	35		0.9		1.8	
VA18B-72 LA	94.3		49.6	+	109		35		1.0		2.4	
VA17B-76 LA	93.9		49.7	+	103	-	33	-	1.3		1.6	
VA18BFHB-157 LA	93.8		49.4		107	-	35		0.5	-	2.3	
VA18B-31 LA	93.6		49.2		107	-	34		1.3		2.0	
VA18BFHB-113 LA	92.7	-	49.6	+	108		35		0.8		2.0	
KWS Donau	91.9	-	47.3	-	111	+	32	-	0.7		3.0	+
VA18BFHB-111 LA	91.1	-	49.5	+	108		36		0.9		2.3	
VA18B-38	90.9	-	49.4		107	-	35		1.3		2.3	
VA16M-84	90.7	-	51.6	+	113	+	39	+	0.3	-	2.1	
VA16BFHB-268 NA	90.1	-	46.9	-	104	-	40	+	0.8		2.8	
VA17B-65 LA	90.0	-	49.1		104	-	35		0.9		1.8	
VA16BFHB-269 NA	89.8	-	47.5	-	105	-	40	+	1.3		3.0	+
VA16BFHB-273 NA	89.2	-	48.0	-	105	-	41	+	1.6		3.3	+
VA18BFHB-127 LA	89.0	-	50.1	+	109	+	35		0.8		2.4	
VA18B-63 LA	87.4	-	50.5	+	108		38	+	0.4	-	1.8	
Barsoy	86.4	-	47.8	-	103	-	35		2.2	+	2.9	
VA92-42-46	86.1	-	46.5	-	108		40	+	1.4		4.1	+
Average	98.6		48.8		108		35		1.1		2.2	
LSD (0.05)	5.9		0.7		1		2		0.6		0.7	
C.V.	8.8		2.0		1		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.

Table 10. Two-year average summary of performance of entries in the Virginia Tech Barley Tests, 2019 and 2020 harvests.

Barley Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)		Date Headed (Julian)		Mature Height (In)		Plant Lodging (0-9)		Net Blotch (0-9)	
	(10)		(10)		(4)		(6)		(8)		(5)	
VA16B-264 LA	99.9	+	48.7	+	106	-	34		1.5	-	1.9	-
VA17B-163 LA	99.6	+	49.1	+	108		34		1.8		1.2	-
Secretariat	99.0	+	47.7		108		31	-	3.3	+	3.6	+
VA17B-166 LA	98.9	+	49.0	+	108		34		1.5	-	1.2	-
VA17B-177 LA	97.4		48.2	+	108		32		1.3	-	2.4	-
VA14B-63	96.3		47.6		110	+	32		2.1		1.5	-
VA17B-175 LA	96.1		48.6	+	106	-	33		2.0		1.9	-
VA16B-213 LA	96.1		47.2		110	+	35	+	0.8	-	2.4	
VA17B-76 LA	95.2		49.1	+	104	-	33		2.1		2.8	
Casanova	95.0		47.5		115	+	30	-	1.1	-	3.0	
SB255 (VA11B-141 LA)	94.1		48.1	+	109	+	35	+	2.2		2.6	
Atlantic	93.8		46.8	-	106	-	30	-	3.5	+	4.0	+
VA17B-156 LA	93.5		49.0	+	106	-	34		1.5	-	1.7	-
Thoroughbred	93.3		47.2		111	+	34		1.4	-	5.0	+
VA17B-65 LA	92.7		48.8	+	105	-	34		1.5	-	2.1	-
Calypso	91.7		45.3	-	115	+	34		2.8		4.5	+
VA13B-25 LA	91.0		47.4		105	-	32		3.0	+	2.5	
Violetta	89.6		47.7		110	+	30	-	1.4	-	3.0	
Callao	88.5		46.0	-	106	-	27	-	4.6	+	3.6	+
Barsoy	87.2	-	47.1		105	-	32		3.3	+	3.7	+
Nomini	85.1	-	45.2	-	104	-	36	+	2.2		2.2	-
Wysor	83.5	-	44.9	-	108		36	+	3.5	+	5.2	+
VA92-42-46	75.7	-	45.3	-	108		35	+	3.0	+	5.6	+
Average	92.7		47.5		108		33		2.2		2.9	
LSD (0.05)	4.8		0.5		1		1		0.6		0.6	
C.V.	10.8		2.5		1		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.

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

Table 11. Three-year average summary of performance of entries in the Virginia Tech Barley Tests, 2018, 2019, and 2020 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)
	(16)		(15)		(6)		(9)		(14)		(1)		(7)		(1)
VA16B-264 LA	97.2	+	48.2	+	109	-	34		2.3	-	2.3		1.8	-	0.0
VA16B-213 LA	95.8	+	47.0	+	113	+	36	+	2.2	-	1.8	-	2.3	-	0.0
VA14B-63	95.7	+	46.9	+	113	+	33		3.7		1.8	-	1.5	-	0.0
Secretariat	95.5	+	47.2	+	111	-	31	-	4.4	+	1.0	-	3.1		0.0
VA13B-25 LA	93.2	+	47.0	+	108	-	33		3.4		2.8		2.3	-	0.0
SB255 (VA11B-141 LA)	92.0		47.6	+	112	+	35	+	3.2		2.8		2.3	-	0.5
Atlantic	91.4		46.3		109	-	31	-	4.5	+	4.0	+	4.0	+	0.0
Calypso	90.8		44.3	-	118	+	33		2.7	-	1.5	-	3.7		0.0
Thoroughbred	90.4		45.8		114	+	34		2.5	-	3.3		5.3	+	0.0
Violetta	88.8		47.2	+	113	+	30	-	2.0	-	2.0	-	3.0		0.5
Barsoy	83.5	-	46.6		108	-	32		4.5	+	5.5	+	4.0	+	0.0
Callao	82.3	-	45.6		108	-	29	-	6.0	+	3.5		3.4		0.0
Nomini	80.3	-	44.6	-	108	-	37	+	3.1		3.8	+	2.3	-	0.0
Wysor	74.4	-	44.0	-	111	-	37	+	4.7	+	5.8	+	5.0	+	0.0
VA92-42-46	71.5	-	44.2	-	111		37	+	4.2	+	1.0	-	5.9	+	0.0
Average	88.2		46.2		111		33		3.6		2.8		3.3		0.1
LSD (0.05)	4.1		0.6		0		1		0.6		0.8		0.5		0.5
C.V.	12.6		3.3		1		9		---		---		---		---

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

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

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

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

Table 12. Summary of performance of entries in the Virginia Tech Barley Test, Southern Piedmont AREC, Blackstone, VA, 2020 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)		Net Blotch (0-9)
Callao	92.8		100.9	+	124.8	+	50.3		0.0
KWS Faro	---		---		122.2	+	50.5		0.0
Secretariat	94.4		98.1		121.1	+	49.9		0.0
VA14B-63	91.5		92.2		118.1	+	50.0		0.0
VA16B-264 LA	96.8	+	99.9	+	117.9	+	53.8	+	0.0
VA18BFHB-111 LA	---		---		116.7		53.2	+	0.0
VA18B-44 LA (Dec.)	---		---		115.4		52.5	+	0.0
VA18B-52 LA (Dec.)	---		---		115.0		52.0		0.0
Flavia	---		---		114.6		51.3		0.0
Hirondella	---		---		114.1		48.5	-	0.0
VA13B-25 LA	88.8		88.6		113.1		52.6	+	0.0
KWS Somerset	---		---		112.2		51.8		0.0
VA18B-33 LA	---		---		112.1		52.2		0.0
SB255 (VA11B-141 LA)	93.6		97.5		110.7		52.8	+	0.0
Atlantic	92.0		92.8		110.3		50.9		0.0
VA18B-38	---		---		109.8		52.1		0.0
VA18B-23 LA	---		---		109.7		50.8		0.0
VA18B-50 LA	---		---		109.6		51.8		0.0
VA18B-35	---		---		107.9		51.1		0.0
VA18B-5 LA	---		---		107.8		52.5	+	0.0
VA18BFHB-80 LA	---		---		107.6		53.0	+	0.0
Fay	---		---		107.0		48.3	-	0.0
Nomini	85.3		87.7		106.9		48.2	-	0.0
VA17B-76 LA	---		93.4		106.1		51.8		0.0
VA18B-51 LA	---		---		104.9		50.3		0.0
VA18BFHB-160 LA	---		---		104.8		52.0		0.0
VA18B-43 LA	---		---		104.8		50.3		0.0
VA16BFHB-279 NA	---		---		104.5		49.6		0.0
VA17B-166 LA	---		94.3		104.5		51.3		0.0
Thoroughbred	89.3		91.9		104.4		51.6		0.3
VA16BFHB-268 NA	---		---		104.1		49.8		0.0
VA18B-39	---		---		104.0		50.0		0.0
VA16M-81	---		---		103.2		52.2		0.0
VA17B-175 LA	---		89.9		103.0		51.5		0.0
VA18B-31 LA	---		---		102.4		51.5		0.0
VA17B-156 LA	---		87.8		102.3		51.1		0.0
VA16M-84	---		---		102.2		53.3	+	0.0
Br11864pl	---		---		101.8		49.2	-	0.8
Wysor	84.7		88.8		101.5		49.7		1.0
VA18B-72 LA	---		---		101.4		51.3		0.0
Casanova	---		88.1		100.9		50.8		0.0

Table 12. Summary of performance of entries in the Virginia Tech Barley Test, Southern Piedmont AREC, Blackstone, VA, 2020 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)		Net Blotch (0-9)	
VA18B-34	---		---		100.7		49.8		0.0	
VA17B-177 LA	---		90.8		100.6		49.4	-	0.0	
Calypso	86.6		89.6		100.6		48.8	-	1.3	+
VA18B-63 LA	---		---		100.6		51.9		0.0	
KWS Scala	---		---		100.5		47.9	-	1.3	+
Barsoy	90.4		91.9		100.3		50.8		0.0	
VA17B-163 LA	---		91.3		100.1		50.7		0.0	
VA18BFHB-157 LA	---		---		98.5		51.2		0.0	
VA17B-65 LA	---		84.4		97.6		51.4		0.0	
VA16B-213 LA	85.6		84.8		97.3		50.9		0.0	
Violetta	82.8	-	81.4	-	96.6		49.6		0.0	
VA16BFHB-269 NA	---		---		96.6		50.7		0.0	
KWS Donau	---		---		96.5		49.4	-	0.8	
VA18BFHB-113 LA	---		---		95.1		51.6		0.0	
VA16BFHB-273 NA	---		---		92.6	-	50.9		0.0	
VA92-42-46	84.4		82.1	-	92.4	-	49.6		1.0	
VA18BFHB-126 LA	---		---		87.5	-	51.0		0.0	
VA18BFHB-127 LA	---		---		86.4	-	53.2	+	0.0	
Average	89.3		90.8		105.2		50.9		0.1	
LSD (0.05)	6.3		8.3		11.6		1.4		0.9	
C.V.	8.2		8.6		7.6		1.9		---	

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

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

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

Table 13. Summary of performance of entries in the Virginia Tech Barley Test, Tidewater AREC, Holland, VA, 2020 harvest.

Barley Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)	
VA17B-163 LA	93.9	+	54.6	+
VA18BFHB-113 LA	85.7		54.9	+
Calypso	85.2		51.3	-
VA18B-43 LA	83.5		53.2	
VA18B-39	83.4		52.6	
VA18B-52 LA (Dec.)	83.1		53.4	
KWS Somerset	81.4		52.1	
Casanova	77.5		52.6	
Fay	76.7		51.1	-
Violetta	75.7		52.6	
Br11864pl	75.5		52.2	
KWS Faro	74.7		50.8	-
Flavia	74.4		51.3	-
VA18BFHB-126 LA	74.2		53.9	
VA18BFHB-127 LA	73.3		54.6	+
VA17B-76 LA	72.8		53.4	
VA16M-81	72.4		52.5	
VA16B-213 LA	71.4		52.4	
Hirondella	70.8		50.7	-
Atlantic	70.7		52.5	
VA18B-50 LA	70.5		53.7	
VA18B-23 LA	69.6		52.5	
VA18B-63 LA	69.5		54.4	+
VA18BFHB-157 LA	69.4		53.7	
VA17B-166 LA	69.0		53.8	
VA17B-156 LA	68.5		53.9	
Secretariat	68.1		52.7	
VA18B-44 LA (Dec.)	67.7		54.0	
VA13B-25 LA	66.6		53.8	
Callao	66.5		51.2	-
VA17B-65 LA	66.0		53.3	
Thoroughbred	65.6		52.5	
VA14B-63	65.5		51.5	
VA18B-31 LA	65.4		52.5	
VA18B-51 LA	65.2		53.8	
VA17B-175 LA	64.9		53.0	
SB255 (VA11B-141 LA)	64.8		53.5	
Barsoy	63.9		52.5	
VA16BFHB-268 NA	63.3		53.4	
VA18B-35	63.0		53.1	
VA18BFHB-160 LA	62.1		50.2	-

Table 13. Summary of performance of entries in the Virginia Tech Barley Test, Tidewater AREC, Holland, VA, 2020 harvest.

Barley Lines	Yield (Bu/a @ 48 lb/bu)		Test Weight (Lb/bu)	
VA18BFHB-111 LA	62.1		53.9	
VA18B-33 LA	61.3		53.3	
VA18B-34	59.6		52.8	
VA16M-84	59.1		53.6	
VA18B-5 LA	58.4		53.2	
VA18BFHB-80 LA	58.2		50.4	-
VA18B-72 LA	58.0		52.8	
VA18B-38	57.8		53.4	
VA17B-177 LA	55.7		53.7	
KWS Donau	54.9		50.9	-
VA16BFHB-273 NA	53.9		53.5	
VA16B-264 LA	51.5		52.0	
KWS Scala	45.6	-	50.4	-
Wysor	*		*	
Nomini	*		*	
VA92-42-46	*		*	
VA16BFHB-269 NA	*		*	
VA16BFHB-279 NA	*		*	
Average	68.3		52.8	
LSD (0.05)	20.3		1.5	
C.V.	17.5		1.6	

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

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

* Variety was eaten by deer.

NOTE: Two-year data for this location is not being reported because the 2019 harvest was not representative of performance.

Table 14. Summary of performance of entries in the Virginia Tech Barley Test, Eastern Virginia AREC, Warsaw, VA, 2020 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)	
KWS Faro	---		---		171.3	+	49.3		109	+	38		1.3	-
VA17B-177 LA	---		125.6	+	160.5	+	49.4		104	-	34		3.8	
VA14B-63	113.0	+	125.2	+	159.1	+	48.2		107	+	37		5.0	+
VA18B-39	---		---		159.1	+	49.0		105		36		5.0	+
Hirondella	---		---		155.8	+	47.4		111	+	39		2.5	
VA18B-35	---		---		154.7	+	48.1		102	-	36		6.8	+
Secretariat	112.9	+	123.1	+	154.6	+	47.7		104	-	34		6.5	+
VA18B-34	---		---		154.5	+	48.4		106		36		4.8	+
VA18B-38	---		---		154.3	+	49.7		106		36		3.8	
VA18B-50 LA	---		---		154.1	+	50.4	+	104	-	36		4.3	
VA18B-43 LA	---		---		153.8	+	48.7		107	+	38		1.0	-
VA18B-52 LA (Dec.)	---		---		150.3		48.3		104		37		2.0	
VA18B-51 LA	---		---		147.9		49.8		103	-	35		2.8	
Calypso	105.6		113.9		147.3		49.5		112	+	42	+	2.0	
Atlantic	114.7	+	125.4	+	147.1		47.8		103	-	34	-	6.3	+
KWS Somerset	---		---		145.9		49.4		111	+	36		2.3	
VA17B-76 LA	---		117.7		145.6		49.8		101	-	35		3.8	
VA18BFHB-157 LA	---		---		145.3		49.0		105		39		1.5	-
VA18B-33 LA	---		---		145.0		49.2		106		36		5.0	+
VA17B-175 LA	---		116.4		144.6		49.2		101	-	36		3.3	
SB255 (VA11B-141 LA)	107.1		115.2		143.4		49.6		105		40		1.8	
Fay	---		---		142.8		48.0		105		34		2.0	
VA18B-5 LA	---		---		142.7		50.0		110	+	40		3.5	
VA13B-25 LA	108.5		113.4		142.5		47.5		101	-	37		2.3	
VA18B-44 LA (Dec.)	---		---		142.3		50.4	+	104	-	38		1.8	
VA17B-156 LA	---		113.9		142.2		49.8		103	-	37		3.0	
VA18B-31 LA	---		---		141.5		49.8		105		35		3.8	
Callao	104.2		116.5		141.3		46.6	-	102	-	34	-	8.3	+
VA17B-65 LA	---		115.7		141.3		49.1		101	-	36		2.8	
Br11864pl	---		---		140.8		48.8		103	-	35		1.0	-
VA18BFHB-111 LA	---		---		140.8		49.4		105		38		2.8	
VA18BFHB-126 LA	---		---		140.3		48.9		105		39		2.0	
VA17B-163 LA	---		118.7		140.1		48.8		103	-	36		4.5	
KWS Scala	---		---		140.1		48.1		105		32	-	1.8	
Thoroughbred	106.6		114.6		139.2		49.0		108	+	40		2.0	
VA18B-23 LA	---		---		139.1		49.0		108	+	38		5.0	+
VA17B-166 LA	---		116.2		138.9		48.8		104	-	35		3.0	
VA18BFHB-127 LA	---		---		138.8		50.1		106		37		2.5	
VA16B-264 LA	106.9		114.0		138.7		48.8		102	-	39		1.3	-
VA16B-213 LA	105.3		109.6		138.6		45.5	-	105		40		1.3	-
Flavia	---		---		138.5		49.0		114	+	37		1.3	-

Table 14. Summary of performance of entries in the Virginia Tech Barley Test, Eastern Virginia AREC, Warsaw, VA, 2020 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)	
VA18BFHB-160 LA	---		---		137.5		49.7		102	-	40		2.5	
Casanova	---		113.7		136.4		49.6		114	+	37		1.3	-
VA18B-72 LA	---		---		135.8		49.9		105		37		3.0	
VA16M-81	---		---		134.6		51.2	+	110	+	42	+	2.3	
Nomini	99.6		106.3	-	132.9		46.2	-	100	-	39		3.5	
Violetta	99.1	-	105.9	-	131.7		50.0		107	+	37		1.8	
VA18BFHB-113 LA	---		---		131.3		48.0		105		37		2.5	
KWS Donau	---		---		130.3		48.7		107	+	36		2.0	
VA16BFHB-279 NA	---		---		129.6	-	47.2	-	103	-	40		2.8	
Barsoy	99.7		107.4	-	129.1	-	47.5		101	-	37		6.3	+
VA18BFHB-80 LA	---		---		127.5	-	49.1		106		40		2.8	
VA18B-63 LA	---		---		126.6	-	49.7		105		41		1.3	-
VA16BFHB-268 NA	---		---		125.6	-	46.5	-	101	-	41		2.5	
Wysor	95.4	-	105.2	-	123.3	-	45.5	-	104	-	40		6.0	+
VA16BFHB-273 NA	---		---		122.5	-	47.7		102	-	43	+	4.0	
VA92-42-46	93.2	-	101.8	-	118.6	-	46.0	-	105		41		4.0	
VA16BFHB-269 NA	---		---		117.2	-	47.7		102	-	41		3.5	
VA16M-84	---		---		112.3	-	52.5	+	109	+	42	+	1.0	-
Average	104.8		114.6		140.8		48.7		105		37		3.1	
LSD (0.05)	5.2		6.5		11.0		1.4		1		4		1.5	
C.V.	6.1		5.7		5.6		2.1		1		7		34.5	

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

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

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

Table 15. Summary of performance of entries in the Virginia Tech Barley Test, Northern Piedmont Center, Orange, VA, 2020 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)		Mature Height (In)		Plant Lodging (0-9)	
KWS Faro	---		---		118.1	+	49.0		29		0.0	
VA16BFHB-279 NA	---		---		116.4	+	48.1		35	+	0.0	
VA18B-23 LA	---		---		113.1		49.7		35	+	0.0	
VA16B-264 LA	107.0	+	107.9	+	112.3		50.7	+	33		0.0	
VA16B-213 LA	102.3	+	101.5	+	111.3		48.8		34		0.0	
Flavia	---		---		107.8		49.9		27	-	0.0	
Fay	---		---		107.1		48.8		27	-	0.0	
Hirondella	---		---		107.1		49.2		27	-	0.3	
Atlantic	81.3		81.3		106.4		47.5		29		1.0	+
VA18BFHB-160 LA	---		---		105.3		48.4		32		0.0	
VA18B-34	---		---		104.1		48.8		32		0.0	
KWS Scala	---		---		103.9		48.2		24	-	0.0	
VA18BFHB-126 LA	---		---		103.4		50.9	+	31		0.0	
VA17B-166 LA	---		105.1	+	103.2		50.9	+	31		0.0	
VA16BFHB-273 NA	---		---		103.1		48.2		37	+	1.0	+
VA17B-177 LA	---		98.6		102.5		48.3		32		0.0	
VA18B-5 LA	---		---		102.4		51.4	+	33		0.0	
VA17B-156 LA	---		108.1	+	102.2		47.8		33		0.0	
VA16BFHB-268 NA	---		---		102.1		48.6		39	+	0.0	
Br11864pl	---		---		101.8		50.0		26	-	0.0	
VA17B-175 LA	---		101.8	+	101.7		47.6		32		0.0	
VA18B-52 LA (Dec.)	---		---		101.5		50.1		30		0.0	
VA18B-72 LA	---		---		100.9		49.6		31		0.0	
VA17B-163 LA	---		103.0	+	100.7		49.9		31		0.0	
Wysor	53.5	-	79.6		99.9		47.4	-	35	+	1.0	+
VA18BFHB-157 LA	---		---		99.8		50.6	+	31		0.0	
Thoroughbred	95.0	+	98.0		99.1		49.9		33		0.0	
Secretariat	91.0	+	87.7		98.9		48.7		29		0.0	
VA18BFHB-80 LA	---		---		98.5		50.4		34		0.0	
VA18B-39	---		---		98.4		47.3	-	33		0.0	
SB255 (VA11B-141 LA)	86.7		84.7		98.1		49.8		32		0.0	
VA18B-50 LA	---		---		97.3		49.6		30		0.0	
Callao	59.6	-	69.8	-	96.8		46.5	-	27	-	0.8	+
VA18B-43 LA	---		---		96.1		48.6		33		0.0	
VA14B-63	93.1	+	88.8		95.6		47.7		31		0.0	
VA13B-25 LA	96.1	+	89.6		95.5		48.5		32		0.0	
KWS Somerset	---		---		95.3		49.8		30		0.0	
Casanova	---		85.4		95.2		50.8	+	28		0.0	
VA18B-44 LA (Dec.)	---		---		95.2		49.8		33		0.0	
Violetta	78.9		78.6		95.1		49.6		27	-	0.0	
VA18B-35	---		---		94.8		46.3	-	31		0.0	

Table 15. Summary of performance of entries in the Virginia Tech Barley Test, Northern Piedmont Center, Orange, VA, 2020 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)		Mature Height (In)		Plant Lodging (0-9)	
Calypso	74.2		71.7	-	94.8		49.1		30		0.0	
VA16BFHB-269 NA	---		---		93.7		48.2		39	+	0.7	+
Nomini	56.1	-	75.3	-	93.0		46.4	-	35		1.8	+
Barsoy	70.1	-	75.5	-	92.8		47.5		31		0.0	
VA18B-31 LA	---		---		92.5		48.8		29		0.0	
VA17B-65 LA	---		101.2	+	92.2		48.7		29		0.0	
VA18B-63 LA	---		---		92.0		50.5	+	34		0.0	
VA16M-81	---		---		88.8		51.2	+	32		0.0	
VA18B-51 LA	---		---		88.8		46.4	-	32		0.0	
VA18B-33 LA	---		---		88.2		49.9		30		0.0	
VA18BFHB-113 LA	---		---		87.9		51.0	+	30		0.0	
KWS Donau	---		---		87.6		48.8		27	-	0.0	
VA17B-76 LA	---		86.4		86.7		49.5		29		0.0	
VA18BFHB-127 LA	---		---		82.1		50.1		32		0.0	
VA16M-84	---		---		80.6		52.3	+	36	+	0.0	
VA18BFHB-111 LA	---		---		79.1	-	49.9		30		0.0	
VA92-42-46	48.4	-	65.0	-	77.6	-	47.3	-	35		0.0	
VA18B-38	---		---		75.7	-	45.8	-	29		0.0	
Average	79.6		88.9		97.7		49.0		31		0.1	
LSD (0.05)	9.4		10.9		17.3		1.5		4		0.5	
C.V.	13.0		10.6		10.6		1.9		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.

