



Small Grains in 2021

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Recommended Small Grain Varieties

The following are the small grain variety recommendations for Virginia in 2021. 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 Ritchie | 3 | 3 | Fair | Fair |
| Progeny #BERKELEY | 3 | 2 | Fair | Good |
| SY Viper | 3 | 4 | Poor | Fair |
| Dyna-Gro Laverne | 3 | 3 | Fair | Fair |
| MBX 17-M-245 | 4 | 1 | Good | Moderate |
| Liberty 5658 | 3 | 4 | Good | Moderate |
| Dyna-Gro 9002 | 4 | 3 | Good | Good |
| Pioneer Brand 26R59 | 4 | 3 | Moderate | Moderate |
| SY 547 | 3 | 3 | n/a | n/a |
| USG 3329 | 4 | 1 | Good | Good |

Mid- to Full-Season Heading Varieties (120-121 d, Julian)

| | | | | |
|---------------------|---|---|----------|----------|
| Hilliard | 3 | 3 | Fair | Moderate |
| Dyna-Gro 9120 | 4 | 4 | Fair | Moderate |
| MAS #86 | 3 | 2 | Good | Good |
| Pioneer Brand 26R45 | 3 | 3 | Moderate | Good |
| Dyna-Gro Shirley | 3 | 1 | Moderate | Moderate |
| Featherstone 125 | 3 | 4 | Good | Fair |
| LW2958 | 3 | 4 | Fair | Good |
| AgriMAXX 473 | 3 | 2 | Moderate | Moderate |
| LW2169 | 4 | 3 | Good | Good |
| USG 3316 | 4 | 2 | Good | Good |
| Progeny #BULLET | 3 | 2 | Good | Moderate |
| MAS #316 | 3 | 3 | Good | Poor |

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 Ritchie | Mod-Weak | Good | Very Good | Moderate | Very Good |
| #BERKELEY | Mod-Weak | Good | Mod-Good | Very Good | Good |
| SY Viper | Mod-Good | Good | Weak | Very Good | Moderate |
| Dyna-Gro Laverne | Moderate | Mod-Weak | Very Good | Mod-Weak | Good |
| MBX 17-M-245 | Moderate | Good | Weak | Very Good | Mod-Good |
| Liberty 5658 | Mod-Good | Moderate | Good | Very Good | Mod-Good |
| Dyna-Gro 9002 | Mod-Weak | Mod-Weak | Moderate | Moderate | 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 |

Mid- to Full-Season Heading Varieties (120-121 d, Julian)

| | | | | | |
|---------------------|----------|-----------|-----------|-----------|-----------|
| Hilliard | Good | Very Good | Good | Very Good | Very Good |
| Dyna-Gro 9120 | Moderate | Moderate | Moderate | Mod-Good | Mod-Weak |
| MAS #86 | Good | Very Good | Mod-Good | Mod-Good | Very Good |
| Pioneer Brand 26R45 | Mod-Good | Moderate | Good | Very Good | Moderate |
| Dyna-Gro Shirley | Mod-Weak | Very Good | Good | Very Weak | Good |
| Featherstone 125 | Mod-Weak | Moderate | Very Good | Moderate | Good |
| LW2958 | Good | Good | Moderate | Moderate | Moderate |
| AgriMAXX 473 | Mod-Good | Very Good | Good | Good | Moderate |
| LW2169 | Good | Moderate | Mod-Weak | Very Good | Good |
| USG 3316 | Good | Very Weak | Very Weak | Mod-Weak | Moderate |
| Progeny #BULLET | Good | Good | Good | Mod-Good | Moderate |
| MAS #316 | Mod-Weak | Weak | Weak | Moderate | Moderate |