Table 16. Summary of performance of entries in the Virginia Tech Barley Test, Kentland Farm, Blacksburg, VA, 2020 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)		Net Blotch (0-9)	
Br11864pl	---		---		109.2	+	45.0		114	+	30	-	0.0		4.0	
Flavia	---		---		106.2	+	44.0		118	+	28	-	0.0		4.0	
Casanova	---		102.5	+	105.7	+	43.8		119	+	34		0.0		3.5	
Calypso	92.4		98.6	+	103.3	+	44.0		117	+	37		0.3		4.5	
Hirondella	---		---		100.3	+	42.2	-	117	+	35		0.0		4.0	
VA16M-81	---		---		99.1	+	45.7		118	+	37		0.8		3.5	
KWS Somerset	---		---		96.2	+	43.1		117	+	35		0.5		4.3	
Fay	---		---		96.0	+	43.5		114	+	37		0.3		4.3	
KWS Faro	---		---		93.1	+	42.9		116	+	35		0.0		4.5	
Violetta	94.0		98.5	+	92.7	+	44.4		112		32	-	0.3		4.3	
VA18B-5 LA	---		---		91.0	+	42.5		115	+	40	+	0.0		5.8	+
KWS Scala	---		---		90.8	+	42.5	-	112		32	-	0.0		4.3	
Thoroughbred	92.4		107.8	+	88.5	+	45.2		115	+	38		0.0		5.8	+
VA16M-84	---		---		83.5	+	47.4	+	117	+	40		0.0		4.3	
VA18BFHB-80 LA	---		---		79.7	+	42.5	-	113	+	38		0.0		4.0	
VA18B-33 LA	---		---		79.2	+	45.3		111		37		0.5		3.5	
VA18B-23 LA	---		---		74.4		46.1	+	114	+	39		0.5		3.8	
VA18B-34	---		---		73.4		46.0	+	113	+	38		2.0	+	2.8	-
Atlantic	94.9	+	95.9		73.2		44.6		107	-	37		0.0		4.3	
VA18B-39	---		---		71.7		45.7		112		33		1.0		4.8	
KWS Donau	---		---		71.6		40.7	-	114	+	34		0.0		5.3	
VA17B-163 LA	---		92.9		71.3		47.0	+	110		37		0.0		2.8	-
Secretariat	102.0	+	102.1	+	69.9		44.6		109	-	36		0.5		5.3	
VA17B-166 LA	---		94.5		69.2		46.8	+	110		37		0.3		2.3	-
VA16B-264 LA	97.8	+	98.9	+	67.7		44.3		107	-	38		0.5		4.0	
VA18B-72 LA	---		---		66.2		45.2		112	+	38		0.0		4.8	
VA18B-52 LA (Dec.)	---		---		64.5		45.1		110		38		0.0		4.0	
VA16B-213 LA	95.5	+	92.4		63.8		44.4		112		39		0.0		3.5	
VA17B-177 LA	---		87.5		63.4		45.6		111		35		0.3		4.8	

Table 16. Summary of performance of entries in the Virginia Tech Barley Test, Kentland Farm, Blacksburg, VA, 2020 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)		Net Blotch (0-9)	
VA18B-43 LA	---		---		63.4		44.5		113	+	36		0.0		3.3	-
VA18B-35	---		---		62.8		45.3		108	-	35		0.3		4.5	
VA18B-50 LA	---		---		62.7		45.8	+	110	-	36		0.0		4.5	
VA14B-63	99.1	+	94.3		62.6		44.1		112		37		0.0		3.5	
VA18B-51 LA	---		---		61.5		44.6		110		37		0.0		3.5	
VA13B-25 LA	90.2		89.2		61.5		42.4	-	105	-	36		0.0		3.3	-
VA18BFHB-160 LA	---		---		61.1		42.4	-	110		39		0.0		5.0	
SB255 (VA11B-141 LA)	92.1		93.5		60.9		42.4	-	110		39		0.0		4.5	
Wysor	66.3	-	70.4	-	60.8		42.6		109	-	41	+	1.8	+	6.3	+
VA18B-44 LA (Dec.)	---		---		59.1	-	45.7		109	-	38		0.8		3.3	-
VA18BFHB-126 LA	---		---		58.9	-	43.8		111		38		0.0		4.8	
VA18B-31 LA	---		---		58.9	-	44.0		109	-	37		0.0		4.0	
VA16BFHB-269 NA	---		---		55.4	-	43.7		108	-	40		0.0		6.0	+
VA92-42-46	64.2	-	65.6	-	53.7	-	43.1		110		43	+	0.3		7.3	+
VA18BFHB-111 LA	---		---		52.9	-	43.0		111		37		0.0		4.5	
Barsoy	79.5	-	82.1	-	52.5	-	41.2	-	106	-	36		0.3		5.8	+
VA16BFHB-279 NA	---		---		52.0	-	43.3		108	-	38		0.0		5.8	+
VA17B-175 LA	---		84.9		51.6	-	46.0	+	108	-	37		0.0		3.8	
Nomini	77.5	-	76.7	-	51.6	-	41.9	-	106	-	39		0.0		4.0	
VA18BFHB-157 LA	---		---		51.4	-	43.5		109	-	36		0.0		4.5	
VA17B-76 LA	---		86.3		51.4	-	45.0		105	-	34		0.0		3.3	-
VA16BFHB-273 NA	---		---		50.9	-	43.9		108	-	42	+	0.0		6.5	+
VA18B-38	---		---		49.6	-	46.0	+	108	-	38		0.0		4.5	
VA18B-63 LA	---		---		49.5	-	44.6		111		38		0.0		3.5	
VA18BFHB-127 LA	---		---		48.9	-	43.7		112		37		0.0		4.8	
Callao	80.7	-	79.2	-	47.8	-	42.8		106	-	36		0.5		4.3	
VA17B-65 LA	---		80.0	-	47.6	-	43.9		107	-	37		0.0		3.5	
VA18BFHB-113 LA	---		---		47.5	-	44.1		111		36		0.0		4.0	
VA16BFHB-268 NA	---		---		44.7	-	42.7		106	-	39		0.0		5.5	+

Table 16. Summary of performance of entries in the Virginia Tech Barley Test, Kentland Farm, Blacksburg, VA, 2020 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)	Net Blotch (0-9)	
VA17B-156 LA	---	87.8	43.3	-	44.1	109	-	35	0.0	2.5	-
Average	87.9	89.6	68.7		44.1	111		37	0.2	4.3	
LSD (0.05)	6.4	7.4	9.0		1.6	1		3	0.9	1.0	
C.V.	8.8	8.1	8.8		2.6	1		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.

Section 2: 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.

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 2020, in descending yield order were MAS #143, MBX 127, USG 3790, LW2848, SY 547, Pioneer 26R45, MAS #136, AgriMAXX 502, LW2068, MAS #140, MAS #128, #Blaze, AgriMAXX 473, MAS #316, Featherstone 125, USG 3329, SY 576, #Bullet, and MBX 223. Featherstone 125 also had test weight that was significantly higher than the mean of all lines tested. Average yield of all lines tested in 2019-20 was 89.2 bushels per acre, up 5.8 bushels from 2018-19.

Released lines with yields higher than the 3-year statewide mean, in descending yield order, were SY Viper, USG 3329, Pioneer 26R59, USG 3316, and #Blaze. SY Viper also had test weight that was significantly higher than the mean of all lines tested over the 3 years.

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 2020 harvest season (All rates are given on a per acre basis.)

Blacksburg - Planted October 18, 2019. Pre-plant fertilizer was 30-50-70-10(S)-2(B). Site was sprayed with 1 oz. Harmony Extra SG® and fertilized with 25 units N on March 15, 2020. Site was fertilized with 40 units N + .25 lb. Boron + 1 qt Manni-Plex® on April 6, 2020. Harvest occurred July 2, 2020.

Blackstone - Planted October 24, 2019. Pre-plant fertilizer was 500 lb. 6-6-18 on October 21, 2019. Site received 60 lb. N using UAN + 0.5 oz. Harmony Extra XP® January 23, 2020. Site received 60 lb. N using UAN on March 2, 2020. Site received 4 oz Mustang® Maxx on March 27, 2020. Harvest occurred June 9, 2020.

Warsaw - Planted November 9, 2019. Lime was applied at 1 ton September 18, 2019. Pre-plant fertilizer was 40-100-60-8 applied November 6, 2019. Site was fertilized using 12-0-0-1.5 at 25 lb. on December 20, 2019 and again on January 31, 2020. Harmony Extra SG® was applied at .5 oz. with surfactant at 1.5 qt. /100 gallons of water + 1.5 qt. Quelex® on February 23, 2020. Finesse was applied at .4 oz on March 1, 2020. Site was fertilized using 24-0-0-3 at 60 lb. on March 14, 2020. Site was treated with 1 qt. Boron March 31, 2020. Harvest occurred June 27, 2020.

Painter - Planted October 30, 2019. Pre-plant fertilizer was 60 lb. N on October 29, 2019. Application of .75 oz. Harmony Extra SG® + 60 lb. N using 30% UAN April 5, 2020. Harvest occurred June 22-23, 2020.

Holland - Planted October 31, 2019. Fertilizer was applied at 322 lb. 9-18-31 + 5000 lb. lime on January 30, 2020. Site was fertilized with 60 units N using 24-0-0-3 + 1 qt Mg + 75 oz Quelex® on February 4, 2020 and again with 60 units N using 24-0-0-3 on March 14, 2020. Harvest occurred June 10, 2020.

Orange - Planted October 15, 2019. Pre-plant fertilizer was 245 lb. 30-60-60 October 14, 2019. Sixty lb. N plus 0.5 oz. Harmony Extra SG® was applied February 18, 2020. Forty lb. N was applied March 18, 2020. Harvest occurred June 24, 2020.

Shenandoah Valley - Planted on November 4, 2019. Pre-plant fertilizer was 1 ton poultry litter. Peak was applied at .5 oz + 1 qt glyphosate preplant. Fifty units N were applied on March 4 and again on March 26, 2020. Harvest occurred on July 1, 2020.

Entries in 2019-20 Virginia Wheat Test, arranged by company.

Company	Line	Seed Treatment reported by company
AgriMAXX Wheat Company	**AgriMAXX 415**	Prime ST Standard = Cruiser 5fs + Maxim 4FS + Vibrance Extreme
7167 Highbanks Road	**AgriMAXX 473**	Prime ST Standard = Cruiser 5fs + Maxim 4FS + Vibrance Extreme
Mascoutah, IL 62258	**AgriMAXX 492**	Prime ST Standard = Cruiser 5fs + Maxim 4FS + Vibrance Extreme
	AgriMAXX 495	Prime ST Standard = Cruiser 5fs + Maxim 4FS + Vibrance Extreme
	AgriMAXX 496	Prime ST Standard = Cruiser 5fs + Maxim 4FS + Vibrance Extreme
	AgriMAXX 502	Prime ST Standard = Cruiser 5fs + Maxim 4FS + Vibrance Extreme
	AgriMAXX 503	Prime ST Standard = Cruiser 5fs + Maxim 4FS + Vibrance Extreme
	AgriMAXX 505	Prime ST Standard = Cruiser 5fs + Maxim 4FS + Vibrance Extreme
	AgriMAXX EXP 2002	Prime ST Standard = Cruiser 5fs + Maxim 4FS + Vibrance Extreme
	AgriMAXX EXP 2003	Prime ST Standard = Cruiser 5fs + Maxim 4FS + Vibrance Extreme
Corteva Agriscience	**Pioneer 26R10**	C281 Apron XL + Dividend H + Vibrance; Vibrance Extreme H
974 Centre Road, Chestnut Run Plaza Bldg. 735	**Pioneer 26R45**	C281 Apron XL + Dividend H + Vibrance; Vibrance Extreme H
Wilmington, DE 19805	**Pioneer 26R59**	C281 Apron XL + Dividend H + Vibrance; Vibrance Extreme H
Eddie Mercer AgriServices, Inc	**MBX 127**	Vibrance Extreme; Cruiser 5FS
6900 Linganore Road	**MBX 176**	Vibrance Extreme; Cruiser 5FS
Frederick, MD 21702	**MBX 17-M-245**	Vibrance Extreme; Cruiser 5FS
	MBX 223	Vibrance Extreme; Cruiser 5FS
	MBX 246	Vibrance Extreme; Cruiser 5FS
	MBX 969	Vibrance Extreme; Cruiser 5FS
Erwin-Keith, Inc. (Progeny)	**#Berkeley**	Evergol, Gaucho
1529 Hwy 193	**#Blaze**	Evergol, Gaucho
Wynne, AR 72396	**#Bullet**	Evergol, Gaucho
	19-10	Evergol, Gaucho
	19-11	Evergol, Gaucho
	19-12	Evergol, Gaucho
	19-15	Evergol, Gaucho
	19-17	Evergol, Gaucho
	PGX 18-11	Evergol, Gaucho
	PGX 18-2	Evergol, Gaucho
	PGX 18-7	Evergol, Gaucho
	PGX 18-8	Evergol, Gaucho
	PGX 18-9	Evergol, Gaucho
	PGX 19-3	Evergol, Gaucho
Featherstone Seed Inc.	**Featherstone 125**	sedaxane, difenoconazole, mefenoxam fungicide + imidacloprid insecticide
13941 Genito Road, Amelia, VA 23002	**Featherstone 31**	Vibrance Extreme

Entries in 2019-20 Virginia Wheat Test, arranged by company.

Company	Line	Seed Treatment reported by company
University of Florida	FL14078LDH-28	untreated
3105 McCarty Hall B	FL14167LDH-158	untreated
Gainesville, FL 32611	FL15105-LDH110	untreated
	FL15105-LDH145	untreated
	FLLA10033C-6	untreated
University of Georgia	GA10268-17LE16	Dividend Extreme®
1109 Experiment Street	GA10407-17E8	Dividend Extreme®
Griffin, GA 30223	GA11656-17E11	Dividend Extreme®
KWS Cereals	KWS242	Cruiser® 5FS + Vibrance Extreme
4101 Colleen Drive	KWS333	Cruiser® 5FS + Vibrance Extreme
Champaign, IL 61822		
Limagrain Cereal Seed	L11919	Cruiser MAXX® + Vibrance
7099 Parkbrook Lane	LCS 11719	Cruiser MAXX® + Vibrance
Codova, TN 38018		
Local Seed Company LLC	**LW2068**	Radius Wheat Premium with zinc (imidicloprid, metalaxyl, tebuconazole)
802 Rozelle Street	**LW2848**	Radius Wheat Premium with zinc (imidicloprid, metalaxyl, tebuconazole)
Memphis, TN 38104	**LW2958**	Radius Wheat Premium with zinc (imidicloprid, metalaxyl, tebuconazole)
	LWX20C	Radius Wheat Premium with zinc (imidicloprid, metalaxyl, tebuconazole)
Meherrin Ag & Chemical (Southern Harvest)	**SH 4400**	Vibrance Extreme + Super Symcoat
PO Box 200	**SH 7200**	Vibrance Extreme + Super Symcoat
Severn, NC 27877	**SH 7510**	Vibrance Extreme + Super Symcoat
Mid-Atlantic Seeds	**MAS #106**	MAS Proshield
204 St. Charles Way #163E	**MAS #128**	MAS Proshield
York, PA 17402	**MAS #130**	MAS Proshield
	MAS #133	MAS Proshield
	MAS #136	MAS Proshield
	MAS #140	MAS Proshield
	MAS #143	MAS Proshield
	MAS #316	MAS Proshield
	MAS #35	MAS Proshield
	MAS #67	MAS Proshield
	MAS #86	MAS Proshield
North Carolina State University	NC11546-14	untreated
840 Method Road Unit 3	NC15-21834	untreated
Raleigh, NC 27695-7629	NC15-21835	untreated

Entries in 2019-20 Virginia Wheat Test, arranged by company.

Company	Line	Seed Treatment reported by company
Nutrien Ag Solutions	**9002**	Foothold Virock + Awaken ST
15277 Richmond-Tappahannock Highway	**9070**	Cruiser MAXX® + Vibrance
St Stephens Church, VA 23148	**9772**	Foothold Virock + Awaken ST
	9932	Foothold Virock + Awaken ST
	9941	Foothold Virock + Awaken ST
	Laverne	Foothold Virock + Awaken ST
	Shirley	Foothold Virock + Awaken ST
	WX19713	Foothold Virock + Awaken ST
	WX20731	Foothold Virock + Awaken ST
	WX20737	Cruiser MAXX® + Vibrance
Syngenta (AgriPro)	**SY 007**	Cruiser® 5FS + Vibrance Extreme
14031 Trestle Road	**SY 547**	Cruiser® 5FS + Vibrance Extreme
Highland, IL 62249	**SY 576**	Cruiser® 5FS + Vibrance Extreme
	SY Richie	Cruiser® 5FS + Vibrance Extreme
	SY Viper	Cruiser® 5FS + Vibrance Extreme
Texas A&M AgriLife Research	TX15D9253	Cruiser MAXX® + Vibrance
2600 S Neal	TX15D9579	Cruiser MAXX® + Vibrance
Commerce, TX 75429	TX15D9597	Cruiser MAXX® + Vibrance
UniSouth Genetics, Inc.	**USG 3118**	USG Genetics trt: ipconazole, metalaxyl, imidacloprid
3205-C Highway 46S	**USG 3221**	USG Genetics trt: ipconazole, metalaxyl, imidacloprid
Dickson, TN 37055	**USG 3230**	USG Genetics trt: ipconazole, metalaxyl, imidacloprid
	USG 3316	USG Genetics trt: ipconazole, metalaxyl, imidacloprid
	USG 3329	USG Genetics trt: ipconazole, metalaxyl, imidacloprid
	USG 3458	USG Genetics trt: ipconazole, metalaxyl, imidacloprid
	USG 3536	USG Genetics trt: ipconazole, metalaxyl, imidacloprid
	USG 3790	USG Genetics trt: ipconazole, metalaxyl, imidacloprid
	USG 3895	USG Genetics trt: ipconazole, metalaxyl, imidacloprid
Virginia Tech and the Virginia	12VTK4-118	Provoke, Raxil-MD Pro, Gaucho 600
Crop Improvement Association	13VTK429-3	Provoke, Raxil-MD Pro, Gaucho 600
9142 Atlee Station Road	13VTK59-148	Provoke, Raxil-MD Pro, Gaucho 600
Mechanicsville, VA 23111	13VTK59-55	Provoke, Raxil-MD Pro, Gaucho 600
	14VDH-SRW14-150	Provoke, Raxil-MD Pro, Gaucho 600
	15VDH-FHB-MAS22-15	Provoke, Raxil-MD Pro, Gaucho 600
	15VDH-FHB-MAS25-08	Provoke, Raxil-MD Pro, Gaucho 600
	15VDH-FHB-MAS25-15	Provoke, Raxil-MD Pro, Gaucho 600

Entries in 2019-20 Virginia Wheat Test, arranged by company.

Company	Line	Seed Treatment reported by company
	15VDH-FHB-MAS33-13	Provoke, Raxil-MD Pro, Gaucho 600
	15VDH-FHB-MAS33-30	Provoke, Raxil-MD Pro, Gaucho 600
	15VDH-FHB-MAS34-18	Provoke, Raxil-MD Pro, Gaucho 600
	15VDH-FHB-MAS38-01	Provoke, Raxil-MD Pro, Gaucho 600
	15VDH-SRW02-075	Provoke, Raxil-MD Pro, Gaucho 600
	15VTK-12-21	Provoke, Raxil-MD Pro, Gaucho 600
	16VDH-SRW03-023	Provoke, Raxil-MD Pro, Gaucho 600
	16VDH-SRW04-028	Provoke, Raxil-MD Pro, Gaucho 600
	16VDH-SRW05-205	Provoke, Raxil-MD Pro, Gaucho 600
	16VDH-SRW06-131	Provoke, Raxil-MD Pro, Gaucho 600
	16VDH-SRW07-067	Provoke, Raxil-MD Pro, Gaucho 600
	16VDH-SRW09-025	Provoke, Raxil-MD Pro, Gaucho 600
	DH13SRW022-23	Provoke, Raxil-MD Pro, Gaucho 600
	DH15SRW65-53	Provoke, Raxil-MD Pro, Gaucho 600
	Hilliard	Provoke, Raxil-MD Pro, Gaucho 600
	Liberty 5658	Provoke, Raxil-MD Pro, Gaucho 600
	MAS1407-056-6-3	Provoke, Raxil-MD Pro, Gaucho 600
	Massey	Provoke, Raxil-MD Pro, Gaucho 600
	VA14HRW-25	Raxil-MD Pro, Gaucho 600
	VA15W-86	Provoke, Raxil-MD Pro, Gaucho 600
	VA16W-202	Provoke, Raxil-MD Pro, Gaucho 600
	VA17W-176	Provoke, Raxil-MD Pro, Gaucho 600
	VA17W-74	Provoke, Raxil-MD Pro, Gaucho 600
	VA17W-75	Provoke, Raxil-MD Pro, Gaucho 600
Winfield United	**CROPLAN CP8081**	Warden Cereals II + Resonate 480 ST
1080 County Road F West, MS 5850	**CROPLAN CP9606**	Warden Cereals II + Resonate 480 ST
Shoreview, MN 55126-2910		

Released cultivars are shown in bold print.

Table 17. Summary of performance of entries in the Virginia Tech Wheat Test over location, 2020 harvest.