† FHB - Fusarium head blight

Recommended Barley Varieties

| Adapted Regions | Hulled Barley | | | | | Hulless Barley |
|--------------------------------|---------------|--------------|----------|--------|-------------|----------------|
| | Nomini* | Thoroughbred | Atlantic | SB 255 | Secretariat | Amaze 10 |
| Coastal Plain | | X | X | X | X | X |
| Piedmont, South of James River | | X | X | X | X | X |
| Piedmont, North of James River | | X | X | X | X | X |
| West of Blue Ridge | X | X | X | X | X | X |

Agronomic Characteristics

| | | | | | | |
|-------------------|-----------|------|-------|-----------|------|------|
| Yield | 2 | 4 | 4 | 4 | 4 | 4 |
| Test Weight | 1 | 3 | 3 | 4 | 3 | 2 |
| Lodging Tolerance | Very Good | Good | Good | Very Good | Good | Fair |
| Relative Height | 3 | 3 | 2 | 3 | 2 | 3 |
| Relative Heading | Avg | Late | Early | Late | 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 Hirondezza.

KWS Cereals, 4110 Colleen Drive, Champaign, IL 61822 – KWS Scala, KWS Somerset, KWS Donau, KWS Joyau, and KWS Faro.

Limagrain Cereal Seeds (LCS), 7099 Parkbrook Lane, Cordova, TN 38018 – Calypso, Clementine, Fay, and Violetta.

Virginia Tech and Virginia Crop Improvement Association (VT and VCIA), 9142 Atlee Station Road, Mechanicsville, VA 23116 – Amaze 10, Atlantic, Barsoy, Dan, Eve, Nomini, SB 255, Secretariat, Thoroughbred, and Wysor.

Commercial and Experimental Wheat Entries

AgriMAXX Wheat Company, 7167 Highbanks Road, Mascoutah, IL 62258 – AgriMAXX 473, AgriMAXX 492, AgriMAXX 502, AgriMAXX 503, AgriMAXX 505, AgriMAXX 513, AgriMAXX 514, AgriMAXX 516, AgriMAXX Exp 2002, AgriMAXX Exp 2019 HRW, and AgriMAXX Exp 2020 HRW.

AgriPro, 1521 N Convent Street Suite 200, Bourbonnais, IL 60914 – SY 007, SY 100, SY 547, SY 576, SY Richie, SY Viper, and SY EXP117.

CORTEVA Agriscience Agriculture Division of DowDuPont (Pioneer), 974 Centre Rd, Chestnut Run Plaza Bldg. 735, Wilmington, DE 19805 - 26R36, 26R45, and 26R59.

Eddie Mercer Agri-Services, Inc. (Mercer Brand), 6900 Linganore Road, Frederick, MD 21701 – MBX 120, MBX 127, MBX 176, MBX 223, MBX 242, MBX 17-M-245, and MBX 246.

Erwin-Keith, Inc. (Progeny Ag Products), 1529 Highway 193, Wynne, AR 72396 – #BERKELEY, #BULLET, #BUSTER, #CHAD, PGX 19-10, and PGX 20-2.

Featherstone Farm Seed, Inc., 13941 Genito Road, Amelia, VA 23002 – Featherstone 125.

University of Florida, 3105 McCarty Hall B, Gainesville, FL 32611 – FL14167LDH-158, FLLA11004-7, and FLLA10033C-6.

University of Georgia, 1109 Experiment Street, Griffin, GA 30223 – GA10127-18LE26, GA15VDH-FHB-MAS23-18LE43F, and GA15VDH-FHB-MAS30-18ESc43F.

GROWMARK (FS Wheat), 1701 Towanda Avenue, Bloomington, IL 61722 – FS 601, FS 624, FS WX21B, FS 878, FS 891, and FS 875.

KWS Cereals, 495 County Road 1300 N, Champaign, IL 61822 – KWS380, KWS340, and KWS263.

Limagrain Cereal Seeds (LCS), 7099 Parkbrook Lane, Cordova, TN 38018 –L11719 and L11919.

Local Seed Company LLC, 802 Rozelle Street, Memphis, TN 38104 – LW2068, LW2148, LW2169, LW2848, and LW2958.