Line	Grain Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Mature Height (In)		Plant Lodging (0-9)		Leaf Rust (0-9)		Powdery Mildew (0-9)		Septoria (0-9)		FHB Index[2] (0-9)	Awns[3]
	(6)		(6)		(2)		(3)		(5)		(2)		(1)		(1)		(1)	
MAS #143	102.5	+	58.7		121	+	39		0.3		0.9		0.8		2.0		0.9	A
LCS 11719	100.2	+	58.8		118		38		0.8		1.4		0.1		3.0		4.5	A
MBX 127	100.1	+	58.5		120	+	39		0.2		1.7		1.4		2.0		0.5	A
USG 3790	100.0	+	58.1		120	+	38		0.3		1.9		0.3		3.3		5.3	A
WX20731	99.1	+	58.3		122	+	39		0.6		1.1		1.0		2.0		0.7	A
LWX20C	98.4	+	58.6		121	+	40		0.3		1.7		1.1		1.3	-	0.9	A
19-11	97.9	+	58.0		121	+	39		0.3		1.5		0.2		2.3		1.0	A
15VDH-FHB-MAS33-13	97.3	+	59.9	+	118		38		0.6		0.0	-	3.2	+	1.3	-	0.2	AL
13VTK429-3	96.9	+	59.4	+	120	+	40		0.0		0.1	-	0.2		2.3		3.8	A
LW2848	96.8	+	58.4		122	+	40		0.2		0.8		0.6		3.3		1.8	A
19-10	96.8	+	56.6	-	121	+	37	-	0.0		1.8		0.0		2.7		0.6	A
PGX 18-8	96.8	+	59.1		120	+	37	-	0.2		1.9		0.1		2.7		2.8	A
MAS1407-056-6-3	96.0	+	59.9	+	121	+	40		0.2		0.6		2.0	+	2.0		2.2	A
SY 547	95.8	+	58.4		119		42	+	0.4		0.9		0.1		3.0		2.5	TA
Pioneer 26R45	95.5	+	58.3		119	+	39		0.6		1.0		0.4		2.7		2.7	TA-AL
MAS #136	95.4	+	57.8	-	122	+	38		1.8	+	3.4	+	0.1		2.7		2.7	A
DH15SRW65-53	95.3	+	59.5	+	120	+	37	-	0.5		0.1	-	0.8		3.0		3.3	A
AgriMAXX 502	95.2	+	58.7		116	-	39		0.0		1.7		0.0		3.3		1.1	A
LW2068	95.2	+	57.2	-	120	+	38		0.0		4.3	+	0.3		3.0		0.8	A
MAS #140	95.1	+	58.0		121	+	41	+	0.1		1.9		2.0	+	3.3		0.6	TA
MAS #128	94.6	+	57.7	-	123	+	37	-	0.5		2.6	+	1.6		3.7		4.2	TA-AL
#Blaze	94.6	+	58.5		120	+	39		0.8		3.7	+	0.9		3.7		1.0	A
PGX 18-7	94.5	+	58.6		119	+	40		0.0		1.3		1.2		3.0		2.7	A
L11919	94.5	+	58.6		115	-	38		0.8		0.4		0.6		2.0		1.2	TA
16VDH-SRW03-023	94.4	+	58.4		118		39		0.0		0.0	-	0.8		2.0		3.4	TA
AgriMAXX 473	94.4	+	58.5		121	+	40		0.0		0.4		0.1		2.3		1.7	A
MAS #316	94.4	+	58.1		122	+	40	+	0.0		2.3	+	1.9	+	3.0		0.8	A
Featherstone 125	94.4	+	61.0	+	118		40		0.5		0.1	-	2.5	+	3.3		0.9	A

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Line	Grain Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Mature Height (In)		Plant Lodging (0-9)		Leaf Rust (0-9)		Powdery Mildew (0-9)		Septoria (0-9)		FHB Index[2] (0-9)	Awns[3]
	(6)		(6)		(2)		(3)		(5)		(2)		(1)		(1)		(1)	
15VDH-FHB-MAS25-15	94.4	+	60.1	+	116	-	37	-	0.0		0.0	-	1.6		3.3		0.5	A
19-15	94.3	+	59.2	+	118		37	-	0.6		1.3		1.8		4.0		4.1	AL
USG 3329	94.3	+	58.1		119		39		0.8		3.4	+	0.7		4.0		1.2	A
SY 576	94.1	+	57.6	-	126	+	41	+	0.0		0.6		2.8	+	3.7		2.5	A
#Bullet	94.0	+	58.3		121	+	40		0.7		1.2		0.4		2.7		1.3	A
MBX 223	94.0	+	58.5		118		39		1.0		2.9	+	0.4		3.7		1.3	A
CROPLAN CP9606	93.7		57.9		118		38		0.0		1.7		1.8		3.7		2.9	A
SY Viper	93.7		60.1	+	115	-	40	+	0.6		2.4	+	0.1		3.0		1.0	AL
MAS #133	93.6		56.4	-	120	+	40		0.3		2.4	+	0.7		3.0		1.5	A
VA17W-74	93.2		60.0	+	116	-	39		0.7		0.1	-	0.0		3.3		0.9	AL
VA17W-75	93.1		59.9	+	117		40		0.4		0.0	-	0.0		2.3		0.4	TA
SH 4400	93.0		58.9		121	+	41	+	0.1		1.7		2.1	+	3.7		3.8	TA
14VDH-SRW14-150	92.7		58.4		116	-	39		0.0		0.4	-	0.4		3.3		1.2	A
PGX 19-3	92.6		58.3		121	+	41	+	0.2		1.9		1.2		3.7		0.5	TA
EXP 2003	92.3		57.2	-	119	+	38		0.0		4.4	+	0.5		3.0		0.5	A
AgriMAXX 503	92.3		58.0		121	+	40	+	0.1		1.8		2.1	+	3.3		0.5	TA
WX20737	92.2		59.8	+	117		38		0.0		1.6		0.1		2.7		0.6	A
15VTK-12-21	92.0		60.1	+	121	+	40		0.1		1.1		0.2		2.3		2.5	A
9772	92.0		55.6	-	120	+	40		0.3		0.6		1.0		3.3		0.4	A
GA10268-17LE16	91.9		58.1		122	+	39		4.9	+	0.0	-	0.4		3.0		6.1	A
WX19713	91.9		59.6	+	120	+	40		0.0		4.6	+	0.8		3.3		1.2	A
GA10407-17E8	91.7		59.8	+	118		39		0.9		0.0	-	2.0	+	4.3		3.8	A
MBX 246	91.6		59.1		120	+	41	+	0.2		1.9		0.9		2.7		0.5	A
13VTK59-55	91.5		59.3	+	119		38	-	0.1		0.0	-	0.7		1.7	-	2.2	TA
USG 3316	91.4		58.7		121	+	39		0.0		4.0	+	5.4	+	4.0		2.0	A
VA17W-176	91.3		58.0		117	-	39		0.6		0.0	-	1.7		3.3		2.0	TA-AL
FL14167LDH-158	91.1		58.7		116	-	41	+	0.1		0.5		0.5		3.0		1.1	A
MBX 176	91.0		57.3	-	120	+	39		0.3		4.6	+	0.2		3.3		0.7	A

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Line	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Leaf Rust (0-9)	Powdery Mildew (0-9)	Septoria (0-9)	FHB Index[2] (0-9)	Awns[3]
	(6)	(6)	(2)	(3)	(5)	(2)	(1)	(1)	(1)	
15VDH-FHB-MAS34-18	90.9	60.6 +	116 -	38	0.3	0.2 -	0.0	1.7 -	0.3	TA
19-17	90.9	57.9	116 -	35 -	1.3 +	0.1 -	0.0	3.7	1.4	AL
MAS #86	90.9	57.4 -	119 +	41 +	0.1	2.0	0.3	3.0	0.7	A
9070	90.6	58.3	117	39	0.0	2.0	0.1	2.7	0.9	A
12VTK4-118	90.4	59.5 +	117	39	0.3	0.9	1.4	2.0	1.1	TA
AgriMAXX 495	90.4	58.9	120 +	39	0.0	1.3	1.2	3.0	2.3	A
USG 3536	90.1	58.4	120 +	39	0.9	0.6	0.2	3.3	0.7	A
SH 7510	90.1	58.5	119 +	39	0.2	0.1 -	1.0	3.0	3.6	A
LW2958	90.0	58.9	120 +	41 +	0.0	1.9	0.3	3.3	1.0	A
KWS242	90.0	58.6	116 -	39	0.1	5.1 +	0.9	3.3	0.8	A
19-12	89.9	56.7 -	119	39	0.2	0.7	0.4	4.3	1.0	A
GA11656-17E11	89.9	60.5 +	118	40 +	1.4 +	0.4 -	0.7	2.7	3.6	A
MAS #35	89.6	58.6	121 +	40	0.6	3.7 +	1.6	2.7	1.6	A
Shirley	89.5	56.8 -	119 +	37 -	0.1	0.1 -	0.0	1.7 -	4.9	AL
16VDH-SRW07-067	89.4	58.3	114 -	35 -	0.3	0.1 -	0.0	4.0	0.6	A
Liberty 5658	89.1	59.0	117	40	0.1	0.6	0.9	5.3 +	0.4	A
Pioneer 26R59	89.0	58.5	118	36 -	0.1	2.1	0.9	2.3	4.1	AL
9932	88.8	59.1	120 +	39	0.2	1.1	1.5	2.3	2.4	A
Hilliard	88.7	58.5	117	41 +	0.0	0.2 -	0.1	3.0	0.9	A
SY 007	88.7	57.7 -	116 -	40	0.1	1.4	0.6	3.3	0.6	A
9941	88.7	56.5 -	119 +	38	0.3	2.7 +	1.8	3.0	0.8	A
16VDH-SRW04-028	88.4	60.4 +	116 -	39	0.2	0.1 -	0.3	3.0	0.4	A
13VTK59-148	88.3	59.3 +	117 -	40 +	0.3	0.1 -	0.8	3.3	0.7	TA
MBX 17-M-245	88.2	57.7 -	117 -	38 -	0.2	1.6	0.7	2.3	3.3	AL
SY Richie	88.1	58.1	113 -	37 -	0.1	0.4	0.6	2.3	1.7	TA-AL
USG 3458	88.0	57.8 -	118	38	0.1	2.1	1.1	3.3	3.9	AL
AgriMAXX 505	87.9	59.5 +	121 +	39	0.3	3.6 +	0.8	4.3	0.5	A
16VDH-SRW09-025	87.9	58.4	116 -	41 +	0.0	0.4 -	0.4	2.0	2.3	A

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	(6)	(6)	(2)	(3)	(5)	(2)	(1)	(1)	(1)	
USG 3118	87.7	60.1 +	113 -	35 -	0.6	0.1 -	0.8	3.3	1.1	Long AL
AgriMAXX 496	87.5	56.6 -	120 +	37 -	0.0	2.2	2.8 +	3.3	2.0	A
PGX 18-9	87.4	56.0 -	120 +	38	0.0	5.9 +	0.2	3.3	0.5	A
15VDH-FHB-MAS38-01	86.8	57.0 -	112 -	35 -	0.5	0.4	0.4	3.7	0.1	A
VA16W-202	86.7	57.2 -	114 -	35 -	0.3	0.1 -	0.2	2.7	1.6	AL
MBX 969	86.4	56.5 -	120 +	38	0.3	1.7	1.6	2.7	0.5	A
15VDH-SRW02-075	86.2	58.6	120 +	41 +	0.1	0.1 -	1.0	2.7	2.1	A
Featherstone 31	85.7	58.6	120 +	38	0.0	0.8	0.4	2.0	3.8	A
FLLA10033C-6	85.7	57.2 -	120 +	42 +	0.0	0.4 -	1.2	4.0	3.5	A
DH13SRW022-23	85.7	58.3	119 +	36 -	0.3	0.9	0.0	4.7 +	1.4	TA
16VDH-SRW05-205	85.4	58.4	117	37 -	0.0	0.1 -	0.0	3.0	3.2	A
MAS #130	85.3	58.0	116 -	38	0.1	5.0 +	0.5	4.0	1.0	A
EXP 2002	85.2	59.0	114 -	40	0.2	1.6	0.8	4.0	0.2	A
TX15D9579	85.0	58.6	115 -	40	0.4	0.1 -	0.1	2.7	2.2	A
USG 3221	84.9	59.0	114 -	39	0.0	2.9 +	0.6	3.7	0.1	A
USG 3230	84.8	57.6 -	118	39	0.0	1.6	1.1	3.7	2.8	A
NC15-21834	84.8	59.9 +	120 +	42 +	3.4 +	0.3 -	0.1	3.0	1.5	A
AgriMAXX 415	84.7	59.0	118	39	0.3	1.9	2.5 +	3.0	1.3	A
NC15-21835	84.7	59.6 +	120 +	42 +	1.4 +	0.2 -	0.1	3.0	2.2	A
15VDH-FHB-MAS22-15	84.6 -	60.1 +	111 -	35 -	0.3	0.0 -	0.4	3.0	1.3	TA
CROPLAN CP8081	84.1 -	58.6	118	39	0.1	0.7	2.8 +	2.7	0.7	A
VA15W-86	84.1 -	57.7 -	115 -	38	0.8	0.4 -	0.3	3.3	0.8	A
9002	83.9 -	57.8 -	119	41 +	0.1	1.9	2.7 +	2.7	1.9	A
FL14078LDH-28	83.9 -	60.2 +	118	42 +	1.3 +	1.3	0.3	5.0 +	2.6	A
USG 3895	83.7 -	56.9 -	118	38	0.0	0.9	2.8 +	2.3	4.7	A
TX15D9597	83.2 -	59.4 +	115 -	40	0.0	0.4	1.4	3.7	3.8	A
VA14HRW-25	82.9 -	58.5	114 -	41 +	1.7 +	0.5	1.1	4.7 +	1.3	A
KWS333	82.7 -	57.1 -	116 -	39	0.2	0.7	0.8	5.0 +	0.5	A

Table 17. Summary of performance of entries in the Virginia Tech Wheat Test over location, 2020 harvest.

Line	Grain Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Mature Height (In)		Plant Lodging (0-9)		Leaf Rust (0-9)		Powdery Mildew (0-9)		Septoria (0-9)		FHB Index[2] (0-9)	Awns[3]
	(6)		(6)		(2)		(3)		(5)		(2)		(1)		(1)		(1)	
Pioneer 26R10	82.6	-	58.5		120	+	40		0.1		3.0	+	0.9		4.3		1.9	A
15VDH-FHB-MAS33-30	82.3	-	61.1	+	112	-	37	-	0.0		0.4		0.1		5.7	+	0.4	A
Laverne	82.2	-	58.3		114	-	33	-	0.0		0.4	-	1.2		4.3		2.2	AL
#Berkeley	81.5	-	57.8	-	113	-	38	-	0.1		0.8		0.3		4.3		0.7	A
TX15D9253	80.8	-	56.2	-	115	-	40		1.7	+	0.2	-	0.6		4.7	+	3.5	A
SH 7200	80.7	-	59.0		114	-	39		1.2	+	0.1	-	0.8		2.3		1.3	A
PGX 18-11	79.7	-	58.5		113	-	37	-	0.3		0.3	-	0.3		3.3		0.7	A
16VDH-SRW06-131	78.7	-	59.2		113	-	37	-	0.6		0.7		0.7		3.3		0.3	A
PGX 18-2	77.9	-	58.2		117		38		0.0		0.2	-	0.1		4.3		0.4	A
MAS #67	77.9	-	56.5	-	118		38		0.0		2.0		1.9	+	3.3		0.6	TA
AgriMAXX 492	77.6	-	59.5	+	114	-	38		0.4		0.4	-	0.0		6.7	+	0.5	A
FL15105-LDH145	76.5	-	59.8	+	114	-	39		0.0		0.1	-	0.6		3.3		0.2	A
15VDH-FHB-MAS25-08	76.4	-	59.2	+	112	-	37	-	0.2		0.0	-	0.8		3.7		0.0	A
FL15105-LDH110	76.0	-	59.8	+	114	-	38		0.0		0.2	-	0.0		2.7		0.1	A
NC11546-14	74.8	-	59.8	+	117		39		0.7		0.1	-	0.0		4.3		0.5	A
MAS #106	73.9	-	58.3		112	-	37	-	0.5		1.4		3.1	+	4.3		0.1	AL
Massey	65.7	-	58.7		119		42	+	2.4	+	7.3	+	0.2		3.0		0.9	AL
Average	89.2		58.5		118		39		0.4		1.3		0.9		3.2			
LSD (O.05)	4.6		0.7		1		1		0.7		1.0		0.9		1.2			
C.V.	8.8		2.0		1		4		---		---		---		---			

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

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

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

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

[2] FHB (fusarium head blight) Index is an overall indicator of scab resistance/susceptibility level and takes into account both incidence and severity; 0 = highly resistant and 9 = highly susceptible.

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

Table 18. Two-year average summary of performance of entries in the Virginia Tech Wheat Tests, 2019 and 2020 harvests.

Line	Grain Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Mature Height (In)		Plant Lodging (0-9)	Leaf Rust (0-9)		Powdery Mildew (0-9)		BYD Virus[1] (0-9)		Septoria (0-9)	FHB Index[2] (0-100)
	(12)		(12)		(4)		(6)		(8)	(4)		(3)		(1)		(1)	(2)
USG 3790	95.3	+	58.1		121	+	35		0.3	2.6	+	0.2		1.0		3.3	33.2
PGX 18-8	95.1	+	58.5	+	121	+	34	-	0.1	2.4	+	0.1		1.0		2.7	23.4
SY Viper	93.4	+	59.6	+	116	-	37	+	0.7	2.8	+	0.1		2.3		3.0	13.0
LCS 11719	92.4	+	58.3		120		34	-	0.6	1.9		0.1		1.7		3.0	27.1
PGX 18-7	91.8	+	58.6	+	120		36		0.0	1.4		0.9		2.7		3.0	26.1
Featherstone 125	91.1	+	60.2	+	120	+	36		0.8	0.2	-	1.8	+	1.0		3.3	32.1
#Blaze	91.1	+	58.0		120		36		1.0	3.6	+	0.8		3.3	+	3.7	16.7
13VTK429-3	91.0	+	58.9	+	121	+	36		0.1	0.5	-	0.1		0.7	-	2.3	30.0
USG 3329	91.0	+	57.8		119		36		0.6	3.7	+	0.5		3.0		4.0	23.3
Pioneer 26R59	90.6	+	57.9		119		33	-	0.3	3.0	+	0.6		2.7		2.3	38.0
VA17W-176	90.6	+	58.3		118	-	35		0.4	0.2	-	1.9	+	1.0		3.3	24.3
VA17W-75	90.5	+	59.3	+	118	-	36		0.8	0.4	-	0.0	-	2.3		2.3	5.5
USG 3316	90.1	+	58.2		121	+	36		0.3	4.0	+	4.6	+	3.0		4.0	17.2
Pioneer 26R45	90.1	+	58.2		120	+	36	+	0.9	1.2		0.7		3.0		2.7	---
LW2848	89.8		57.6	-	122	+	37	+	0.4	1.1		0.6		1.0		3.3	9.7
SY Richie	89.1		57.6	-	115	-	34		0.4	0.5	-	0.6		1.3		2.3	28.4
AgriMAXX 473	89.1		57.7		121	+	37	+	0.2	0.5	-	0.1		2.3		2.3	12.7
CROPLAN CP9606	89.1		57.3	-	119		35		0.2	2.1		1.3		3.0		3.7	33.4
VA17W-74	89.1		59.4	+	117	-	36		0.6	0.3	-	0.0	-	1.3		3.3	14.0
MAS #86	89.1		57.0	-	120	+	37	+	0.5	2.4	+	0.4		1.0		3.0	4.6
MBX 17-M-245	88.9		57.4	-	118		35		0.3	2.3	+	0.5		2.3		2.3	31.9
9772	88.6		56.0	-	119		36		0.4	0.7	-	1.0		1.7		3.3	6.4
9941	88.6		56.4	-	120	+	36		0.2	3.0	+	1.4		1.7		3.0	9.8
SY 547	88.1		58.0		119		38	+	0.8	1.1		0.1		3.0		3.0	20.8
MAS #316	87.9		57.6	-	122	+	37	+	0.4	3.0	+	1.8	+	2.7		3.0	7.7
LW2958	87.8		58.5		121	+	37	+	0.4	2.0		0.2		2.7		3.3	11.4
AgriMAXX 496	87.7		56.7	-	121	+	34	-	0.2	2.6	+	2.7	+	2.0		3.3	12.3
SH 7510	87.7		58.2		120	+	36		0.7	0.7	-	0.9		2.3		3.0	26.0

Table 18. Two-year average summary of performance of entries in the Virginia Tech Wheat Tests, 2019 and 2020 harvests.

Line	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Leaf Rust (0-9)	Powdery Mildew (0-9)	BYD Virus[1] (0-9)	Septoria (0-9)	FHB Index[2] (0-100)
	(12)	(12)	(4)	(6)	(8)	(4)	(3)	(1)	(1)	(2)
#Bullet	87.7	57.5 -	121 +	36 +	0.6	1.2	0.3	2.0	2.7	8.5
MAS #35	87.6	57.8	121 +	36	0.6	3.6 +	1.3	2.0	2.7	14.4
USG 3458	87.4	57.3 -	119	35	0.3	2.9 +	0.8	2.0	3.3	37.4
Shirley	87.4	56.9 -	120 +	34 -	0.4	0.5 -	0.0 -	1.7	1.7 -	42.9 +
AgriMAXX 495	87.2	58.7 +	120 +	36	0.3	1.7	1.0	2.7	3.0	16.7
Hilliard	87.0	58.0	118	37 +	0.0	0.6 -	0.1	1.3	3.0	13.7
SH 4400	86.9	58.2	122 +	37 +	0.4	2.8 +	2.2 +	3.0	3.7	31.4
Liberty 5658	86.6	58.8 +	118 -	36 +	0.4	0.9	0.6	1.0	5.3 +	9.1
VA16W-202	86.6	57.0 -	117 -	33 -	0.3	0.3 -	0.1	1.0	2.7	21.1
SY 007	86.2	57.9	117 -	36	0.2	1.6	0.4	2.7	3.3	18.2
13VTK59-55	86.1	59.0 +	120	34 -	0.2	0.3 -	0.6	1.0	1.7 -	26.9
15VDH-SRW02-075	85.9	58.2	121 +	37 +	0.5	0.3 -	0.7	1.0	2.7	24.3
SY 576	85.8	56.9 -	126 +	37 +	0.2	0.7 -	3.0 +	1.3	3.7	13.5
DH13SRW022-23	85.6	58.2	120 +	34 -	0.7	0.8	0.0 -	0.7 -	4.7 +	10.4
Pioneer 26R10	85.6	57.9	121 +	36	0.1	3.5 +	0.8	2.0	4.3	22.6
VA15W-86	85.6	57.7	117 -	35	0.8	0.4 -	0.2	1.3	3.3	13.2
9932	85.6	58.7 +	121 +	36	0.3	1.6	1.1	1.3	2.3	14.7
AgriMAXX 415	85.4	59.0 +	119	36	0.5	2.4 +	2.2 +	2.3	3.0	21.6
MBX 969	85.0	56.5 -	120 +	35	0.3	2.4 +	1.4	2.3	2.7	7.3
USG 3118	84.9	59.3 +	116 -	33 -	0.3	0.3 -	0.6	3.0	3.3	15.7
USG 3895	84.8	57.0 -	119	34 -	0.7	1.0	2.9 +	1.7	2.3	41.3 +
USG 3536	84.4	57.5 -	121 +	36	0.7	0.7 -	0.1	2.3	3.3	6.4
Laverne	84.3	58.2	116 -	31 -	0.2	0.4 -	0.9	1.3	4.3	17.9
15VDH-FHB-MAS22-15	84.1	59.5 +	113 -	33 -	0.6	0.2 -	0.3	1.0	3.0	13.7
#Berkeley	84.0	57.4 -	116 -	35	0.4	0.9	0.2	1.7	4.3	26.6
Featherstone 31	83.9	58.3	121 +	35	0.5	0.8	0.3	2.3	2.0 -	50.1 +
15VDH-FHB-MAS25-08	82.6 -	58.9 +	115 -	34 -	0.4	0.2 -	0.6	1.0	3.7	6.2
PGX 18-2	82.4 -	58.5	118 -	35	0.2	0.6 -	0.1	1.7	4.3	11.8

Table 18. Two-year average summary of performance of entries in the Virginia Tech Wheat Tests, 2019 and 2020 harvests.

Line	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Leaf Rust (0-9)	Powdery Mildew (0-9)	BYD Virus[1] (0-9)	Septoria (0-9)	FHB Index[2] (0-100)
	(12)	(12)	(4)	(6)	(8)	(4)	(3)	(1)	(1)	(2)
TX15D9597	82.3 -	58.9 +	116 -	36 +	0.5	0.7 -	1.0	3.3 +	3.7	51.0 +
TX15D9579	82.2 -	57.8	117 -	36	0.3	0.3 -	0.1	1.7	2.7	44.1 +
15VDH-FHB-MAS33-30	81.4 -	60.4 +	114 -	34 -	0.4	0.5 -	0.1	1.7	5.7 +	26.9
TX15D9253	80.8 -	56.0 -	117 -	36	1.2 +	0.4 -	0.4	2.0	4.7 +	56.2 +
SH 7200	80.3 -	58.5 +	116 -	36	0.9	0.4 -	0.6	3.0	2.3	47.0 +
MAS #67	80.3 -	56.4 -	119	34 -	0.3	2.0	1.5	2.0	3.3	2.9 -
NC15-21834	77.8 -	59.5 +	121 +	38 +	2.2 +	0.5 -	0.1	1.7	3.0	22.7
MAS #106	75.6 -	58.1	113 -	34 -	0.5	1.9	2.9 +	2.7	4.3	1.0 -
Massey	69.3 -	58.6 +	119	38 +	1.6 +	7.2 +	0.1	1.0	3.0	16.8
Average	86.6	58.1	119	35	0.5	1.5	0.8	1.9	3.2	21.3
LSD (O.05)	3.5	0.4	1	1	0.5	0.7	0.8	1.2	1.2	18.3
C.V.	9.7	1.9	1	5	---	---	---	---	---	74.9

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

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

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

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

[1] BYD = Barley Yellow Dwarf Virus.

[2] FHB (fusarium head blight) Index is an overall indicator of scab resistance/susceptibility level and takes into account both incidence and severity; 0 = highly resistant and 100 = highly susceptible.

Table 19. Three-year average summary of performance of entries in the Virginia Tech Wheat Tests, 2018, 2019, and 2020 harvests.

Line	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Leaf Rust (0-9)	Powdery Mildew (0-9)	BYD Virus[1] (0-9)	Septoria (0-9)	FHB Index[2] (0-100)
	(17)	(18)	(6)	(9)	(11)	(4)	(7)	(1)	(1)	(3)
LCS 11719	87.9 +	57.2 +	122 +	34 -	1.5	1.9	0.6 -	1.7	3.0	10.3 -
SY Viper	87.6 +	58.5 +	119 -	37 +	2.0 +	2.8 +	1.0 -	2.3	3.0	27.6
USG 3329	86.6 +	56.6	121	36	1.9	3.7 +	1.3	3.0	4.0	25.6
13VTK429-3	86.3 +	57.8 +	123 +	35	1.0	0.5 -	0.6 -	0.7 -	2.3	30.8
Pioneer 26R59	85.8 +	56.6	121	33 -	0.6 -	3.0 +	1.0 -	2.7	2.3	45
USG 3316	85.6 +	56.7	123 +	36	1.0	4.0 +	5.2 +	3.0	4.0	20.5
#Blaze	85.6 +	56.6	122	36	2.5 +	3.6 +	1.5	3.3	3.7	22
MAS #86	84.5	55.9 -	122 +	37 +	1.3	2.4	1.3	1.0	3.0	23.5
MBX 17-M-245	84.3	56.0 -	120 -	34 -	0.8	2.3	1.2	2.3	2.3	33.2
Pioneer 26R45	84.0	56.9	122 +	36	1.8	1.2	2.0	3.0	2.7	26.2
9941	84.0	55.4 -	122 +	35	1.1	3.0 +	2.6 +	1.7	3.0	39.5
Featherstone 125	83.9	59.2 +	122 +	36	1.8	0.2 -	2.7 +	1.0	3.3	43
CROPLAN CP9606	83.8	56.1 -	121 -	35	0.8	2.1	2.3 +	3.0	3.7	28.7
AgriMAXX 473	83.6	56.4 -	123 +	36 +	1.4	0.5 -	0.8 -	2.3	2.3	23.6
9772	83.5	55.0 -	121	36 +	1.4	0.7 -	2.2	1.7	3.3	12 -
SY 547	83.5	56.9	121	37 +	1.3	1.1	0.6 -	3.0	3.0	26.8
VA16W-202	83.4	55.6 -	120 -	32 -	1.7	0.3 -	0.4 -	1.0	2.7	36.1
USG 3458	83.3	56.1 -	121 -	35	1.1	2.9 +	1.8	2.0	3.3	41.4
MAS #316	83.0	56.6	124 +	36 +	1.7	3.0 +	2.6 +	2.7	3.0	50.5 +
Shirley	82.9	55.9 -	122 +	34 -	0.8	0.5 -	0.2 -	1.7	1.7 -	49.3 +
#Bullet	82.7	56.3 -	123 +	36 +	1.8	1.2	1.0 -	2.0	2.7	23.8
Liberty 5658	82.6	57.7 +	120 -	36 +	1.3	0.9 -	2.0	1.0	5.3 +	21.3
AgriMAXX 415	82.2	58.0 +	121	36	1.2	2.4	2.8 +	2.3	3.0	25.5
USG 3895	82.1	56.0 -	122	34 -	1.0	1.0 -	3.4 +	1.7	2.3	47 +
AgriMAXX 495	81.7	56.9	122	35	0.8	1.7	1.6	2.7	3.0	22.4
Pioneer 26R10	81.6	56.8	123 +	36	0.7 -	3.5 +	2.5 +	2.0	4.3 +	29.7
Hilliard	81.5	56.7	121	37 +	0.7 -	0.6 -	0.6 -	1.3	3.0	19.5
SH 7510	81.5	56.7	123 +	35	1.6	0.7 -	1.8	2.3	3.0	40.7

Table 19. Three-year average summary of performance of entries in the Virginia Tech Wheat Tests, 2018, 2019, and 2020 harvests.

Line	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Date Headed (Julian)	Mature Height (In)	Plant Lodging (0-9)	Leaf Rust (0-9)	Powdery Mildew (0-9)	BYD Virus[1] (0-9)	Septoria (0-9)	FHB Index[2] (0-100)
	(17)	(18)	(6)	(9)	(11)	(4)	(7)	(1)	(1)	(3)
Laverne	81.2	57.1	118 -	30 -	0.6 -	0.4 -	1.1 -	1.3	4.3 +	30.3
SH 4400	80.7	56.8	124 +	37 +	1.4	2.8 +	4.1 +	3.0	3.7	41.3
#Berkeley	80.7	56.4	119 -	35	1.1	0.9 -	1.1 -	1.7	4.3 +	39.5
Featherstone 31	79.8 -	57.3 +	123 +	34	1.9	0.8 -	1.1 -	2.3	2.0	50.1 +
USG 3118	79.4 -	57.8 +	119 -	32 -	1.4	0.3 -	0.6 -	3.0	3.3	31.4
SH 7200	76.7 -	57.6 +	119 -	36 +	1.7	0.4 -	1.5	3.0	2.3	53 +
Massey	65.7 -	57.5 +	122	38 +	2.9 +	7.2 +	0.9 -	1.0	3.0	24.3
Average	82.7	56.8	121	35	1.4	1.8	1.6	2.1	3.1	31.9
LSD (0.05)	2.8	0.4	1	1	0.6	0.8	0.5	1.3	1.2	14.7
C.V.	9.6	1.9	1	5	---	---	---	---	---	52.4

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

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

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

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

[1] BYD = Barley Yellow Dwarf Virus.

[2] FHB (fusarium head blight) Index is an overall indicator of scab resistance/susceptibility level and takes into account both incidence and severity; 0 = highly resistant and 100 = highly susceptible.

Table 20. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern VA AREC in Warsaw, VA, 2020 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)	Powdery Mildew (0-9)	Septoria (0-9)
19-15	---	---	127.8 +	58.9 +	113	39 -	0.5	2.3	1.3	4.0
19-17	---	---	127.6 +	58.3	109 -	36 -	1.8 +	0.0 -	0.0	3.7
16VDH-SRW03-023	---	---	127.4 +	57.8	113	41	0.0	0.0 -	0.0	2.0
Pioneer 26R45	96.8 +	107.5 +	126.8 +	57.4 -	115 +	42	1.8 +	1.3	0.3	2.7
15VDH-FHB-MAS33-13	---	---	126.7 +	59.4 +	113	41	0.8	0.0 -	1.3	1.3 -
15VDH-FHB-MAS25-15	---	---	126.4 +	59.5 +	110 -	39	0.0	0.0 -	0.0	3.3
CROPLAN CP9606	93.3	103.2	124.8 +	57.8	113	41	0.0	2.3	0.7	3.7
Shirley	95.6 +	103.3	124.7 +	57.3 -	115 +	39	0.0	0.3	0.0	1.7 -
L11919	---	---	124.7 +	58.6	107 -	40	0.5	0.7	0.3	2.0
19-12	---	---	123.9 +	56.5 -	114 +	41	0.3	0.3	0.3	4.3
16VDH-SRW05-205	---	---	123.6 +	58.3	111	38 -	0.0	0.0 -	0.0	3.0
VA17W-75	---	107.3 +	123.4 +	59.8 +	112	41	1.3 +	0.0 -	0.0	2.3
Featherstone 125	89.7	104.7 +	123.1 +	60.5 +	113	42	0.3	0.0 -	0.8	3.3
PGX 18-7	---	104.3 +	122.6 +	59.0 +	114 +	42 +	0.0	2.0	0.8	3.0
15VDH-FHB-MAS38-01	---	---	122.6 +	56.7 -	103 -	36 -	0.3	1.0	0.3	3.7
14VDH-SRW14-150	---	---	122.3 +	58.7	109 -	42	0.0	0.5	0.0	3.3
VA17W-74	---	108.0 +	122.2 +	59.0 +	110 -	40	0.8	0.2 -	0.0	3.3
LCS 11719	99.4 +	106.5 +	121.3	57.8	112	40	0.0	2.0	0.0	3.0
WX20737	---	---	121.3	59.6 +	113	40	0.0	2.3	0.0	2.7
DH15SRW65-53	---	---	121.2	59.9 +	115 +	39 -	0.5	0.0 -	0.0	3.0
LWX20C	---	---	121.2	57.7	116 +	41	0.3	2.7	0.5	1.3 -
SH 7510	88.9	100.9	121.1	58.5	114 +	41	0.0	0.2 -	0.0	3.0
MAS #143	---	---	120.4	57.8	116 +	42	0.0	1.3	0.3	2.0
Pioneer 26R59	98.5 +	110.0 +	120.3	57.5	113	38 -	0.3	2.7	0.0	2.3
15VTK-12-21	---	---	120.2	59.3 +	118 +	42 +	0.3	1.7	0.2	2.3
VA17W-176	---	108.0 +	119.9	57.6	111	41	0.8	0.0 -	0.2	3.3
13VTK59-148	---	---	119.9	58.9 +	111	43 +	0.3	0.0 -	0.0	3.3
16VDH-SRW09-025	---	---	119.0	58.4	110 -	43 +	0.0	0.2 -	0.0	2.0
FL14167LDH-158	---	---	118.8	58.7	110 -	44 +	0.3	0.8	0.2	3.0

Table 20. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern VA AREC in Warsaw, VA, 2020 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)	Powdery Mildew (0-9)	Septoria (0-9)
13VTK59-55	---	101.1	118.3	58.1	113	39	0.3	0.0 -	0.3	1.7 -
15VDH-SRW02-075	---	105.3 +	118.1	58.3	115 +	42	0.0	0.3	0.0	2.7
VA15W-86	---	104.7 +	117.8	58.0	107 -	41	0.5	0.7	0.0	3.3
WX19713	---	---	117.5	59.2 +	116 +	41	0.0	5.7 +	0.3	3.3
PGX 19-3	---	---	117.3	58.1	116 +	42	0.5	2.7	1.0	3.7
USG 3895	95.6 +	102.8	117.2	56.1 -	113	39	0.0	1.3	1.0	2.3
MBX 127	---	---	117.1	57.6	116 +	40	0.5	2.0	1.5 +	2.0
16VDH-SRW07-067	---	---	117.1	58.4	105 -	36 -	0.8	0.0 -	0.0	4.0
19-10	---	---	116.7	56.3 -	116 +	39	0.0	3.2	0.0	2.7
MAS1407-056-6-3	---	---	116.6	59.3 +	117 +	41	0.5	0.3	1.0	2.0
GA10407-17E8	---	---	116.6	60.8 +	113	42 +	0.0	0.0 -	0.3	4.3
USG 3790	---	104.0 +	116.6	58.1	115 +	39	0.0	2.7	0.0	3.3
LW2848	---	98.7	116.5	57.5	117 +	42	0.3	0.8	0.3	3.3
9932	---	100.8	116.4	58.1	115 +	41	0.0	1.7	0.5	2.3
GA10268-17LE16	---	---	116.4	58.8 +	117 +	44 +	3.5 +	0.0 -	0.3	3.0
AgriMAXX 503	---	---	116.2	58.4	116 +	41	0.3	1.8	1.5 +	3.3
VA16W-202	96.9 +	104.2 +	116.2	57.1 -	106 -	37 -	0.5	0.0 -	0.0	2.7
KWS333	---	---	116.1	57.6	111 -	40	0.3	1.0	0.0	5.0 +
AgriMAXX 502	---	---	115.9	57.7	111 -	42	0.0	3.3	0.0	3.3
12VTK4-118	---	---	115.9	59.6 +	111 -	42	0.3	1.0	0.3	2.0
Featherstone 31	89.8	99.1	115.7	57.6	116 +	39	0.0	1.0	0.0	2.0
#Bullet	87.5 -	96.8	115.7	57.5	117 +	42 +	0.0	2.3	0.3	2.7
19-11	---	---	115.6	56.8 -	117 +	40	0.0	1.8	0.2	2.3
USG 3458	93.9	103.0	115.6	57.8	113	39	0.3	3.3	0.5	3.3
MAS #140	---	---	115.5	58.1	116 +	42	0.3	2.3	0.7	3.3
16VDH-SRW04-028	---	---	115.5	60.1 +	110 -	41	0.5	0.0 -	0.0	3.0
9070	---	---	115.4	58.2	111 -	41	0.0	3.3	0.0	2.7
USG 3118	88.5	100.0	115.3	59.5 +	105 -	38 -	0.5	0.3	0.0	3.3
Hilliard	90.8	101.0	115.3	58.2	112	43 +	0.0	0.3	0.0	3.0

Table 20. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern VA AREC in Warsaw, VA, 2020 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)	Powdery Mildew (0-9)	Septoria (0-9)
AgriMAXX 473	87.0 -	94.0 -	115.2	57.5	116 +	43 +	0.0	0.3	0.2	2.3
DH13SRW022-23	---	104.2 +	115.1	57.8	113	38 -	0.3	1.7	0.0	4.7 +
AgriMAXX 495	91.4	101.0	115.0	58.3	114 +	41	0.0	1.7	0.0	3.0
MBX 176	---	---	115.0	56.4 -	115 +	40	0.0	5.7 +	0.0	3.3
NC15-21835	---	---	114.9	59.4 +	115 +	44 +	0.5	0.3	0.0	3.0
EXP 2002	---	---	114.9	59.2 +	107 -	40	0.5	2.7	1.0	4.0
MAS #130	---	---	114.7	57.8	109 -	40	0.0	6.7 +	0.3	4.0
CROPLAN CP8081	---	---	114.6	58.4	113	41	0.0	0.7	1.3	2.7
TX15D9579	---	98.7	114.5	58.3	108 -	41	0.5	0.2 -	0.0	2.7
MBX 246	---	---	114.5	58.4	114 +	43 +	0.0	3.0	0.2	2.7
SY Viper	93.2	103.6	114.5	59.5 +	108 -	42	0.8	3.7 +	0.0	3.0
AgriMAXX 505	---	---	114.1	59.2 +	115 +	42	0.0	5.0 +	0.0	4.3
MBX 17-M-245	93.9	102.3	114.1	57.4 -	112	39	0.5	2.7	0.5	2.3
WX20731	---	---	114.0	57.5	117 +	40	0.0	1.8	0.0	2.0
Laverne	91.5	100.7	113.9	57.0 -	106 -	35 -	0.0	0.3	1.7 +	4.3
13VTK429-3	90.2	98.0	113.8	59.0 +	115 +	40	0.0	0.0 -	0.0	2.3
VA14HRW-25	---	---	113.8	59.0 +	106 -	42 +	1.3 +	0.5	0.5	4.7 +
SH 7200	85.2 -	94.5 -	113.6	59.2 +	107 -	41	2.3 +	0.0 -	0.3	2.3
EXP 2003	---	---	113.5	56.1 -	115 +	40	0.0	5.7 +	0.0	3.0
SY 007	---	97.5	113.3	58.4	112	42 +	0.3	2.7	0.0	3.3
MBX 223	---	---	112.9	58.2	113	40	0.3	5.0 +	0.2	3.7
LW2958	---	98.8	112.8	57.8	114 +	42 +	0.0	3.0	0.3	3.3
USG 3230	---	---	112.8	57.2 -	113	40	0.0	3.0	1.7 +	3.7
MAS #316	90.4	96.7	112.7	57.6	118 +	42	0.0	3.7 +	0.8	3.0
MAS #133	---	---	112.7	55.6 -	116 +	41	0.3	4.0 +	0.3	3.0
USG 3221	---	---	112.6	58.6	108 -	40	0.0	3.7 +	0.3	3.7
SH 4400	86.3 -	97.1	112.5	58.3	117 +	43 +	0.3	2.3	1.5 +	3.7
SY Richie	---	103.2	112.5	57.5	107 -	40	0.0	0.7	0.0	2.3
Berkeley	89.7	97.4	112.4	57.3 -	106 -	38 -	0.3	1.3	0.0	4.3

Table 20. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern VA AREC in Warsaw, VA, 2020 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)	Powdery Mildew (0-9)	Septoria (0-9)
AgriMAXX 492	---	---	112.4	59.4 +	106 -	38 -	0.0	0.3	0.0	6.7 +
LW2068	---	---	112.3	55.8 -	116 +	40	0.0	5.3 +	0.0	3.0
KWS242	---	---	111.5	57.6	110 -	40	0.0	5.0 +	0.3	3.3
9772	91.5	98.1	111.4	55.8 -	114 +	43 +	0.3	0.8	0.3	3.3
MAS #86	91.5	98.8	111.3	56.3 -	115 +	43 +	0.3	2.3	0.2	3.0
USG 3536	---	93.1 -	111.3	58.1	116 +	41	0.5	0.7	0.0	3.3
PGX 18-9	---	---	111.0	55.7 -	115 +	40	0.0	7.3 +	0.0	3.3
MBX 969	---	96.3	111.0	56.1 -	116 +	40	0.0	2.7	1.3	2.7
9002	---	---	110.8	57.3 -	115 +	43 +	0.0	2.3	1.2	2.7
USG 3329	96.1 +	101.8	110.8	57.7	115 +	41	0.0	5.3 +	0.5	4.0
MAS #136	---	---	110.7	57.1 -	118 +	40	0.0	4.3 +	0.0	2.7
FLLA10033C-6	---	---	110.6	57.4 -	114 +	45 +	0.0	0.0 -	0.0	4.0
Liberty 5658	91.4	99.8	110.5	58.7	112	41	0.0	0.5	0.2	5.3 +
#Blaze	91.7	99.6	110.4	57.9	115 +	41	0.3	5.3 +	1.0	3.7
SY 547	86.0 -	93.4 -	110.2	57.7	114	45 +	0.5	1.3	0.0	3.0
TX15D9597	---	94.5 -	110.1	59.5 +	108 -	41	0.0	0.7	0.0	3.7
15VDH-FHB-MAS25-08	---	98.5	110.0	58.4	104 -	39 -	0.5	0.0 -	0.0	3.7
FL14078LDH-28	---	---	109.9	60.0 +	111 -	43 +	2.3 +	1.7	0.2	5.0 +
9941	90.3	96.9	109.7	56.2 -	115 +	40	0.0	5.0 +	1.7 +	3.0
AgriMAXX 415	90.3	96.4	109.6	59.1 +	113	41	0.5	3.0	2.3 +	3.0
NC15-21834	---	92.3 -	109.6	59.4 +	116 +	45 +	1.5 +	0.0 -	0.0	3.0
SY 576	---	93.5 -	109.5	56.7 -	121 +	43 +	0.0	0.8	2.0 +	3.7
AgriMAXX 496	---	96.6	109.1	56.5 -	116 +	39 -	0.0	3.2	1.7 +	3.3
MAS #35	---	90.8 -	108.8	57.1 -	117 +	42	1.0	4.3 +	1.0	2.7
Pioneer 26R10	92.3	99.2	108.8	57.9	115 +	41	0.0	4.3 +	0.2	4.3
TX15D9253	---	95.4	108.4	56.8 -	107 -	40	2.3 +	0.3	0.3	4.7 +
GA11656-17E11	---	---	108.3	60.5 +	114 +	44 +	0.3	0.3	0.0	2.7
PGX 18-11	---	---	108.0	57.3 -	105 -	38 -	0.5	0.3	0.2	3.3
15VDH-FHB-MAS34-18	---	---	107.7	60.0 +	109 -	41	0.0	0.0 -	0.0	1.7 -

Table 20. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern VA AREC in Warsaw, VA, 2020 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)	Powdery Mildew (0-9)	Septoria (0-9)
USG 3316	92.6	100.0	107.3	57.6	117 +	40	0.0	6.7 +	4.7 +	4.0
15VDH-FHB-MAS22-15	---	98.2	106.7 -	59.2 +	104 -	38 -	1.0	0.0 -	0.0	3.0
15VDH-FHB-MAS33-30	---	95.9	106.6 -	59.7 +	104 -	39	0.0	0.3	0.0	5.7 +
MAS #128	---	---	106.3 -	56.6 -	121 +	39	0.0	4.3 +	0.3	3.7
16VDH-SRW06-131	---	---	106.2 -	59.3 +	107 -	39	0.8	0.7	0.0	3.3
PGX 18-8	---	101.9	105.9 -	57.7	115 +	38 -	0.0	3.0	0.0	2.7
NC11546-14	---	---	104.9 -	59.9 +	111	42	1.0	0.2 -	0.0	4.3
MAS #106	---	89.8 -	103.4 -	57.8	106 -	39 -	0.8	1.7	1.5 +	4.3
FL15105-LDH110	---	---	103.4 -	58.8 +	106 -	39 -	0.0	0.2 -	0.0	2.7
FL15105-LDH145	---	---	100.9 -	59.1 +	106 -	40	0.0	0.2 -	0.0	3.3
MAS #67	---	88.2 -	100.2 -	55.7 -	113	39 -	0.0	3.3	0.2	3.3
PGX 18-2	---	90.2 -	97.9 -	59.0 +	112	38 -	0.0	0.3	0.0	4.3
Massey	71.6 -	79.5 -	86.9 -	58.5	113	46 +	2.8 +	8.3 +	0.0	3.0
Average	91.1	99.3	114.5	58.1	112	41	0.3	1.8	0.4	3.2
LSD (O.05)	3.4	4.4	7.3	0.7	1	2	0.7	1.6	1.0	1.2
C.V.	4.7	4.5	4.6	0.9	1	3	---	---	---	---

Released cultivars are shown in bold print.