Meherrin Agricultural & Chemical Company (Southern Harvest), 4136 Severn Road, Severn, NC 27877 – SH 4400, SH 7200, SH 9310, and SH 9520.

Mid-Atlantic Seeds, 204 St. Charles Way, #163E, York, PA 17402 – MAS #2, MAS #67, MAS #86, MAS #106, MAS #133, MAS #139, MAS #143, and MAS #316.

NC State University (SunGrains), 840 Method Road Unit 3, Raleigh, NC 27695-7629 – NC11546-14, NC12164-97T, NC12164-200T, and NC12642-81.

Nutrien Ag Solutions (Dyna-Gro Seed), 15277 Richmond-Tappahannock Highway, St Stephens Church, VA 23148 - 9002, 9070, 9120, 9151, 9172, Laverne, Shirley, WX20734, WX20738, and WX21741.

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 3230, USG 3232, USG 3316, USG 3329, USG 3451, USG 3472, USG 3536, USG 3562, and USG EXP 3000.

Virginia Tech and Virginia Crop Improvement Association (VT and VCIA), 9142 Atlee Station Road, Mechanicsville, VA 23111 – Massey, Hardy 2518, 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 – CP8118, CP8045, and CPX91221.

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.

Introduction

The following tables present results from barley and wheat varietal tests conducted in Virginia in 2019-2021. 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 – 2021

Fall of 2020 had near-normal temperatures and significant rainfall in many areas of the Commonwealth. Some farmers took advantage of favorable weather and by the end of September, 19% of the intended wheat acres had been seeded compared to the 5-year average of 9%. Wet conditions persisted with 20% of the state having 'surplus' soil moisture in late October. By November 8, 66% of wheat acres were planted, exactly matching the 5-year average. Temperatures in late November were above normal, with a little less rain in some areas, but more than 10% of intended acres were still not planted due to wet soils. For the 2020 calendar year, Richmond received 15 more inches of rainfall than the long-term average. Wet weather persisted in many areas in January and February, delaying nitrogen fertilizer applications on many fields and leaving many fields with dead spots due to standing water. This resulted in only 26% of the crop rated good or excellent in late February. Wet weather and warm temperatures were the norm in March and crop condition improved to 39% of the crop rated good or excellent. The weather pattern persisted into mid-April. Seven percent of the crop had headed by April 18 compared to the five-year average of 11% by this date. Wheat condition improved through early May with heading still 13% behind average date. May was warm and dry for most areas with over half the state reporting soil moisture deficits. On June 13, 52% of the wheat crop was rated good or excellent. By this date, 30% of barley and 18% of wheat acres were harvested, both behind the normal pace. The Virginia field office of USDA's National Agricultural Statistics Service estimates that Virginia will produce 7.8 million bushels of winter wheat in 2021, unchanged from 2020. Yield is estimated at 60 bushels/acre, unchanged from 2020.

Farmers planted 220,000 acres in the 2020-21 crop year with 130,000 acres to be harvested for grain.