Varieties are ordered by descending one-year 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 21. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern Shore AREC, Painter, VA, 2020 harvest.

Line	3-year Av. Yield (Bu/a)		2-year Av. Yield (Bu/a)		Grain Yield (Bu/a)		Test Weight (Lb/bu)		Leaf Rust (0-9)		Powdery Mildew (0-9)	
USG 3790	---		95.5	+	113.7	+	58.0		0.0		0.8	
15VDH-FHB-MAS25-15	---		---		110.9	+	59.8	+	0.0		4.0	+
WX20731	---		---		110.4	+	57.0		0.0		2.5	
MAS1407-056-6-3	---		---		108.4	+	59.2	+	0.0		3.5	+
PGX 18-8	---		98.0	+	107.4	+	58.3		0.0		0.3	
MAS #143	---		---		107.1	+	57.5		0.0		1.5	
LCS 11719	89.1	+	89.7	+	102.8	+	57.6		0.0		0.3	
SY 547	84.7		84.6		102.2	+	57.6		0.0		0.3	
19-10	---		---		102.1	+	55.6	-	0.0		0.0	
MBX 127	---		---		101.8	+	57.7		1.5		1.3	
Featherstone 31	83.1		88.3		101.3	+	59.0		0.0		1.0	
MBX 246	---		---		100.8		57.5		0.0		2.0	
19-11	---		---		100.6		56.9		0.0		0.3	
AgriMAXX 502	---		---		100.6		57.7		0.0		0.0	
KWS333	---		---		100.4		58.5		0.0		2.0	
L11919	---		---		100.0		58.6		0.0		1.0	
LWX20C	---		---		99.9		57.5		0.0		2.0	
PGX 18-7	---		91.3	+	98.6		57.0		0.0		1.8	
13VTK429-3	90.3	+	88.5		98.6		58.7		0.0		0.5	
DH15SRW65-53	---		---		98.0		58.9		0.0		2.0	
14VDH-SRW14-150	---		---		97.9		58.3		0.0		1.0	
LW2848	---		86.2		97.9		57.5		0.0		1.0	
CROPLAN CP9606	85.3		85.8		97.2		56.9		0.0		3.5	+
LW2068	---		---		96.8		55.9	-	2.5	+	0.8	
USG 3536	---		78.1		96.3		57.3		0.0		0.5	
MAS #140	---		---		96.2		58.0		0.0		4.0	+
16VDH-SRW03-023	---		---		96.1		59.0		0.0		2.0	
19-17	---		---		96.1		57.6		0.0		0.0	
Pioneer 26R59	87.7	+	92.5	+	96.0		58.4		0.5		2.3	
SY 007	---		85.3		96.0		58.3		0.0		1.5	
AgriMAXX 495	85.3		85.2		95.5		57.7		0.0		3.0	
Shirley	86.5		84.3		95.5		56.7		0.0		0.0	
USG 3118	85.9		85.2		95.3		60.1	+	0.0		2.0	
MAS #136	---		---		95.2		56.9		0.0		0.3	
15VDH-FHB-MAS38-01	---		---		95.1		55.9	-	0.0		0.5	
16VDH-SRW07-067	---		---		94.9		57.9		0.0		0.0	
KWS242	---		---		94.8		57.1		5.0	+	1.8	
9070	---		---		94.6		57.1		0.5		0.3	
19-15	---		---		94.2		57.6		0.0		2.5	
MAS #128	---		---		93.6		57.0		0.0		3.5	+
15VDH-FHB-MAS33-13	---		---		93.5		57.3		0.0		6.0	+

Table 21. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern Shore AREC, Painter, VA, 2020 harvest.

Line	3-year Av. Yield (Bu/a)		2-year Av. Yield (Bu/a)		Grain Yield (Bu/a)	Test Weight (Lb/bu)		Leaf Rust (0-9)		Powdery Mildew (0-9)	
MAS #133	---		---		93.4	55.5	-	0.5		1.3	
VA17W-75	---		84.9		93.1	58.5		0.0		0.0	
MAS #86	86.2		84.7		93.0	56.8		0.0		0.5	
USG 3230	---		---		93.0	57.4		0.0		0.3	
MAS #35	---		87.3		92.9	56.9		3.0	+	2.5	
Hilliard	86.3		87.0		92.6	57.9		0.0		0.3	
16VDH-SRW09-025	---		---		92.3	57.8		0.0		1.0	
9941	83.7		82.3		92.1	55.5	-	0.0		2.0	
15VDH-FHB-MAS34-18	---		---		92.1	59.8	+	0.0		0.0	
LW2958	---		79.8		92.1	57.7		0.0		0.3	
16VDH-SRW04-028	---		---		92.0	59.2	+	0.0		0.8	
VA15W-86	---		87.9		91.8	56.9		0.0		0.8	
VA17W-74	---		81.5		91.7	59.0		0.0		0.0	
DH13SRW022-23	---		85.6		91.4	57.5		0.0		0.0	
MBX 17-M-245	84.8		85.8		91.4	57.8		0.0		1.0	
FL14167LDH-158	---		---		91.3	57.5		0.0		1.0	
USG 3221	---		---		91.2	58.5		2.0	+	1.0	
12VTK4-118	---		---		91.2	58.9		0.0		3.0	
15VTK-12-21	---		---		91.0	58.9		0.0		0.3	
AgriMAXX 415	83.5		85.9		90.7	58.9		0.0		2.8	
MBX 223	---		---		90.4	57.8		0.5		0.8	
USG 3458	81.3		81.6		90.4	56.1	-	0.0		2.0	
13VTK59-55	---		83.1		90.3	59.0		0.0		1.3	
SH 7510	79.6		80.5		90.1	57.7		0.0		2.5	
SY Richie	---		87.6		90.1	57.9		0.0		1.5	
SH 4400	72.3	-	75.0		90.0	57.0		0.0		3.0	
#Blaze	86.9		86.3		89.8	57.8		1.0		0.8	
WX20737	---		---		89.8	59.1	+	0.0		0.3	
Pioneer 26R10	83.3		88.2		89.8	57.9		0.0		2.0	
MBX 969	---		83.0		89.6	56.8		0.0		2.0	
16VDH-SRW06-131	---		---		89.6	59.4	+	0.5		1.8	
9772	80.2		81.0		89.5	56.3	-	0.0		2.0	
AgriMAXX 503	---		---		89.5	58.1		0.0		3.0	
13VTK59-148	---		---		88.9	58.9		0.0		2.0	
Featherstone 125	78.1		79.6		88.9	60.6	+	0.0		5.0	+
MAS #316	77.8		75.5		88.8	55.6	-	0.0		3.5	+
EXP 2003	---		---		88.4	54.5	-	3.0	+	1.3	
#Bullet	74.3	-	73.7	-	87.7	56.4	-	0.0		0.5	
9932	---		78.6		87.5	57.3		0.0		3.0	
AgriMAXX 496	---		84.4		87.3	56.1	-	0.0		4.5	+
Laverne	79.8		79.3		87.2	57.1		0.0		0.5	

Table 21. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern Shore AREC, Painter, VA, 2020 harvest.

Line	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Leaf Rust (0-9)	Powdery Mildew (0-9)
Pioneer 26R45	78.4	79.4	87.2	56.9	0.0	0.5
VA16W-202	84.9	81.2	86.8	57.0	0.0	0.5
SY 576	---	76.2	86.5	55.2 -	0.0	4.0 +
USG 3316	83.7	83.4	86.5	56.9	1.5	6.5 +
9002	---	---	86.5	56.9	0.0	5.0 +
PGX 19-3	---	---	86.4	57.9	0.0	1.5
GA10268-17LE16	---	---	86.3	57.8	0.0	0.5
CROPLAN CP8081	---	---	86.3	58.0	0.0	5.0 +
AgriMAXX 473	77.8	77.1	85.9	56.4	0.5	0.0
MAS #130	---	---	85.6	56.5	3.0 +	0.8
WX19713	---	---	85.1	59.2 +	3.5 +	1.5
MBX 176	---	---	85.0	56.3 -	2.5 +	0.5
PGX 18-9	---	---	84.4	54.2 -	3.5 +	0.5
16VDH-SRW05-205	---	---	84.2	58.6	0.0	0.0
EXP 2002	---	---	83.7	58.7	0.0	0.5
FLLA10033C-6	---	---	83.5	56.3 -	0.0	3.0
MAS #67	---	78.0	83.4	56.7	0.5	4.5 +
15VDH-FHB-MAS22-15	---	79.9	83.3	58.8	0.0	1.0
USG 3329	82.5	81.2	83.3	56.5	2.0 +	1.0
19-12	---	---	82.9	53.6 -	0.0	0.5
VA17W-176	---	79.8	82.8	57.1	0.0	4.0 +
NC15-21834	---	63.9 -	81.8	59.0	0.0	0.3
SY Viper	86.7	84.0	81.7	59.5 +	1.0	0.3
NC15-21835	---	---	81.6	59.8 +	0.0	0.3
AgriMAXX 505	---	---	81.3	58.4	0.0	2.0
TX15D9597	---	77.6	81.0	57.8	0.0	3.5 +
TX15D9579	---	74.2	80.9	56.8	0.0	0.3
15VDH-SRW02-075	---	78.4	80.6	57.8	0.0	2.5
TX15D9253	---	73.7 -	79.5	56.7	0.0	1.0
SH 7200	77.4	72.5 -	79.3	57.8	0.0	1.5
VA14HRW-25	---	---	78.9	58.7	0.0	2.0
USG 3895	76.8	74.8	78.2	56.4 -	0.0	5.5 +
15VDH-FHB-MAS33-30	---	80.1	78.0 -	59.3 +	0.0	0.3
Liberty 5658	77.9	73.7 -	77.9 -	58.3	0.0	2.0
#Berkeley	81.3	78.1	77.5 -	56.8	0.0	0.8
FL15105-LDH110	---	---	77.5 -	59.2 +	0.0	0.0
GA11656-17E11	---	---	77.5 -	60.3 +	0.0	1.8
PGX 18-2	---	76.3	76.9 -	57.5	0.0	0.3
FL14078LDH-28	---	---	76.2 -	60.6 +	0.0	0.5
NC11546-14	---	---	75.8 -	59.0	0.0	0.0
PGX 18-11	---	---	73.5 -	57.9	0.0	0.5

Table 21. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern Shore AREC, Painter, VA, 2020 harvest.

Line	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Leaf Rust (0-9)	Powdery Mildew (0-9)
GA10407-17E8	---	---	72.3 -	59.1 +	0.0	4.5 +
AgriMAXX 492	---	---	72.3 -	57.9	0.0	0.0
FL15105-LDH145	---	---	71.1 -	58.2	0.0	1.5
MAS #106	---	67.9 -	68.4 -	58.9	0.0	5.5 +
15VDH-FHB-MAS25-08	---	76.2	66.7 -	57.7	0.0	2.0
Massey	61.6 -	59.9 -	59.1 -	57.7	6.5 +	0.5
Average	81.9	81.5	89.6	57.7	0.3	1.6
LSD (O.05)	5.4	7.7	11.6	1.3	1.4	1.9
C.V.	8.1	9.2	9.1	1.7	---	---

Released cultivars are shown in bold print.

Varieties are ordered by descending one-year 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 22. Summary of performance of entries in the Virginia Tech Wheat Test, Southern Piedmont AREC, Blackstone, VA, 2020 harvest.

Line	3-year Av. Yield (Bu/a)		2-year Av. Yield (Bu/a)		Grain Yield (Bu/a)		Test Weight (Lb/bu)		Leaf Rust (0-9)	
GA10268-17LE16	---		---		113.0	+	60.2		0.0	
MAS #128	---		---		112.8	+	59.7		2.5	
LCS 11719	80.4	+	84.5		111.3	+	60.4		2.0	
19-17	---		---		109.8		59.2		0.3	
GA11656-17E11	---		---		109.4		61.4		0.8	
VA17W-75	---		82.7		109.1		62.3	+	0.0	
VA17W-176	---		86.7	+	109.1		60.0		0.0	
MBX 127	---		---		108.5		59.6		1.5	
Pioneer 26R45	76.2		82.6		108.4		59.4		1.5	
12VTK4-118	---		---		108.2		61.4		1.5	
L11919	---		---		107.9		61.7		0.5	
13VTK59-55	---		83.8		107.8		61.1		0.0	
MAS1407-056-6-3	---		---		107.6		60.9		1.5	
KWS242	---		---		107.4		59.7		5.5	+
GA10407-17E8	---		---		107.1		61.2		0.0	
15VDH-FHB-MAS22-15	---		85.0		106.9		61.4		0.0	
USG 3329	75.8		80.4		106.8		59.1	-	2.0	
16VDH-SRW03-023	---		---		106.5		59.7		0.0	
PGX 19-3	---		---		106.4		60.4		2.5	
LWX20C	---		---		106.3		59.6		2.0	
USG 3790	---		93.0	+	105.9		57.4	-	2.5	
19-11	---		---		105.8		60.0		2.5	
MAS #133	---		---		105.8		57.6	-	2.0	
WX20731	---		---		105.5		59.7		1.0	
9070	---		---		105.2		60.0		1.5	
USG 3458	80.2	+	83.3		105.0		59.6		2.5	
MAS #140	---		---		105.0		60.3		3.0	
19-12	---		---		104.4		58.3	-	2.0	
EXP 2003	---		---		104.2		59.6		4.0	+
DH15SRW65-53	---		---		104.1		60.7		0.3	
Liberty 5658	71.6		76.8		103.9		61.3		1.5	
MAS #136	---		---		103.6		59.0	-	5.5	+
TX15D9579	---		86.1	+	103.6		60.9		0.3	
15VDH-FHB-MAS34-18	---		---		103.4		62.9	+	0.8	
14VDH-SRW14-150	---		---		103.4		60.1		0.5	
9002	---		---		103.3		59.4		3.0	
AgriMAXX 502	---		---		103.2		59.8		1.0	
13VTK429-3	75.3		77.9		103.1		61.3		0.5	
15VDH-FHB-MAS33-13	---		---		103.1		61.1		0.0	
MAS #86	79.7	+	85.2	+	102.7		59.6		3.5	+
MAS #35	---		78.8		102.7		60.0		3.5	+

Table 22. Summary of performance of entries in the Virginia Tech Wheat Test, Southern Piedmont AREC, Blackstone, VA, 2020 harvest.

Line	3-year Av. Yield (Bu/a)		2-year Av. Yield (Bu/a)		Grain Yield (Bu/a)	Test Weight (Lb/bu)		Leaf Rust (0-9)	
Hilliard	76.7		84.1		102.2	60.6		0.3	
VA16W-202	78.3		81.2		102.2	59.4		0.5	
MAS #130	---		---		102.1	59.8		4.5	+
Pioneer 26R59	74.9		79.6		102.1	60.3		3.0	
USG 3221	---		---		102.0	61.3		2.5	
SH 4400	74.2		82.1		101.6	61.0		2.5	
LW2068	---		---		101.5	59.3		4.5	+
MBX 223	---		---		101.2	59.4		2.0	
MAS #316	74.9		79.0		101.1	59.7		2.5	
9772	75.1		82.3		101.1	57.8	-	1.0	
VA15W-86	---		77.4		101.0	60.7		0.3	
15VDH-SRW02-075	---		82.4		100.9	61.3		0.0	
PGX 18-8	---		86.7	+	100.8	60.3		2.0	
VA17W-74	---		81.1		100.6	62.3	+	0.0	
15VDH-FHB-MAS38-01	---		---		100.3	58.8	-	0.0	
16VDH-SRW09-025	---		---		100.1	60.7		1.0	
VA14HRW-25	---		---		100.0	61.5		1.0	
PGX 18-7	---		80.0		100.0	60.9		1.5	
19-10	---		---		99.9	59.1	-	1.5	
CROPLAN CP8081	---		---		99.9	59.9		1.5	
LW2848	---		73.9		99.7	60.3		1.5	
WX19713	---		---		99.7	61.5		4.0	+
SY 547	75.6		79.4		99.6	60.7		1.0	
16VDH-SRW07-067	---		---		99.5	60.1		0.5	
Featherstone 31	71.9		74.6		99.4	61.2		1.3	
DH13SRW022-23	---		76.1		99.0	60.9		0.5	
AgriMAXX 503	---		---		98.9	60.9		3.5	+
TX15D9597	---		73.3		98.8	62.7	+	0.5	
13VTK59-148	---		---		98.8	62.2	+	0.3	
SY Viper	80.4	+	83.0		98.6	61.8	+	2.0	
Featherstone 125	75.1		77.5		98.5	62.2	+	0.3	
AgriMAXX 473	73.8		76.6		98.1	60.1		0.5	
AgriMAXX 492	---		---		98.1	61.3		0.8	
Shirley	72.4		78.1		98.1	59.5		0.0	
19-15	---		---		97.7	61.0		1.0	
16VDH-SRW06-131	---		---		97.7	62.0	+	1.0	
15VDH-FHB-MAS25-15	---		---		97.5	61.3		0.0	
PGX 18-2	---		83.5		97.5	60.7		0.3	
SH 7200	72.9		75.2		97.2	61.5		0.5	
TX15D9253	---		76.5		97.1	57.8	-	0.3	
MAS #143	---		---		97.0	60.1		1.0	

Table 22. Summary of performance of entries in the Virginia Tech Wheat Test, Southern Piedmont AREC, Blackstone, VA, 2020 harvest.

Line	3-year Av. Yield (Bu/a)		2-year Av. Yield (Bu/a)		Grain Yield (Bu/a)		Test Weight (Lb/bu)		Leaf Rust (0-9)	
USG 3895	76.0		79.6		97.0		58.1	-	1.0	
USG 3316	75.1		79.7		97.0		59.5		2.5	
USG 3230	---		---		96.9		59.7		1.0	
MBX 17-M-245	69.9		75.6		96.9		59.6		1.5	
MAS #67	---		81.6		96.8		59.1	-	1.5	
WX20737	---		---		96.7		62.2	+	2.0	
SY 576	---		74.7		96.3		59.5		0.8	
EXP 2002	---		---		96.2		61.2		1.5	
Laverne	73.9		77.1		96.1		61.0		0.8	
LW2958	---		75.5		95.9		61.4		2.0	
NC15-21835	---		---		95.9		62.0	+	0.3	
USG 3536	---		75.3		95.8		60.3		1.0	
USG 3118	72.7		74.4		95.7		61.7		0.0	
15VTK-12-21	---		---		95.7		61.6		1.5	
MBX 246	---		---		95.4		61.6		2.0	
NC15-21834	---		76.3		95.3		62.1	+	1.0	
MBX 176	---		---		95.3		59.0	-	5.0	+
SY 007	---		76.2		95.2		60.5		1.0	
AgriMAXX 505	---		---		95.1		61.1		5.0	+
FL14167LDH-158	---		---		95.0		60.1		0.5	
CROPLAN CP9606	69.8		71.9	-	94.7		59.6		2.5	
#Bullet	69.2		74.1		94.6		60.4		0.8	
SH 7510	72.7		76.4		94.4		60.9		0.3	
AgriMAXX 495	68.4	-	73.2		94.3		61.3		2.0	
AgriMAXX 496	---		77.2		94.1		60.1		3.0	
Pioneer 26R10	74.0		77.6		93.5		60.0		4.0	+
AgriMAXX 415	73.1		79.2		93.3		61.5		2.0	
SY Richie	---		82.5		93.0		60.6		0.5	
#Berkeley	74.4		78.5		92.9		60.8		0.8	
KWS333	---		---		92.8		60.7		1.0	
#Blaze	74.6		75.4		91.5		59.5		4.0	+
15VDH-FHB-MAS25-08	---		78.4		91.2		61.6		0.0	
MBX 969	---		72.1	-	91.1		60.0		2.0	
9941	70.9		75.2		90.5		59.5		2.0	
9932	---		75.7		90.4		61.5		1.5	
PGX 18-11	---		---		90.0		60.8		0.5	
FL14078LDH-28	---		---		89.6		60.6		2.0	
16VDH-SRW04-028	---		---		88.9		62.5	+	0.3	
15VDH-FHB-MAS33-30	---		71.1	-	88.6		62.3	+	1.0	
16VDH-SRW05-205	---		---		87.6	-	60.8		0.3	
PGX 18-9	---		---		87.3	-	58.7	-	6.0	+

Table 22. Summary of performance of entries in the Virginia Tech Wheat Test, Southern Piedmont AREC, Blackstone, VA, 2020 harvest.

Line	3-year Av. Yield (Bu/a)		2-year Av. Yield (Bu/a)		Grain Yield (Bu/a)		Test Weight (Lb/bu)		Leaf Rust (0-9)	
MAS #106	---		68.7	-	87.0	-	60.7		2.5	
NC11546-14	---		---		86.8	-	63.0	+	0.3	
FL15105-LDH110	---		---		86.6	-	61.9	+	0.5	
FLLA10033C-6	---		---		85.2	-	56.0	-	1.3	
Massey	61.3	-	67.6	-	84.0	-	60.7		6.5	+
FL15105-LDH145	---		---		83.5	-	61.9	+	0.0	
Average	74.0		78.6		99.2		60.5		1.5	
LSD (O.05)	4.9		6.5		11.0		1.2		1.9	
C.V.	8.0		8.0		7.7		1.4		---	

Released cultivars are shown in bold print.

Varieties are ordered by descending one-year 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 23. Summary of performance of entries in the Virginia Tech Wheat Test, Northern Piedmont Center, Orange, VA, 2020 harvest.

Line	3-year Av. Yield (Bu/a)		2-year Av. Yield (Bu/a)		Grain Yield (Bu/a)		Test Weight (Lb/bu)		Mature Height (In)		Plant Lodging (0-9)	
SY 576	---		102.5	+	108.5	+	57.9		44		0.0	
USG 3790	---		105.7	+	101.1	+	58.6		40		1.0	
LCS 11719	90.4		97.1	+	98.1	+	58.3		41		2.3	
PGX 18-8	---		105.0	+	97.0	+	58.5		40		0.5	
LWX20C	---		---		97.0	+	58.1		43		0.8	
MAS #143	---		---		96.7	+	57.8		42		0.8	
GA10268-17LE16	---		---		95.6	+	58.3		40		7.0	+
#Bullet	95.6	+	100.4	+	95.3	+	56.7		41		2.0	
MBX 127	---		---		94.1	+	57.8		43		0.0	
MAS #316	87.5		97.6	+	94.0	+	57.3		43		0.0	
WX20731	---		---		93.8	+	58.3		42		1.8	
USG 3329	92.9	+	101.3	+	93.8	+	57.9		41		2.5	+
LW2848	---		97.7	+	93.7	+	57.4		43		0.3	
#Blaze	87.5		99.6	+	93.4	+	57.8		42		2.3	
MAS #136	---		---		93.2	+	58.0		42		5.5	+
WX20737	---		---		93.0	+	58.4		41		0.0	
GA10407-17E8	---		---		90.7	+	58.4		41		2.8	+
LW2068	---		---		90.1	+	56.8		40		0.0	
MBX 176	---		---		89.9	+	56.4		41		1.0	
EXP 2003	---		---		87.8	+	56.8		39		0.0	
LW2958	---		99.8	+	87.8	+	57.7		44		0.0	
MBX 223	---		---		87.4	+	57.5		43		2.8	+
AgriMAXX 473	89.0		98.7	+	87.3	+	57.5		43		0.0	
PGX 18-9	---		---		87.1	+	56.6		40		0.0	
GA11656-17E11	---		---		86.9	+	59.9	+	42		4.0	+
FL14078LDH-28	---		---		86.8	+	59.7	+	45	+	1.5	
MAS1407-056-6-3	---		---		85.9	+	59.5	+	44		0.0	
SY Viper	89.3		99.2	+	85.8	+	58.7		43		1.0	
Featherstone 125	90.2		101.5	+	85.7	+	60.6	+	42		1.0	
FLLA10033C-6	---		---		85.7	+	57.5		44		0.0	
AgriMAXX 495	88.0		99.7	+	85.2	+	57.8		41		0.0	
SH 4400	81.7		85.1		85.1	+	59.2	+	45	+	0.0	
AgriMAXX 502	---		---		84.8	+	57.6		42		0.0	
USG 3316	89.6		95.6		83.5	+	58.3		43		0.0	
MBX 246	---		---		82.7	+	57.5		44		0.5	
SY 547	85.9		90.8		82.7	+	56.8		46	+	0.8	
PGX 18-7	---		94.0		82.7	+	58.4		43		0.0	
MAS #128	---		---		82.0		58.2		37	-	1.5	
15VDH-FHB-MAS34-18	---		---		81.1		59.6	+	39	-	1.0	
13VTK429-3	87.9		96.7		80.0		57.2		43		0.0	
19-11	---		---		78.3		58.0		43		0.0	

Table 23. Summary of performance of entries in the Virginia Tech Wheat Test, Northern Piedmont Center, Orange, VA, 2020 harvest.

Line	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)		Mature Height (In)		Plant Lodging (0-9)	
Pioneer 26R45	82.2	87.8	78.0	57.1		41		0.0	
15VDH-FHB-MAS33-13	---	---	77.8	59.8	+	39		0.8	
DH15SRW65-53	---	---	77.3	59.3	+	40		1.0	
CROPLAN CP9606	86.1	93.8	76.8	57.6		40		0.0	
WX19713	---	---	76.5	58.3		43		0.0	
NC15-21835	---	---	76.4	59.4	+	45	+	1.8	
9070	---	---	76.3	57.5		43		0.0	
FL14167LDH-158	---	---	75.9	58.0		42		0.0	
19-10	---	---	75.8	55.6	-	39		0.0	
9932	---	83.9	75.4	57.9		43		0.5	
MAS #140	---	---	75.0	57.2		45	+	0.0	
USG 3536	---	87.3	74.8	57.3		42		2.3	
9772	84.9	90.7	74.1	53.9	-	43		0.5	
15VTK-12-21	---	---	71.2	59.0	+	43		0.0	
NC15-21834	---	80.1	70.1	58.9	+	44		4.5	+
AgriMAXX 505	---	---	70.0	58.5		42		0.8	
PGX 19-3	---	---	69.9	56.9		44		0.0	
16VDH-SRW04-028	---	---	69.6	59.2	+	41		0.0	
15VDH-FHB-MAS25-15	---	---	69.1	59.7	+	40		0.0	
MAS #35	---	91.3	68.1	57.3		42		0.8	
MBX 969	---	84.7	67.8	55.8	-	41		0.8	
AgriMAXX 496	---	90.2	67.5	55.3	-	40		0.0	
19-15	---	---	67.0	58.7		40		0.0	
Liberty 5658	82.2	88.7	66.7	57.9		43		0.3	
12VTK4-118	---	---	66.7	58.5		43		0.0	
16VDH-SRW05-205	---	---	66.5	57.3		40		0.0	
VA17W-176	---	87.3	66.4	57.5		40		1.0	
9941	83.6	87.7	66.1	55.4	-	42		0.8	
SH 7510	85.2	92.9	65.7	58.0		41		0.0	
MAS #86	82.4	86.5	65.2	55.6	-	45	+	0.0	
14VDH-SRW14-150	---	---	64.6	58.8	+	41		0.0	
MAS #133	---	---	64.6	56.2	-	43		0.0	
16VDH-SRW07-067	---	---	64.5	58.6		38	-	0.0	
15VDH-FHB-MAS22-15	---	83.2	64.4	58.6		36	-	0.0	
15VDH-SRW02-075	---	82.1	63.2	57.2		44		0.3	
13VTK59-55	---	80.6	63.1	59.2	+	40		0.0	
USG 3230	---	---	62.4	56.2	-	42		0.0	
SY Richie	---	81.1	62.3	56.3	-	39		0.3	
VA17W-74	---	85.8	62.1	58.8	+	42		0.0	
AgriMAXX 503	---	---	61.9	55.9	-	43		0.0	
Pioneer 26R59	82.2	84.3	60.0	57.7		39		0.0	

Table 23. Summary of performance of entries in the Virginia Tech Wheat Test, Northern Piedmont Center, Orange, VA, 2020 harvest.

Line	3-year Av. Yield (Bu/a)	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)	Mature Height (In)	Plant Lodging (0-9)
SY 007	---	87.8	59.4	56.7	44	0.0
#Berkeley	85.5	90.0	58.1	56.8	41	0.0
AgriMAXX 415	81.8	78.9	57.9	58.4	43	0.3
Pioneer 26R10	78.8	82.9	57.5	57.0	44	0.0
Hilliard	74.7 -	81.0	57.3	57.4	45 +	0.0
KWS242	---	---	56.6	58.7	43	0.0
PGX 18-11	---	---	56.1	57.1	39	0.3
15VDH-FHB-MAS25-08	---	81.6	55.9	58.0	39	0.0
MBX 17-M-245	86.8	87.7	55.4	54.8 -	41	0.0
15VDH-FHB-MAS33-30	---	83.9	55.1	60.0 +	40	0.0
USG 3118	73.6 -	85.4	55.0	58.7	37 -	0.5
16VDH-SRW09-025	---	---	54.1	57.8	44	0.0
USG 3895	78.5	79.0	53.9	57.1	42	0.0
SH 7200	74.2 -	83.6	51.6	57.5	42	1.3
FL15105-LDH145	---	---	51.2	58.6	43	0.0
VA17W-75	---	82.0	50.1 -	59.0 +	43	0.0
VA16W-202	78.4	83.0	49.9 -	56.5	37 -	0.3
VA14HRW-25	---	---	49.7 -	56.3 -	44	2.3
13VTK59-148	---	---	49.1 -	58.4	43	0.3
TX15D9597	---	82.5	49.1 -	58.0	43	0.0
19-12	---	---	48.7 -	57.3	43	0.0
USG 3458	76.1	80.4	47.2 -	56.2 -	41	0.0
CROPLAN CP8081	---	---	46.6 -	55.9 -	40	0.3
9002	---	---	45.3 -	56.9	43	0.0
TX15D9579	---	77.4 -	45.3 -	58.1	44	0.0
FL15105-LDH110	---	---	44.5 -	59.2 +	43	0.0
MAS #130	---	---	43.7 -	58.5	42	0.0
Laverne	77.4	77.7	43.6 -	56.9	35 -	0.0
MAS #106	---	72.8 -	43.4 -	56.3 -	40	0.8
VA15W-86	---	70.9 -	43.3 -	55.9 -	41	1.5
Shirley	86.1	89.8	41.7 -	56.0 -	40	0.3
16VDH-SRW03-023	---	---	39.3 -	57.3	43	0.0
L11919	---	---	39.3 -	56.4	41	0.0
USG 3221	---	---	39.2 -	56.1 -	42	0.0
PGX 18-2	---	79.3	38.5 -	57.7	43	0.0
NC11546-14	---	---	38.2 -	58.2	42	0.8
AgriMAXX 492	---	---	37.8 -	56.7	41	1.3
DH13SRW022-23	---	73.4 -	37.0 -	57.1	39	0.5
19-17	---	---	35.5 -	56.2 -	39 -	0.5
16VDH-SRW06-131	---	---	35.0 -	57.3	40	0.0
KWS333	---	---	33.9 -	54.9 -	43	0.3

Table 23. Summary of performance of entries in the Virginia Tech Wheat Test, Northern Piedmont Center, Orange, VA, 2020 harvest.

Line	3-year Av. Yield (Bu/a)		2-year Av. Yield (Bu/a)		Grain Yield (Bu/a)		Test Weight (Lb/bu)		Mature Height (In)		Plant Lodging (0-9)	
TX15D9253	---		79.6		31.5	-	54.4	-	44		0.0	
Featherstone 31	68.6	-	70.7	-	30.7	-	56.7		42		0.0	
EXP 2002	---		---		29.5	-	56.2	-	44		0.0	
15VDH-FHB-MAS38-01	---		---		29.0	-	56.8		37	-	0.0	
MAS #67	---		62.7	-	24.4	-	55.3	-	42		0.0	
Massey	57.6	-	60.0	-	23.9	-	55.9	-	45	+	3.0	+
Average	82.9		87.1		66.9		57.5		42		0.6	
LSD (O.05)	7.6		9.7		15.7		1.2		3		1.7	
C.V.	10.7		10.5		15.3		1.5		5		---	

Released cultivars are shown in bold print.

Varieties are ordered by descending one-year 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: some varieties exhibited severe freeze damage at this location.

Table 24. Summary of performance of entries in the Virginia Tech Wheat Test, Kentland farm, Blacksburg, VA, 2020 harvest.

Line	2-year Av. Yield (Bu/a)		Grain Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Mature Height (In)		Plant Lodging (0-9)	
19-10	---		93.2	+	53.5	-	126	+	34		0.0	
VA17W-75	92.4	+	92.9	+	59.6		123		35		0.0	
L11919	---		92.3	+	56.6		123		33		1.8	+
PGX 19-3	---		92.2	+	56.0		126	+	36		0.0	
VA17W-74	88.9		92.2	+	59.9		123		35		1.3	+
Pioneer 26R45	93.2	+	91.8	+	58.6		124		36		0.0	
LCS 11719	91.6	+	91.7	+	59.6		123		34		0.0	
15VDH-FHB-MAS33-13	---		91.3	+	60.6		124		34		0.3	
AgriMAXX 503	---		91.3	+	54.3	-	125	+	37	+	0.0	
SY Viper	96.1	+	91.2	+	61.3	+	121	-	36	+	0.0	
16VDH-SRW03-023	---		91.1	+	59.1		123		34		0.0	
13VTK429-3	94.5	+	90.9	+	61.2	+	125		36		0.0	
MAS #130	---		90.6	+	57.5		123		34		0.3	
MAS #136	---		89.9	+	57.9		126	+	33		0.0	
SY 547	86.3		89.7	+	58.4		124		36	+	0.0	
MAS #140	---		89.7	+	56.7		126	+	36		0.0	
#Bullet	91.6	+	88.7	+	58.7		125		37	+	0.0	
USG 3316	88.2		88.6	+	59.9		124		34		0.0	
19-11	---		88.2		57.9		125		35		0.8	
9941	94.1	+	87.8		52.4	-	124		34		0.0	
19-15	---		87.5		59.1		122		33		1.3	+
WX19713	---		87.4		60.3		124		35		0.0	
Featherstone 125	93.3	+	87.0		61.5	+	124		36		0.3	
KWS242	---		86.9		59.4		123		34		0.3	
MBX 223	---		86.8		58.5		124		33		0.0	
MAS #35	90.8		86.6		59.6		125		35		0.0	
MBX 969	88.6		86.4		52.8	-	125		34		0.0	
19-17	---		86.2		58.4		123		31	-	1.5	+
#Blaze	88.9		86.1		58.2		124		34		0.0	
DH15SRW65-53	---		85.9		60.1		125	+	31	-	0.0	
USG 3329	92.2	+	85.8		58.5		123		35		0.0	
GA10407-17E8	---		85.7		61.2	+	123		34		0.0	
15VTK-12-21	---		85.5		60.0		124		35		0.0	
VA16W-202	88.4		85.5		55.6		123		30	-	0.3	
TX15D9597	84.8		85.4		59.7		122	-	36		0.0	
USG 3790	89.6		85.4		57.4		125		35		0.0	
MAS #316	88.6		84.8		58.8		126	+	36		0.0	
13VTK59-55	78.7		84.8		58.9		124		33		0.0	
CROPLAN CP8081	---		84.6		59.1		124		36		0.0	
LW2958	88.4		84.5		58.7		126	+	36	+	0.0	
MAS #128	---		84.5		58.1		126	+	34		0.0	

Table 24. Summary of performance of entries in the Virginia Tech Wheat Test, Kentland farm, Blacksburg, VA, 2020 harvest.

Line	2-year Av. Yield (Bu/a)		Grain Yield (Bu/a)	Test Weight (Lb/bu)		Date Headed (Julian)		Mature Height (In)		Plant Lodging (0-9)	
15VDH-FHB-MAS34-18	---		84.1	58.7		123		34		0.0	
EXP 2003	---		84.0	56.8		123		35		0.0	
MAS #143	---		83.9	58.7		125		35		0.0	
PGX 18-8	89.4		83.7	59.7		125	+	33		0.0	
Shirley	86.2		83.7	55.3		124		32	-	0.0	
TX15D9579	80.3		83.7	59.6		123		36	+	0.8	
AgriMAXX 505	---		83.6	58.2		126	+	34		0.0	
Featherstone 31	85.4		83.5	57.5		125		32	-	0.0	
AgriMAXX 502	---		83.4	58.5		122		34		0.0	
MAS #133	---		83.4	57.5		125		36		0.5	
USG 3536	82.3		83.2	57.5		124		36		0.0	
Pioneer 26R59	89.9		82.8	57.9		123		31	-	0.0	
Liberty 5658	84.8		82.8	59.9		123		36		0.0	
PGX 18-7	89.2		82.8	57.6		125		34		0.0	
CROPLAN CP9606	88.5		82.5	57.5		122		34		0.0	
LW2068	---		82.5	56.2		124		34		0.0	
USG 3458	85.9		82.5	58.0		123		34		0.0	
15VDH-FHB-MAS33-30	78.1	-	82.2	61.8	+	120	-	33		0.0	
MBX 127	---		81.9	58.6		124		34		0.0	
MAS1407-056-6-3	---		81.5	60.5		125		35		0.0	
15VDH-FHB-MAS25-15	---		81.5	59.6		122		33		0.0	
AgriMAXX 473	88.2		81.1	59.1		126	+	35		0.0	
MBX 176	---		81.1	56.4		125		35		0.0	
TX15D9253	79.0		81.0	56.4		123		35		2.8	+
SH 7510	86.8		80.8	57.3		125		34		0.5	
14VDH-SRW14-150	---		80.6	57.1		122		35		0.0	
SY Richie	81.9		80.4	58.0		120	-	33		0.0	
19-12	---		80.4	56.1		123		34		0.3	
MBX 17-M-245	88.5		80.0	57.7		122	-	33		0.0	
MBX 246	---		79.9	59.3		126	+	36		0.0	
AgriMAXX 496	86.4		79.9	53.0	-	125		32	-	0.0	
USG 3230	---		79.8	57.5		124		33		0.0	
LW2848	85.8		79.5	58.8		127	+	35		0.0	
FL14167LDH-158	---		79.2	58.8		123		36		0.0	
SY 576	83.7		79.0	58.0		131	+	37	+	0.0	
16VDH-SRW04-028	---		79.0	61.2	+	122	-	35		0.0	
WX20731	---		79.0	58.3		126	+	34		0.0	
9772	83.8		78.9	51.2	-	125		33		0.0	
9070	---		78.5	57.5		123		34		0.0	
USG 3221	---		78.5	57.8		120	-	34		0.0	
WX20737	---		78.1	58.3		122		34		0.0	

Table 24. Summary of performance of entries in the Virginia Tech Wheat Test, Kentland farm, Blacksburg, VA, 2020 harvest.

Line	2-year Av. Yield (Bu/a)		Grain Yield (Bu/a)		Test Weight (Lb/bu)		Date Headed (Julian)		Mature Height (In)		Plant Lodging (0-9)	
LWX20C	---		78.0		58.3		125		35		0.0	
EXP 2002	---		77.9		57.6		120	-	35		0.0	
Laverne	83.3		77.8		58.4		122	-	29	-	0.0	
MAS #86	86.0		77.8		56.7		124		35		0.0	
Hilliard	80.3		77.7		57.0		123		37	+	0.0	
AgriMAXX 495	82.9		77.6		59.1		125		35		0.0	
13VTK59-148	---		77.4		56.7		123		35		0.5	
GA11656-17E11	---		77.4		61.7	+	123		35		0.0	
PGX 18-9	---		77.3		52.2	-	125		34		0.0	
9002	---		77.1		57.8		123		36	+	0.3	
VA17W-176	83.6		76.5		56.9		123		35		0.0	
USG 3118	73.7	-	76.5		60.2		122		31	-	0.8	
16VDH-SRW05-205	---		76.5		56.0		123		32	-	0.0	
DH13SRW022-23	85.1		76.3		60.5		126	+	33		0.0	
FL14078LDH-28	---		76.0		61.7	+	125		38	+	0.0	
16VDH-SRW09-025	---		75.9		58.0		123		36		0.0	
VA15W-86	81.2		75.6		55.5		123		33		0.3	
15VDH-SRW02-075	80.9		75.5		60.1		125		37	+	0.0	
PGX 18-11	---		75.5		58.6		122		34		0.0	
FLLA10033C-6	---		75.4		60.0		126	+	37	+	0.0	
MAS #67	81.0		75.2		53.0	-	123		34		0.0	
9932	83.7		74.9		58.9		125		34		0.0	
AgriMAXX 415	82.3		74.8		56.8		123		34		0.0	
PGX 18-2	80.2		74.5		57.2		123		32	-	0.0	
SH 4400	82.5		73.7		59.1		126	+	36		0.0	
15VDH-FHB-MAS22-15	76.3	-	73.4		60.7		119	-	33		0.0	
USG 3895	84.6		73.1		56.6		123		32	-	0.0	
NC15-21835	---		73.0		55.9		125		37	+	2.0	+
KWS333	---		73.0		51.9	-	121	-	35		0.0	
15VDH-FHB-MAS38-01	---		72.4	-	54.5	-	120	-	31	-	1.3	+
VA14HRW-25	---		72.2	-	55.7		123		37	+	1.5	+
AgriMAXX 492	---		72.0	-	60.3		122		34		0.0	
12VTK4-118	---		71.9	-	59.0		123		34		0.5	
16VDH-SRW07-067	---		71.7	-	56.3		122		31	-	0.3	
GA10268-17LE16	---		71.1	-	59.1		128	+	34		4.3	+
SY 007	80.3		71.0	-	52.3	-	120	-	34		0.0	
NC11546-14	---		70.9	-	56.5		123		34		0.3	
#Berkeley	75.3	-	70.3	-	55.5		121	-	34		0.0	
NC15-21834	73.5	-	70.2	-	59.4		125		37	+	4.3	+
Pioneer 26R10	82.8		69.9	-	59.0		125		34		0.3	
FL15105-LDH145	---		68.3	-	60.0		122	-	35		0.0	

Table 24. Summary of performance of entries in the Virginia Tech Wheat Test, Kentland farm, Blacksburg, VA, 2020 harvest.

Line	2-year Av. Yield (Bu/a)		Grain Yield (Bu/a)		Test Weight (Lb/bu)	Date Headed (Julian)		Mature Height (In)	Plant Lodging (0-9)	
Massey	70.9	-	67.3	-	59.7	124		35	1.5	+
FL15105-LDH110	---		66.3	-	59.7	123		34	0.0	
16VDH-SRW06-131	---		63.6	-	55.5	120	-	33	1.0	
SH 7200	71.4	-	60.7	-	57.6	122		35	0.0	
15VDH-FHB-MAS25-08	71.9	-	54.8	-	58.1	121	-	35	0.0	
MAS #106	64.6	-	47.5	-	56.7	118	-	34	0.0	
Average	84.5		80.4		57.9	123		34	0.2	
LSD (O.05)	6.3		7.9		3.0	2		2	1.0	
C.V.	7.4		6.9		3.6	1		4	---	

Released cultivars are shown in bold print.

Varieties are ordered by descending one-year 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 25. Summary of performance of entries in the Virginia Tech Wheat Test, planted No-Till at Tidewater AREC, Holland, VA, 2020 harvest.

Line	Grain Yield (Bu/a)		Test Weight (Lb/bu)	
USG 3316	62.3	+	58.2	
MAS #86	55.7	+	56.9	-
GA10407-17E8	53.3	+	60.8	+
15VDH-FHB-MAS25-15	53.1	+	60.2	+
TX15D9579	52.8	+	59.0	
WX20731	52.0	+	57.8	-
EXP 2003	51.7	+	57.7	-
USG 3230	51.5	+	57.8	-
MBX 246	51.3	+	59.1	
USG 3790	51.2	+	58.4	
MBX 176	50.9	+	57.6	-
USG 3221	50.6	+	60.0	+
9070	50.0		58.2	
TX15D9597	49.9		60.1	+
MAS #133	49.3		55.5	-
MBX 969	49.2		56.9	-
GA11656-17E11	48.9		61.4	+
WX20737	48.6		60.0	+
AgriMAXX 492	48.6		59.6	
NC11546-14	47.9		60.9	+
KWS333	47.7		58.3	
13VTK429-3	47.5		59.9	+
9932	47.4		58.9	
Liberty 5658	47.2		58.5	
Featherstone 31	47.1		59.6	
EXP 2002	46.7		59.7	+
USG 3329	46.5		58.4	
AgriMAXX 502	46.3		58.3	
SH 7510	46.2		59.5	
KWS242	45.9		58.8	
MAS1407-056-6-3	45.8		59.4	
16VDH-SRW05-205	45.8		58.9	
AgriMAXX 495	45.4		58.8	
SY 007	45.2		58.3	
#Blaze	45.2		57.8	-
GA10268-17LE16	45.0		58.7	
Massey	44.4		59.7	+
CROPLAN CP9606	44.2		57.7	-
LCS 11719	44.0		58.4	
MAS #136	43.9		57.3	-
DH15SRW65-53	43.8		60.3	+

Table 25. Summary of performance of entries in the Virginia Tech Wheat Test, planted No-Till at Tidewater AREC, Holland, VA, 2020 harvest.