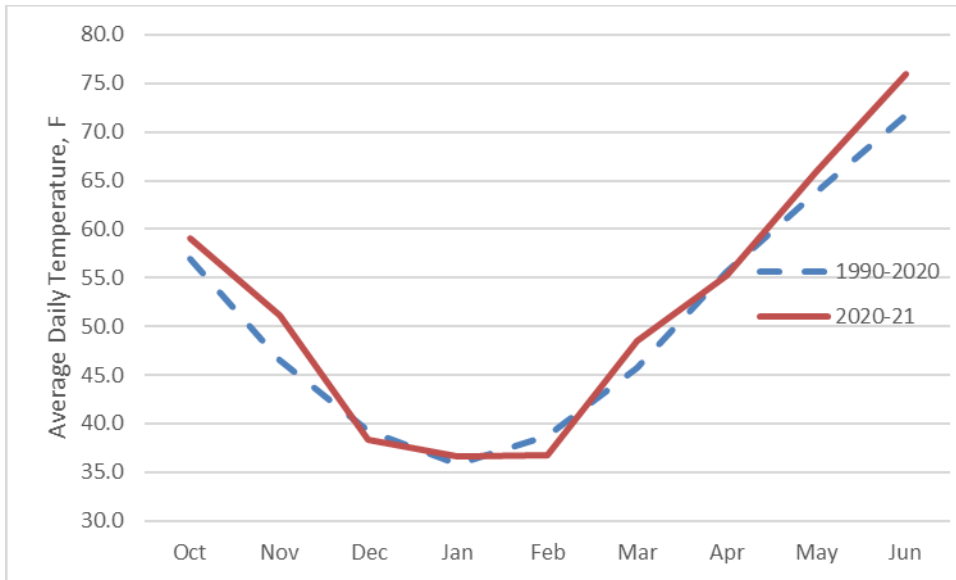


Figure 1. Daily average temperature for Virginia, 2020-21 and 30-year mean.

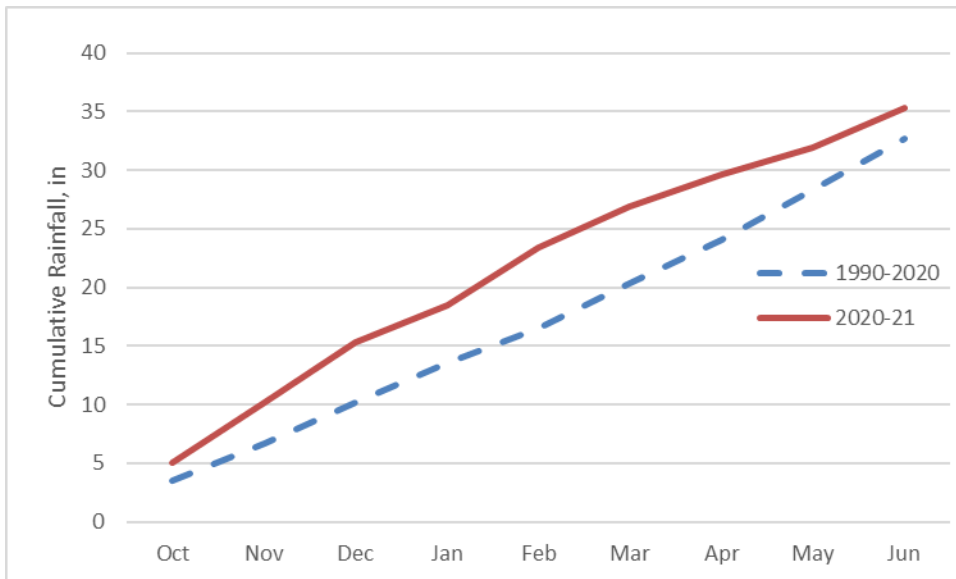


Figure 2. Cumulative growing season precipitation for Virginia, 2020-21 and 30-year mean.

Section 1: Barley Varieties

For more than 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 following 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 2021, 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 newest awnless feed barley 'VA16B-FHB-268 NA' to meet the needs of forage barley growers in the region.

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 hullless 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.

Hullless Barley

Hullless 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 2021 harvest year, grain yield for Eve was 67 bushels per acre with test weight of 58.5 pounds per bushel. Average grain yield of Dan was 65 bushels per acre with a test weight of 60.1 pounds per bushel. Average grain yield of Amaze 10 was 85 bushels per acre. It produced a test weight of 57.7 pounds/bushel that was similar to Eve. Among released lines, Amaze 10 had the greatest yield, out-yielding both Dan and Eve by 19 bushels per acre. Two hullless experimental lines, VA17H-19 and VA16H-160, ranked 1st and 2nd in grain yield with yields of 90 and 86 bushels per acre respectively, both similar to Amaze 10, and they produced test weight similar to the mean of all entries. Over the previous three harvest seasons, experimental lines VA16H-160 and VA06H-79 had yields that were significantly above the mean of all entries. Test weight of VA16H-160 was also above average.