Line	Grain Yield (Bu/a)	Test Weight (Lb/bu)	
PGX 18-8	43.7	58.4	
TX15D9253	43.7	56.4	-
19-10	43.6	57.2	-
16VDH-SRW07-067	43.2	58.9	
FL14078LDH-28	43.0	60.7	+
9941	43.0	56.5	-
9772	42.9	55.3	-
MBX 223	42.8	57.8	-
#Berkeley	42.6	58.8	
15VDH-FHB-MAS38-01	42.5	57.6	-
AgriMAXX 505	42.2	60.8	+
MAS #316	42.1	57.9	-
Featherstone 125	42.1	60.6	+
LWX20C	42.1	57.9	-
PGX 18-7	41.9	58.7	
AgriMAXX 473	41.6	58.6	
MAS #130	41.4	58.8	
15VDH-FHB-MAS33-30	41.0	61.0	+
#Bullet	40.8	58.3	
WX19713	40.8	60.6	+
16VDH-SRW06-131	40.8	59.5	
NC15-21835	40.4	61.1	+
15VDH-FHB-MAS25-08	40.4	60.5	+
VA15W-86	40.3	56.8	-
16VDH-SRW09-025	40.1	59.1	
19-12	40.1	56.9	-
19-11	40.0	57.5	-
9002	39.9	58.2	
LW2958	39.9	58.7	
NC15-21834	39.8	60.8	+
Pioneer 26R10	39.3	58.5	
15VTK-12-21	38.7	60.7	+
MBX 127	38.3	57.9	
LW2068	38.1	57.2	-
14VDH-SRW14-150	38.0	59.5	
MAS #143	38.0	57.6	-
USG 3536	37.9	58.6	
PGX 18-11	37.9	59.0	
LW2848	37.8	58.6	
USG 3118	37.8	60.3	+
VA14HRW-25	37.5	58.9	

Table 25. Summary of performance of entries in the Virginia Tech Wheat Test, planted No-Till at Tidewater AREC, Holland, VA, 2020 harvest.

Line	Grain Yield (Bu/a)		Test Weight (Lb/bu)	
15VDH-SRW02-075	37.3		59.1	
USG 3895	37.2		57.5	-
PGX 18-9	37.0		56.8	-
AgriMAXX 496	36.8		57.6	-
16VDH-SRW04-028	36.5		61.0	+
Hilliard	36.1		59.2	
FL15105-LDH110	35.5		60.2	+
FL14167LDH-158	35.3		59.8	+
SH 7200	35.2		58.9	
PGX 18-2	35.0		59.4	
CROPLAN CP8081	33.5		58.7	
MAS #35	33.4		57.6	-
SY 547	33.2		58.7	
Shirley	32.1		57.5	-
MAS #67	29.5		57.3	-
FL15105-LDH145	28.8		60.4	+
SY 576	27.4		58.1	
Laverne	27.3		58.6	
15VDH-FHB-MAS33-13	26.7		58.9	
15VDH-FHB-MAS34-18	26.3		60.6	+
19-17	25.0	-	58.0	
MAS #106	25.0	-	58.5	
VA17W-75	24.2	-	59.7	+
AgriMAXX 415	22.7	-	59.6	
FLLA10033C-6	20.7	-	56.6	-
SY Viper	19.8	-	60.0	+
16VDH-SRW03-023	19.3	-	58.5	
VA17W-74	17.5	-	60.4	+
MBX 17-M-245	16.4	-	58.2	
USG 3458	16.3	-	58.0	
12VTK4-118	15.9	-	59.8	+
DH13SRW022-23	15.4	-	59.8	+
SH 4400	14.1	-	58.3	
19-15	13.4	-	58.9	
MAS #128	13.3	-	57.7	-
15VDH-FHB-MAS22-15	12.8	-	59.7	+
VA16W-202	11.0	-	57.6	-
SY Richie	10.2	-	58.5	
13VTK59-148	9.3	-	na	
Pioneer 26R45	6.6	-	na	
MAS #140	*		*	

Table 25. Summary of performance of entries in the Virginia Tech Wheat Test, planted No-Till at Tidewater AREC, Holland, VA, 2020 harvest.

Line	Grain Yield (Bu/a)	Test Weight (Lb/bu)
Pioneer 26R59	*	*
PGX 19-3	*	*
AgriMAXX 503	*	*
L11919	*	*
13VTK59-55	*	*
VA17W-176	*	*
Average	39.7	58.8
LSD (O.05)	12.0	0.9
C.V.	21.4	1.0

Released cultivars are shown in bold print.

Varieties are ordered by descending one-year yield averages.

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

* Variety was fed upon by deer until there was nothing left.

na = samples were not available for testing due to deer feeding.

Deer feeding at this site was extensive; data is not being used for over-location or over-years analysis.

Table 26. Summary of performance of entries in the Virginia Tech Wheat Test, Shenandoah County, VA, 2020 harvest (thanks to Shane Richman.)

Line	2-year Av. Yield (Bu/a)		Grain Yield (Bu/a)		Test Weight (Lb/bu)	
MAS #143	---		112.2	+	60.5	
EXP 2002	---		99.8	+	61.1	
AgriMAXX 473	98.6	+	98.9	+	60.2	
MBX 127	---		97.6	+	59.9	
AgriMAXX 503	---		95.8	+	60.3	
#Blaze	97.6	+	95.0	+	59.6	
SH 4400	96.9	+	94.0		59.4	
LW2848	94.2		93.3		59.7	
MAS #133	---		93.1		56.2	-
9772	95.2		92.3		58.0	
WX20731	---		92.2		59.7	
19-10	---		92.0		59.3	
16VDH-SRW03-023	---		91.9		57.8	
15VDH-FHB-MAS33-13	---		91.6		60.9	
19-11	---		91.2		58.9	
L11919	---		91.2		59.8	
VA17W-75	93.0		91.2		61.1	
13VTK429-3	90.5		90.0		59.7	
SY 007	91.1		90.0		59.8	
Liberty 5658	94.7		89.9		58.6	
MAS #140	---		89.1		58.3	
15VDH-FHB-MAS38-01	---		88.9		60.3	
19-12	---		88.8		58.3	
MAS #128	---		88.6		56.9	-
16VDH-SRW07-067	---		88.5		59.0	
Hilliard	88.3		88.3		59.4	
LW2068	---		88.1		59.1	
LWX20C	---		87.9		60.2	
VA17W-176	95.0		87.9		59.4	
MAS #67	89.6		87.6		59.0	
15VTK-12-21	---		87.4		61.5	+
SY Viper	94.0		87.2		59.9	
CROPLAN CP9606	91.9		87.2		58.6	
SY 547	92.8		87.1		59.0	
9941	95.3		85.9		58.9	
PGX 18-8	89.1		85.7		60.2	
MAS #86	91.5		85.4		59.6	
MBX 223	---		85.3		59.7	
USG 3316	94.6		85.3		59.9	
13VTK59-148	---		85.3		60.9	
WX19713	---		85.1		59.5	

Table 26. Summary of performance of entries in the Virginia Tech Wheat Test, Shenandoah County, VA, 2020 harvest (thanks to Shane Richman.)

Line	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)	Test Weight (Lb/bu)	
USG 3329	88.8	85.0	59.1	
DH15SRW65-53	---	85.0	57.9	
9932	90.2	84.9	61.1	
19-15	---	84.6	60.0	
SY 576	86.4	84.4	58.7	
DH13SRW022-23	87.7	83.3	56.8	-
VA17W-74	87.7	83.2	60.9	
13VTK59-55	87.1	83.1	59.9	
SY Richie	95.2	82.9	58.0	
USG 3895	88.2	82.9	57.0	-
AgriMAXX 505	---	82.8	61.8	+
12VTK4-118	---	82.8	59.9	
FL14167LDH-158	---	82.6	59.0	
#Bullet	89.4	82.3	60.0	
MAS #316	88.4	82.2	59.9	
SH 7510	87.1	82.2	58.8	
AgriMAXX 496	91.6	81.9	57.9	
AgriMAXX 502	---	81.7	60.6	
16VDH-SRW09-025	---	81.4	58.3	
Featherstone 125	90.0	81.1	60.4	
USG 3118	87.7	81.0	60.8	
16VDH-SRW04-028	---	80.8	60.4	
USG 3536	90.1	80.7	60.2	
14VDH-SRW14-150	---	80.6	57.4	-
PGX 18-7	92.3	80.5	58.5	
Pioneer 26R45	90.0	80.5	60.5	
9002	---	80.4	58.8	
MBX 17-M-245	91.6	80.1	58.8	
FLLA10033C-6	---	80.0	56.2	-
LCS 11719	85.5	79.9	59.5	
PGX 19-3	---	79.9	61.0	
MAS #136	---	79.6	57.9	
GA11656-17E11	---	79.6	59.7	
MBX 176	---	79.4	59.1	
KWS333	---	79.3	58.9	
FL15105-LDH110	---	79.1	60.1	
15VDH-SRW02-075	85.1	79.0	56.9	-
MAS #35	86.6	78.9	60.6	
15VDH-FHB-MAS25-15	---	78.2	60.6	
MAS #130	---	78.1	58.9	
NC15-21834	81.8	78.0	60.7	

Table 26. Summary of performance of entries in the Virginia Tech Wheat Test, Shenandoah County, VA, 2020 harvest (thanks to Shane Richman.)

Line	2-year Av. Yield (Bu/a)		Grain Yield (Bu/a)		Test Weight (Lb/bu)	
GA10407-17E8	---		77.8		58.3	
FL15105-LDH145	---		77.5		60.8	
PGX 18-9	---		77.4		58.9	
USG 3458	88.3		77.3		59.2	
15VDH-FHB-MAS34-18	---		77.2		62.8	+
USG 3790	84.7		77.2		59.4	
Laverne	87.2		76.5		59.6	
9070	---		76.4		60.3	
16VDH-SRW06-131	---		76.4		61.5	+
Pioneer 26R59	86.3		76.3		59.6	
19-17	---		76.2		58.0	
PGX 18-2	83.9		75.4		57.9	
SH 7200	84.2		75.1		60.6	
EXP 2003	---		75.0		59.6	
USG 3221	---		74.6		61.6	+
15VDH-FHB-MAS25-08	87.8		74.6		61.6	+
15VDH-FHB-MAS33-30	77.7	-	74.6		63.4	+
VA14HRW-25	---		74.6		59.9	
MBX 969	83.6		74.6		58.3	
WX20737	---		74.3		61.2	
KWS242	---		74.2		58.9	
MBX 246	---		74.2		60.5	
16VDH-SRW05-205	---		74.0		59.6	
MAS #106	87.6		73.6		60.4	
AgriMAXX 415	87.6		73.6		60.2	
Massey	76.8	-	73.4		60.1	
MAS1407-056-6-3	---		73.4		59.9	
GA10268-17LE16	---		73.3		55.0	-
VA16W-202	80.6		73.1		58.4	
CROPLAN CP8081	---		72.6		60.5	
TX15D9579	76.4	-	72.3		58.0	
NC11546-14	---		72.2		62.6	+
PGX 18-11	---		71.2		59.7	
TX15D9253	80.2		71.2		55.2	-
Featherstone 31	81.7		70.2		59.6	
Pioneer 26R10	81.0		70.1		59.6	
LW2958	82.9		69.5		60.7	
#Berkeley	83.7		69.3		59.7	
Shirley	82.6		69.2		55.4	-
15VDH-FHB-MAS22-15	80.9		67.7		61.8	+
AgriMAXX 495	82.2		67.3	-	60.6	

Table 26. Summary of performance of entries in the Virginia Tech Wheat Test, Shenandoah County, VA, 2020 harvest (thanks to Shane Richman.)

Line	2-year Av. Yield (Bu/a)	Grain Yield (Bu/a)		Test Weight (Lb/bu)	
TX15D9597	80.9	66.1	-	58.8	
FL14078LDH-28	---	65.5	-	58.4	
NC15-21835	---	64.1	-	60.3	
VA15W-86	84.8	64.0	-	60.0	
USG 3230	---	63.9	-	57.9	
AgriMAXX 492	---	63.0	-	61.5	+
Average	87.9	81.1		59.5	
LSD (O.05)	8.0	13.8		1.7	
C.V.	9.0	11.7		2.1	

Released cultivars are shown in bold print.

Varieties are ordered by descending one-year yield averages.

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

Section 3: Milling and Baking Quality

Grain samples from 54 of the 148 entries included for a second year in Virginia's 2019 State Wheat Test grown at Blacksburg, VA having average or above average performance 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 27 from highest to lowest T-scores for overall milling and baking quality. The soft red winter cultivar Shirley that has historically 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 pastry baking quality and vice versa.

Adjusted Flour Yield Grade (Based on Samples Between 2009 and 2018)			
Grade	**Range**	**Percent**	
A	**>70.72**	**15**	
B	**69.55 to 70.72**	**20**	
C	**68.06 to 69.55**	**30**	
D	**66.66 to 68.06**	**20**	
F	**<66.66**	**15**	
Cookie Diameter (Based on Samples Between 2009 and 2018)			
Grade	**Range**	**Percent**	
A	**>19.22**	**15**	
B	**18.80 to 19.22**	**20**	
C	**18.31 to 18.80**	**30**	
D	**17.85 to 18.31**	**20**	
F	**<17.85**	**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 54 varieties ranged from 65.9% to 73.3%, and 30 varieties had flour yields and grades (A-C) that were similar to or higher than that of Shirley (69.5%) the quality standard check (Table 27).

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. Higher values are preferred for most soft wheat manufactured goods, particularly cakes and other high sugar baked products. The 54 varieties had softness equivalence scores that varied from 51.1% to 69.6% with 19 varieties having values of 63.0% or higher. Softness equivalence scores of 38 varieties were numerically higher than that of Shirley (58.3%).

Flour protein concentration of the 54 varieties varied from 6.9% to 9.7% and Shirley had a value of 8.1%. 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 of 17 varieties including Shirley (88.2%) were less than 100%, while the remaining 37 varieties had values ranging from 100% to 134% with a test average of 108%. Seven varieties had higher Lactic acid SRC values (123 to 134%) and flour protein concentrations (8.0 to 9.7%), and may have potential in blends to produce crackers or some bread type products.

Pastry baking quality was assessed via measurement of sugar cookie spread diameter, which ranged from 17.1 to 20.3 cm with a test average of 19.1 cm. Twenty-six varieties, including Shirley, had cookie spread diameters (19.22 cm or higher) that were rated as grade A. Seventeen varieties had overall quality T-scores (0.0 to 0.8) that were higher than that of Shirley.

Table 27. Milling and baking quality of entries in the Virginia Tech Official Variety Test based on evaluation of the 2019 Warsaw harvest.

Entry	Adjusted Flour Yield (%)	Adjusted Flour Yield % Grade	Softness Equiv (%)	Flour Protein (at 14%)	Lactic Acid SRC (%)	Cookie Diameter (cm)	Cookie Diameter Grade	Total T-Score*
USG 3404	71.4	A	66.6	6.9	106.6	20.3	A	0.8
USG 3316	71.3	A	69.6	7.7	110.2	20.0	A	0.8
USG 3329	71.0	A	66.3	7.7	118.9	19.6	A	0.6
VA09MAS1-12-5-1-1	70.5	B	60.7	8.3	110.2	19.5	A	0.6
AgriMAXX 495	70.9	A	63.8	8.2	120.9	19.8	A	0.5
MAS #86	70.4	B	64.3	7.3	97.8	20.2	A	0.5
USG 3458	71.2	A	64.7	6.9	88.5	19.9	A	0.5
MBX 17-M-245	71.3	A	63.0	7.1	90.2	19.3	A	0.4
PGX17-16	69.7	B	64.7	8.5	120.9	19.9	A	0.3
#Warrior	70.9	A	63.4	6.9	87.9	19.7	A	0.3
Pioneer 26R10	69.7	B	68.1	7.3	103.1	19.5	A	0.3
CROPLAN CP9606	70.8	A	62.4	7.1	82.9	20.0	A	0.2
Pioneer 26R41	70.2	B	64.3	7.9	118.1	19.2	B	0.2
USG 3895	69.9	B	64.6	7.5	89.2	20.2	A	0.2
Dyna-Gro 9941	70.2	B	57.4	8.7	96.2	19.5	A	0.1
Pioneer 26R59	69.3	C	65.4	7.1	96.4	19.5	A	0.1
AgriMAXX 415	69.3	C	59.1	8.1	109.3	19.5	A	0.0
Shirley (Standard)	69.5	C	58.3	8.1	88.2	19.3	A	0.0
Pioneer 26R45	68.8	C	59.9	7.7	84.7	19.8	A	0.0
Pioneer 26R36	70.3	B	63.2	7.2	94.1	18.9	B	0.0
DH12SRW056-058	69.3	C	62.1	8.0	133.9	18.7	C	0.0
AgriMAXX 473	69.9	B	63.0	7.7	97.7	19.2	A	-0.1
AgriMAXX 486	73.3	A	54.6	8.7	88.7	17.1	F	-0.1
VA16W-196	69.0	C	69.4	7.5	120.6	19.1	B	-0.2
LCS 11719	68.2	C	62.1	7.9	112.1	19.5	A	-0.2
DH12SRW057-006	69.2	C	55.5	9.4	111.4	18.5	C	-0.2
VA13W-38	68.1	D	54.9	8.8	103.6	19.3	A	-0.3
Hilliard	68.4	C	63.8	7.8	115.6	19.0	B	-0.3
13VTK429-3	68.8	C	58.6	8.7	126.6	18.6	C	-0.5
15VDH-FHB-MAS25-08	67.8	D	61.0	7.9	107.1	19.2	A	-0.5
Dyna-Gro 9811	67.7	D	64.6	7.9	118.9	19.2	B	-0.5
VA17W-176	68.1	C	57.0	8.4	113.6	18.6	C	-0.5
15VDH-FHB-MAS22-15	68.6	C	55.1	8.9	95.1	18.9	B	-0.5
Dyna-Gro 9600	68.0	D	61.9	8.0	116.8	19.4	A	-0.6
SY Viper	67.5	D	61.1	8.1	100.1	19.3	A	-0.6
AgriMAXX 463	67.5	D	58.3	8.6	96.1	19.3	A	-0.6
VA09MAS2-131-6-2	68.0	D	55.5	8.1	96.2	18.5	C	-0.6
MAS #61	67.0	D	62.9	7.3	109.8	19.6	A	-0.8
#Berkeley	65.9	F	58.2	9.5	101.4	19.2	B	-0.8
VA15W-86	67.4	D	58.1	8.4	123.4	18.9	B	-0.8

Table 27. Milling and baking quality of entries in the Virginia Tech Official Variety Test based on evaluation of the 2019 Warsaw harvest.

Entry	Adjusted Flour Yield (%)	Adjusted Flour Yield % Grade	Softness Equiv (%)	Flour Protein (at 14%)	Lactic Acid SRC (%)	Cookie Diameter (cm)	Cookie Diameter Grade	Total T-Score*
VA12MAS7-519-1-3WS	68.0	D	53.2	8.4	117.3	18.1	D	-0.9
15VDH-FHB-MAS33-30	66.3	F	61.3	8.3	126.8	18.8	C	-0.9
15VDH-SRW02-075	66.5	F	60.3	8.6	110.0	18.7	C	-0.9
Featherstone 31	66.4	F	58.8	7.9	121.1	18.5	C	-0.9
13VTK59-55	67.5	D	53.8	8.8	108.1	18.5	C	-1.0
DH13SRW022-23	66.9	D	57.6	8.1	118.1	18.5	C	-1.1
VA17W-75	67.3	D	59.3	8.0	124.4	18.2	D	-1.1
VA17W-74	67.2	D	57.1	8.6	124.6	17.7	F	-1.1
DH13SRW023-201	66.1	F	51.1	9.7	123.9	17.9	D	-1.1
#Blaze	66.4	F	58.0	8.0	117.1	18.7	C	-1.2
VA16W-148	66.7	D	62.2	8.1	96.4	18.0	D	-1.3
VA16W-202	66.7	D	64.8	7.8	117.8	18.7	C	-1.3
Dyna-Gro 9772	66.4	F	60.3	7.4	108.9	19.1	B	-1.3
USG 3197	66.1	F	59.6	7.2	102.8	19.0	B	-1.6
Average	68.7		60.8	8.0	107.8	19.1		
Standard Deviation	1.8		4.1	0.7	12.9	0.7		

Varieties are ordered by descending Total T-score, which accounts for overall milling and baking quality. Variety Shirley is used as the quality standard.

* 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 4: Wheat Scab Research

One of the primary research objectives of the Virginia Tech wheat breeding program is to identify and develop cultivars possessing resistance to Fusarium Head Blight (FHB) or scab. In 2020, 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- and three-year averages for FHB incidence, FHB severity, FHB Index, Fusarium Damaged Kernels (FDK), and ISK Index ((0.3*INC) +(0.3*SEV) +(0.4*FDK)/100) are included in this bulletin (Tables 28-30) to aid producers in selection of cultivars on the basis of FHB resistance. ISK Index values are more informative as they account for the field and post-harvest FDK traits into one value. Deoxynivalenol (DON) concentrations are included in the two and three-year average tables as DON concentrations for the 2020 Virginia state test entries are not currently available. 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 a process called Marker-Assisted Selection (MAS). In 2020, several lines, among the Virginia State test, developed through our MAS program have shown significantly improved levels of FHB resistance to year's past and good overall quality. These include 15VDH-FHB-MAS25-08, 15VDH-FHB-MAS38-01, 15VDH-FHB-MAS33-30, 15VDH-FHB-MAS33-13 and 15VDH-FHB-MAS34-18 along with other lines exhibiting good native resistance to FHB including 13VTK59-148, VA17W-75 and Hilliard.

In 2020, entries were inoculated by spreading scabby corn kernels (50g/4-rows) in plots at the booting stage. Overall, the wheat lines exhibited a moderate level of infection and expressed a good distribution of FHB related traits in the misted nursery. Among 130 lines and varieties tested in 2020, the FHB index varied from 0.5 to 68 with FHB incidence ranging from 5% to 90% and FHB severity ranging from 10% to 80% (Table 28). Eighty-one lines and varieties had FHB index values lower than the mean (<18.6) and expressed moderate resistant to FHB in 2020. Based on two year mean data for 2019 and 2020 (Table 29), 35 lines and varieties had FHB index values lower than the test mean (<21.5).

Table 28. Summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab), 2020 harvest.