Hulled Barley

Hulled barley tests were planted in seven-inch rows at Blackstone, Orange, Holland, and Painter. They were planted in six-inch rows at Warsaw and Blacksburg. The no-till site at Holland was planted at 48 seeds per square foot. All other locations were planted at 44 seeds per square foot.

In the 2021 harvest year, the released lines Hirondeella and Thoroughbred (both 6-rowed) produced yields (104 and 100 bushels per acre, respectively) that were significantly higher than the mean of the test. Yields for entries SB255, Secretariat, Atlantic and Nomini were all above the mean for all entries. Test weight was also greater

than the mean for SB 255. The experimental lines VA17B-166LA, VA18B-39, VA17B-163LA, VA18B-34, VA19B-20LA and VA18B-23LA all had grain yield significantly greater than the mean of all entries. VA17B-166LA, VA18B-39, VA17B-163LA, VA 18B-23La and VA18B-34 also had significantly higher test weight, indicating continued improvement in this area. Three-year average yield was superior for experimental lines VA17B-166LA, VA17B-163LA and VA17B-177LA and the released cultivar Secretariat. All four also produced greater test weight than average.

Summary of barley management practices for the 2021 harvest season (All rates are given on a per acre basis.)

Blacksburg - Planted October 6, 2020. Pre-plant fertilizer was 30-60-100-10(S). Site was sprayed with 1.2 oz. Harmony Extra SG® and fertilized with 25 units N using 30% UAN on March 13, 2021. Site was fertilized with 45 units N using 30% UAN + 1 qt Manni-Plex® for small grain April 6, 2021. Harvest occurred June 15, 2021.

Blackstone - Planted October 21, 2020. Pre-plant fertilizer was 500 lb. 6-6-18 on October 20, 2020. Site received 60 lb. N using UAN + 0.5 oz. Harmony Extra XP® March 9, 2021. Site received 60 lb. N using UAN + 4 oz. Mustang® Maxx on April 9, 2021. Harvest occurred June 1, 2021.

Painter - Planted October 22-23, 2020. Pre-plant fertilizer was 60 lb. N using 30% UAN on October 21, 2020. Application of .75 oz. Harmony + 80 lb. N using 30% UAN March 23, 2021. Harvest occurred June 9, 2021.

Warsaw - Planted October 23, 2020. Lime was applied at 1 ton on October 8, 2020. No lime was applied to the hulless barley. Pre-plant fertilizer was 30-60-60-12 applied October 7, 2020. The hulled barley site was fertilized using 12-0-0-1.5 at 25 lb. on December 9, 2020 and again on January 24, 2021. The hulless barley site was fertilized using 12-0-0-1.5 at 25 lb. on December 12, 2020 and again on January 24, 2021. Harmony Extra SG® at 0.9 oz. with surfactant was applied on December 11-12, 2020. Quelex® at 0.75 oz. + surfactant was applied March 9, 2021. Site was fertilized using 12-0-0-1.5 at 50 lb. on March 13, 2021. Harvest occurred June 7, 2021.

Holland - Planted October 22, 2020. Fertilizer was applied at 370 lb. 8-21-32 + 1000 lb. lime on October 18, 2020. Site was fertilized with 24 gal. 24-0-0-3 + 0.75 oz. Harmony Extra SG® on January 14, 2021 and again with 24 gal. 24-0-0-3 on April 6, 2021. Osprey® was applied at 4.75 oz. on March 15, 2021. Harvest occurred June 1, 2021.

Orange - Planted October 15, 2020. Pre-plant fertilizer was 282 lb. 30-80-60 October 13, 2020. Forty lb. N was applied February 17, 2021. Eighty lb. N plus 0.5 oz. Harmony Extra SG® was applied March 15, 2021. A second application of 0.5 oz. Harmony Extra SG® was applied March 29, 2021. Harvest occurred June 15, 2021.