Line	FHB Incidence (%)	FHB Severity (%)	FHB Index (0-100)	FHB Index (0-9)	FDK (%)	ISK Index (0-100)	Flowering Date (Julian)	
15VDH-FHB-MAS25-08	5.0	10.0	0.5	0.0	3.0	4.5	112	-
FL15105-LDH110	7.5	10.0	0.8	0.1	7.5	5.3	118	
MAS #106	10.0	10.0	1.0	0.1	3.0	6.0	119	
15VDH-FHB-MAS38-01	10.0	10.0	1.0	0.1	5.0	6.0	114	-
USG 3221	10.0	15.0	1.5	0.1	12.0	7.5	120	
EXP 2002	12.5	15.0	2.3	0.2	7.5	8.3	116	
15VDH-FHB-MAS33-13	15.0	15.0	2.5	0.2	5.5	9.0	121	
FL15105-LDH145	10.0	25.0	2.5	0.2	10.0	10.5	118	
16VDH-SRW06-131	15.0	20.0	3.0	0.3	11.5	10.5	115	
15VDH-FHB-MAS34-18	15.0	20.0	3.0	0.3	9.0	10.5	118	
Liberty 5658	20.0	20.0	4.0	0.4	13.5	12.1	121	
VA17W-75	20.0	20.0	4.0	0.4	9.0	12.0	122	
9772	25.0	15.0	4.5	0.4	12.5	12.1	123	
15VDH-FHB-MAS33-30	15.0	25.0	4.5	0.4	7.5	12.0	119	
PGX 18-2	25.0	15.0	4.5	0.4	16.5	12.1	118	
16VDH-SRW04-028	15.0	30.0	4.5	0.4	15.0	13.6	118	
15VDH-FHB-MAS25-15	25.0	20.0	5.0	0.5	11.0	13.5	120	
EXP 2003	30.0	15.0	5.0	0.5	4.0	13.5	124	
MBX 127	30.0	15.0	5.0	0.5	9.0	13.5	124	
MBX 246	20.0	20.0	5.0	0.5	10.0	12.0	124	
KWS333	20.0	25.0	5.5	0.5	10.0	13.5	124	
NC11546-14	25.0	20.0	5.5	0.5	7.5	13.5	121	
AgriMAXX 492	20.0	25.0	5.5	0.5	11.0	13.5	116	
AgriMAXX 503	30.0	15.0	5.5	0.5	12.5	13.6	124	
MBX 969	30.0	20.0	6.0	0.5	7.5	15.0	124	
AgriMAXX 505	35.0	15.0	6.0	0.5	10.0	15.0	123	
PGX 18-9	35.0	15.0	6.0	0.5	4.0	15.0	123	
PGX 19-3	30.0	20.0	6.0	0.5	7.5	15.0	124	
SY 007	25.0	20.0	6.5	0.6	10.0	13.5	122	
19-10	40.0	15.0	6.5	0.6	19.0	16.6	124	
MAS #140	25.0	25.0	6.5	0.6	4.0	15.0	124	
MAS #67	30.0	25.0	7.0	0.6	3.0	16.5	122	
16VDH-SRW07-067	35.0	20.0	7.0	0.6	15.0	16.6	114	-
WX20737	20.0	30.0	7.0	0.6	12.5	15.1	122	
WX20731	50.0	15.0	7.5	0.7	6.5	19.5	124	
MBX 176	35.0	20.0	7.5	0.7	9.0	16.5	124	
#Berkeley	30.0	25.0	8.0	0.7	17.5	16.6	115	
13VTK59-148	30.0	30.0	8.0	0.7	12.0	18.0	120	
MAS #86	30.0	20.0	8.0	0.7	6.5	15.0	124	
USG 3536	40.0	20.0	8.0	0.7	8.0	18.0	125	
CROPLAN CP8081	30.0	25.0	8.0	0.7	21.5	16.6	122	
PGX 18-11	30.0	30.0	8.0	0.7	15.0	18.1	116	
LW2068	35.0	20.0	8.5	0.8	6.5	16.5	124	
MAS #316	45.0	20.0	9.0	0.8	8.0	19.5	125	
9941	25.0	30.0	9.0	0.8	15.0	16.6	118	
VA15W-86	30.0	30.0	9.0	0.8	15.0	18.1	118	
KWS242	30.0	30.0	9.0	0.8	16.0	18.1	118	
Hilliard	35.0	25.0	9.5	0.9	16.5	18.1	121	

Table 28. Summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab), 2020 harvest.

Line	FHB Incidence (%)	FHB Severity (%)	FHB Index (0-100)	FHB Index (0-9)	FDK (%)	ISK Index (0-100)	Flowering Date (Julian)
Massey	30.0	32.5	9.8	0.9	21.5	18.8	124
Featherstone 125	30.0	30.0	10.0	0.9	10.0	18.0	120
VA17W-74	30.0	35.0	10.0	0.9	13.5	19.6	121
LWX20C	50.0	20.0	10.0	0.9	7.5	21.0	125
9070	40.0	25.0	10.0	0.9	16.5	19.6	121
MAS #143	40.0	20.0	10.0	0.9	6.5	18.0	124
SY Viper	35.0	30.0	10.5	1.0	12.5	19.6	115
LW2958	40.0	25.0	10.5	1.0	10.0	19.5	124
MAS #130	25.0	40.0	10.5	1.0	20.0	19.6	118
#Blaze	45.0	25.0	11.0	1.0	12.5	21.1	124
19-11	45.0	25.0	11.5	1.0	12.0	21.0	125
19-12	45.0	25.0	11.5	1.0	13.5	21.1	124
USG 3118	30.0	40.0	12.0	1.1	10.0	21.0	116
12VTK4-118	30.0	40.0	12.0	1.1	16.0	21.1	118
AgriMAXX 502	40.0	30.0	12.0	1.1	16.5	21.1	122
FL14167LDH-158	35.0	35.0	12.5	1.1	22.5	21.1	121
L11919	35.0	35.0	13.0	1.2	25.0	21.1	116
USG 3329	45.0	30.0	13.5	1.2	15.0	22.6	123
14VDH-SRW14-150	30.0	45.0	13.5	1.2	22.5	22.6	118
WX19713	45.0	30.0	13.5	1.2	11.5	22.5	124
SH 7200	35.0	40.0	14.0	1.3	30.0	22.6	116
AgriMAXX 415	40.0	35.0	14.0	1.3	12.5	22.6	123
VA14HRW-25	35.0	40.0	14.0	1.3	15.0	22.6	118
MBX 223	45.0	30.0	14.0	1.3	15.0	22.6	123
#Bullet	55.0	25.0	14.5	1.3	13.0	24.1	125
15VDH-FHB-MAS22-15	40.0	35.0	14.5	1.3	17.5	22.6	113 -
19-17	45.0	35.0	15.0	1.4	25.0	24.1	116
DH13SRW022-23	40.0	35.0	15.5	1.4	15.0	22.6	122
NC15-21834	40.0	35.0	17.0	1.5	6.5	22.5	124
MAS #133	50.0	35.0	17.0	1.5	11.0	25.5	124
MAS #35	45.0	40.0	18.0	1.6	17.5	25.6	124
VA16W-202	40.0	45.0	18.0	1.6	11.5	25.5	116
AgriMAXX 473	55.0	35.0	19.0	1.7	5.5	27.0	124
SY Richie	50.0	40.0	19.0	1.7	20.0	27.1	116
LW2848	65.0	30.0	19.5	1.8	4.0	28.5	125
Pioneer 26R10	60.0	35.0	20.5	1.9	22.5	28.6	123
9002	40.0	45.0	20.5	1.9	18.0	25.6	123
AgriMAXX 496	65.0	35.0	22.0	2.0	26.5	30.1	125
VA17W-176	55.0	40.0	22.0	2.0	32.5	28.6	120
USG 3316	50.0	45.0	22.5	2.0	15.0	28.6	124
15VDH-SRW02-075	50.0	45.0	23.0	2.1	15.0	28.6	124
Laverne	55.0	45.0	24.5	2.2	25.0	30.1	117
13VTK59-55	55.0	45.0	24.5	2.2	12.5	30.1	122
TX15D9579	45.0	55.0	24.5	2.2	22.5	30.1	120
MAS1407-056-6-3	55.0	40.0	24.5	2.2	13.5	28.6	124
NC15-21835	55.0	45.0	24.5	2.2	16.0	30.1	124
AgriMAXX 495	55.0	45.0	25.0	2.3	11.5	30.0	125
16VDH-SRW09-025	55.0	45.0	25.0	2.3	21.5	30.1	122

Table 28. Summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab), 2020 harvest.

Line	FHB Incidence (%)	FHB Severity (%)	FHB Index (0-100)	FHB Index (0-9)	FDK (%)	ISK Index (0-100)	Flowering Date (Julian)
9932	65.0	40.0	26.0	2.4	21.5	31.6	125
SY 576	60.0	45.0	27.0	2.5	17.5	31.6	128
SY 547	45.0	50.0	27.5	2.5	20.0	28.6	122
15VTK-12-21	70.0	40.0	28.0	2.5	16.5	33.1	124
FL14078LDH-28	55.0	50.0	29.0	2.6	50.0	31.7	121
MAS #136	75.0	40.0	29.5	2.7	17.5	34.6	125
Pioneer 26R45	50.0	60.0	30.0	2.7	7.5	33.0	124
PGX 18-7	65.0	45.0	30.0	2.7	27.5	33.1	123
PGX 18-8	55.0	50.0	30.5	2.8	12.5	31.6	123
USG 3230	55.0	55.0	30.5	2.8	22.5	33.1	123
CROPLAN CP9606	65.0	50.0	32.0	2.9	15.0	34.6	124
16VDH-SRW05-205	65.0	55.0	35.0	3.2	30.0	36.1	122
MBX 17-M-245	55.0	60.0	36.0	3.3	16.5	34.6	122
DH15SRW65-53	65.0	55.0	36.0	3.3	25.0	36.1	122
16VDH-SRW03-023	70.0	55.0	37.0	3.4	16.5	37.6	123
FLLA10033C-6	70.0	55.0	38.5	3.5	40.0	37.7	124
TX15D9253	65.0	60.0	39.0	3.5	26.5	37.6	120
GA11656-17E11	60.0	65.0	39.5	3.6	35.0	37.6	122
SH 7510	80.0	50.0	40.0	3.6	21.5	39.1	124
Featherstone 31	75.0	55.0	41.5	3.8	21.5	39.1	124
13VTK429-3	75.0	55.0	41.5	3.8	29.0	39.1	124
SH 4400	65.0	65.0	42.0	3.8	30.0	39.1	124
TX15D9597	70.0	60.0	42.0	3.8	37.5	39.2	120
GA10407-17E8	60.0	70.0	42.0	3.8	30.0	39.1	122
USG 3458	65.0	65.0	42.5	3.9	20.0	39.1	122
Pioneer 26R59	80.0	55.0	45.5	4.1	37.5	40.7	122
19-15	65.0	70.0	45.5	4.1	16.5	40.6	123
MAS #128	75.0	60.0	46.5	4.2	30.0	40.6	125
LCS 11719	75.0	65.0	49.5 +	4.5	25.0	42.1	123
USG 3895	80.0	65.0	52.0 +	4.7	37.5	43.7	123
Shirley	90.0 +	60.0	54.0 +	4.9	40.0	45.2	124
USG 3790	90.0 +	65.0	58.5 +	5.3	25.0	46.6	125
GA10268-17LE16	90.0 +	75.0 +	67.5 +	6.1	52.5	49.7	125
Average	43.4	35.5	18.3	2.0	16.6	23.7	121
LSD (O.05)	42.3	35.2	31.1	2.2	20.5	21.8	7
C.V.	49.5	50.3	86.6	80.2	62.8	46.5	3

Released cultivars are shown in bold print.

Varieties are ordered by ascending FHB index averages.

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

Scab Incidence (%): Based on infected spikes within 4-ft row.

Sccab Severity (%): Based on infected spikelets in 10 spikes showing disease symptoms.

FHB Index = (Incidence X Severity)/100; it is an overall indicator of scab resistance/susceptibility level.

FDK (%): Percentage of Fusarium damaged kernels out of 100.

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

Table 29. Two-year summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab), 2019 and 2020 harvests.

Line	FHB Incidence (%)	FHB Severity (%)	FHB Index (0-100)	Flowering Date (Julian)	FDK[1] (%)	ISK Index[2] (0-100)	2019 DON[3] (ppm)
MAS #106	8.3 -	10.0 -	1.0 -	116.7 -	6.3 -	5.5 -	2.0
MAS #67	15.0 -	14.3 -	2.9 -	120.8	4.3 -	8.8 -	1.2
MAS #86	21.7 -	17.7 -	4.6	122.3	16.8	11.9 -	5.3
VA17W-75	25.0 -	21.3	5.5	120.0	16.3	14.0 -	3.4
15VDH-FHB-MAS25-08	18.3 -	26.0	6.2	115.7 -	21.0	13.4 -	8.0
USG 3536	33.3	18.7 -	6.4	123.0	9.3 -	15.6	3.9
9772	28.3	21.2	6.4	122.2	20.8	14.9	5.4
MBX 969	35.0	20.8	7.3	123.0	12.5	16.8	6.9
MAS #316	46.7	16.3 -	7.7	123.8	16.0	19.0	8.2
#Bullet	41.7	18.7 -	8.5	123.7	17.7	18.2	4.5
Liberty 5658	33.3	26.2	9.1	119.7	12.5	17.9	10.4
LW2848	40.0	21.2	9.7	122.3	8.0 -	18.4	5.6
9941	36.7	25.7	9.8	120.8	19.7	18.8	8.5
DH13SRW022-23	31.7	31.3	10.4	120.5	21.7	19.0	4.9
LW2958	41.7	26.7	11.4	122.5	15.3	20.6	3.9
PGX 18-2	35.0	28.5	11.8	118.7	25.5	19.2	7.5
AgriMAXX 496	43.3	26.3	12.3	123.7	25.5	21.0	9.5
AgriMAXX 473	48.3	25.7	12.7	123.0	11.8	22.2	5.9
SY Viper	33.3	35.7	13.0	118.3	16.2	20.8	5.7
VA15W-86	40.0	32.7	13.2	118.8	18.3	21.9	13.6
Pioneer 26R45	33.3	33.0	13.3	123.2	15.8	20.0	2.0
SY 576	45.0	26.8	13.5	125.2 +	22.5	21.6	7.2
Hilliard	41.7	30.2	13.7	120.0	23.5	21.6	9.6
15VDH-FHB-MAS22-15	31.7	39.5	13.7	114.3 -	19.2	21.4	9.1
VA17W-74	38.3	36.7	14.0	118.7	24.5	22.6	6.3
MAS #35	45.0	32.0	14.4	123.2	39.2 +	23.3	11.7
9932	46.7	28.7	14.7	122.2	17.2	22.7	4.2
USG 3118	43.3	37.0	15.7	116.8 -	20.0	24.2	9.5
AgriMAXX 495	48.3	33.3	16.7	122.3	23.8	24.6	5.6
#Blaze	53.3	30.9	16.7	122.0	24.2	25.4	3.5
Massey	51.7	32.5	16.8	120.8	21.8	25.3	6.2
USG 3316	46.7	34.7	17.2	123.3	18.3	24.5	8.6
Laverne	45.0	36.3	17.9	117.7 -	13.7	24.5	9.4
SY 007	41.7	38.2	18.2	121.3	10.0 -	24.0	9.1
SY 547	50.0	37.0	20.8	121.3	33.3	26.2	9.7
VA16W-202	48.3	43.0	21.1	117.0 -	20.5	27.5	7.9
AgriMAXX 415	50.0	42.2	21.6	120.8	27.5	27.8	8.6
Pioneer 26R10	60.0	36.8	22.6	121.8	22.2	29.1	6.3
NC15-21834	50.0	41.7	22.7	121.8	18.8	27.6	13.0
USG 3329	56.7	38.7	23.3	122.3	17.0	28.7	6.9
PGX 18-8	53.3	42.2	23.4	122.5	30.8	28.8	15.0

Table 29. Two-year summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab), 2019 and 2020 harvests.

Line	FHB Incidence (%)	FHB Severity (%)	FHB Index (0-100)	Flowering Date (Julian)	FDK[1] (%)	ISK Index[2] (0-100)	2019 DON[3] (ppm)
VA17W-176	56.7	42.3	24.3	119.3	27.5	29.8	6.4
15VDH-SRW02-075	56.7	42.7	24.3	122.8	26.3	29.9	17.8
SH 7510	63.3	39.7	26.0	121.8	23.8	31.0	8.4
PGX 18-7	60.0	42.7	26.1	122.3	29.2	30.9	11.8
#Berkeley	65.0	37.0	26.6	116.3 -	39.2 +	30.8	24.1
15VDH-FHB-MAS33-30	45.0	50.5	26.9	116.7 -	14.5	28.7	10.3
13VTK59-55	60.0	44.7	26.9	120.7	20.8	31.5	7.6
LCS 11719	55.0	43.7	27.1	122.7	35.0	29.7	14.6
SY Richie	61.7	45.8	28.4	117.5 -	33.3	32.4	17.1
13VTK429-3	65.0	44.7	30.0	123.3	33.0	33.0	6.8
SH 4400	61.7	50.7	31.4	123.5	30.0	33.8	7.3
MBX 17-M-245	56.7	54.0	31.9	121.7	35.5	33.3	11.7
Featherstone 125	58.3	49.0	32.1	119.5	30.0	32.3	12.4
USG 3790	68.3	46.2	33.2	122.8	31.7	34.5	19.0
CROPLAN CP9606	70.0	48.0	33.4	120.2	18.3	35.5	6.1
USG 3458	68.3	54.2	37.4	122.2	33.3	36.9	6.4
Pioneer 26R59	76.7 +	48.8	38.0	120.0	32.5	37.8	7.2
USG 3895	73.3	55.8	41.3 +	122.3	39.2 +	38.9 +	10.5
Shirley	83.3 +	51.2	42.9 +	123.3	43.3 +	40.5 +	17.1
TX15D9579	70.0	61.3 +	44.1 +	119.8	44.2 +	39.6 +	22.9
SH 7200	70.0	61.7 +	47.0 +	118.7	50.0 +	39.7 +	16.4
Featherstone 31	80.0 +	62.0 +	50.1 +	123.2	23.8	42.7 +	9.2
TX15D9597	80.0 +	63.5 +	51.0 +	120.5	42.5 +	43.2 +	23.5
TX15D9253	81.7 +	68.0 +	56.2 +	120.3	48.8 +	45.1 +	25.9
Average	49.6	37.3	21.2	121	24.1	26.2	9.4
LSD (O.05)	23.9	18.8	18.3	3.2	13.2	12.1	0.0
C.V.	42.1	44.2	75.3	2.3	48.3	40.5	0.0

Released cultivars are shown in bold print.

Varieties are ordered by ascending two-year FHB index averages.

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

Scab Incidence (%): Based on infected spikes within 4 ft row.

Scab Severity (%): Based on infected spikelets in 10 spikes showing disease symptoms.

FHB Index=(Incidence x Severity)/100; it is an overall indicator of scab resistance/susceptibility level.

FDK (%) : Percentage of Fusarium damaged kernels out of 100.

ISK Index =((0.3*Inc) + (0.3*Sev) + (0.4*FDK)/100).

DON (ppm): concentration of deoxynivalenol in ppm.

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

Table 30. Three-year summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab), 2018, 2019 and 2020 harvests.

Line	ID	FHB Incidence[1] (%)		FHB Severity[2] (%)		FHB Index[3] (0-100)		Flowering Date (Julian)		FDK[4] (%)		ISK Index[5] (0-100)		2018-19 DON[6] (ppm)	
LCS 11719	1554	44.0	-	20.5	-	10.3	-	124		14.1	-	19.4	-	8.5	
9772	1200	47.0	-	23.6	-	12.0	-	124		18.5		21.3	-	10.4	
Hilliard	1218	58.0		31.8		19.5		122		26.1		27.0		11.9	
USG 3316	1398	61.0		33.1		20.5		125		19.0		28.3		12.6	
Liberty 5658	1445	55.0		33.6		21.3		123		17.5		26.7		13.5	
#Blaze	1454	70.0		31.1		22.0		124		22.5		30.4		4.3	-
AgriMAXX 495	1542	62.0		31.9		22.4		124		15.8		28.2		9.8	
MAS #86	1556	58.0		31.6		23.5		126		13.6	-	26.9		5.5	-
AgriMAXX 473	1406	68.0		31.8		23.6		125		10.3	-	30.0		11.1	
#Bullet	1396	64.0		30.4		23.8		126	+	16.6		28.4		8.4	
Massey	17	68.0		34.9		24.3		124		19.1		30.9		9.9	
AgriMAXX 415	1191	67.0		38.8		25.5		123		24.5		31.8		10.6	
USG 3329	1562	68.0		36.6		25.6		124		16.2		31.4		8.6	
Pioneer 26R45	1471	67.0		31.9		26.2		126	+	17.6		29.7		14.3	+
SY 547	1341	65.0		38.5		26.8		123		28.0		31.2		11.2	
SY Viper	1386	56.0		43.4		27.6		121	-	19.7		29.9		7.5	
CROPLAN CP9606	1516	65.0		43.4		28.7		121	-	26.3		32.6		11.2	
Pioneer 26R10	1159	73.0		39.4		29.7		124		25.3		33.8		7.6	
Laverne	1427	64.0		42.9		30.3		121	-	14.2	-	32.1		9.6	
13VTK429-3	1532	66.0		42.3		30.8		124		28.3		32.6		8.4	
USG 3118	1258	65.0		44.8		31.4		121	-	28.0		33.1		13.3	
MBX 17-M-245	1484	73.0		43.5		33.2		125		18.3		35.0		9.2	
VA16W-202	1524	76.0		46.2		36.1		125		25.8		36.8		11.1	
#Berkeley	1262	77.0		46.8		39.5		120	-	39.5	+	37.3		17.3	+
9941	1546	72.0		50.1		39.5		124		39.0	+	36.8		15.7	+
SH 7510	1485	79.0		50.9		40.7		123		27.0		39.1		6.2	-
SH 4400	1337	75.0		53.9		41.3		126		26.0		38.8		8.0	
USG 3458	1483	71.0		56.2	+	41.4		123		31.3		38.3		10.6	
Featherstone 125	1435	75.0		53.1		43.0		123		30.0		38.6		10.9	
Pioneer 26R59	1331	85.0	+	52.0		45.0		123		29.5		41.2		8.9	
USG 3895	1343	84.0		55.7		47.0	+	125		39.5	+	42.1	+	10.5	
Shirley	828	88.0	+	55.4		49.3	+	125		40.0	+	43.2	+	13.4	
Featherstone 31	1312	87.0	+	57.6	+	50.1	+	126		26.3		43.5	+	11.3	
MAS #316	1479	80.0		61.3	+	50.5	+	124		28.0		42.5	+	6.3	-
SH 7200	1156	81.0		62.4	+	53.0	+	121		44.0	+	43.2	+	13.0	
Average		69.0		42.3		31.9		123.6		24.7		33.5		10.3	
LSD (O.05)		15.9		13.7		14.7		2		9.8		8.2		3.8	
C.V.		26.2		36.9		52.4		2		45.0		27.9		37.1	

Released cultivars are shown in bold print.

Varieties are ordered by ascending three-year FHB index averages.

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

Table 30. Three-year summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab), 2018, 2019 and 2020 harvests.

Line	ID	FHB Incidence[1] (%)	FHB Severity[2] (%)	FHB Index[3] (0-100)	Flowering Date (Julian)	FDK[4] (%)	ISK Index[5] (0-100)	2018-19 DON[6] (ppm)

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

[1] Scab Incidence: Based on infected spikes within 4 ft row.

[2] Scab Severity: Based on infected spikelets in 10 spikes showing disease symptoms.

[3] FHB Index is an overall indicator of scab resistance/susceptibility level and takes into account both incidence and severity where 0 = highly resistant and 100 = highly susceptible.

[4] FDK (%): Fusarium damaged kernels, visual assessment of the percent of infected kernels.

[5] ISK Index =((0.3*Inc) + (0.3*Sev) + (0.4*FDK)/100).

[6] DON (ppm): Concentration of vomitoxin (deoxynivalenol).