Table 1. Summary of performance of entries in the Virginia Tech Hulless Barley Test over locations, 2021 harvest.

| Hulless Lines | Yield (Bu/a @ 48 lb/bu) | Test Weight (Lb/bu) | Date Headed (Julian) | Mature Height (In) | Plant Lodging (0-9) |
|------------------|-------------------------------|---------------------------|----------------------------|--------------------------|---------------------------|
| | (5) | (5) | (2) | (3) | (3) |
| VA17H-19 | 89.8 + | 57.7 | 114 | 32 | 0.5 |
| VA16H-160 | 86.2 + | 58.2 | 113 | 30 - | 0.5 |
| Amaze 10 | 85.4 + | 57.7 | 115 + | 32 | 1.4 + |
| VA06H-79 | 84.6 + | 57.0 - | 113 | 32 | 1.3 + |
| VA07H-35 WS | 83.7 + | 57.7 | 116 + | 31 | 1.2 |
| VA08H-79 WS | 80.9 + | 57.1 - | 116 + | 32 | 0.8 |
| VA15H-73 | 77.5 | 56.9 - | 117 + | 33 | 0.0 - |
| VA16H-27 | 77.2 | 56.6 - | 119 + | 33 | 0.1 |
| VA15H-11 | 71.6 | 58.2 | 114 | 33 | 1.8 + |
| Eve | 67.1 - | 58.5 | 106 - | 31 | 0.4 |
| Dan | 65.2 - | 60.1 + | 114 | 32 | 0.9 |
| VA18HFHB-30 WS | 60.0 - | 60.3 + | 112 - | 31 | 0.1 |
| VA18HFHB-29 WS/B | 59.9 - | 59.0 + | 110 - | 31 | 0.1 |
| VA18HFHB-26 WS | 54.1 - | 58.7 + | 109 - | 31 | 0.3 |
| Average | 74.5 | 58.1 | 113 | 32 | 0.7 |
| LSD (0.05) | 5.4 | 0.5 | 1 | 2 | 0.6 |
| C.V. | 10.8 | 1.2 | 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.

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

Table 2. Two-year average summary of performance of entries in the Virginia Tech Hulless Barley Tests, 2020 and 2021 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) | (10) | (4) | (6) | (5) | (2) |
| VA16H-160 | 89.0 + | 58.4 | 113 | 32 - | 1.0 | 5.6 |
| VA06H-79 | 88.4 + | 56.4 - | 111 - | 35 | 1.8 | 3.4 - |
| Amaze 10 | 87.0 + | 57.3 - | 116 + | 36 | 2.0 + | 4.5 |
| VA07H-35 WS | 84.7 + | 57.7 | 116 + | 35 | 1.6 | 4.5 |
| VA17H-19 | 84.7 + | 57.9 | 113 | 35 | 1.2 | 4.8 |
| VA15H-73 | 82.8 + | 56.9 - | 116 + | 37 + | 1.0 | 6.5 + |
| VA16H-27 | 81.5 | 56.9 - | 118 + | 36 + | 0.6 - | 3.5 - |
| VA15H-11 | 80.7 | 58.0 | 112 | 35 | 2.0 + | 4.4 |
| VA08H-79 WS | 78.3 | 57.0 - | 115 + | 35 | 1.6 | 2.9 - |
| Eve | 72.0 - | 58.0 | 105 - | 33 - | 1.0 | 7.6 + |
| Dan | 69.9 - | 58.8 + | 113 | 34 | 1.1 | 4.5 |
| VA18HFHB-30 WS | 68.3 - | 60.5 + | 110 - | 34 | 0.4 - | 6.5 + |
| VA18HFHB-29 WS/B | 68.0 - | 59.3 + | 110 - | 34 | 1.0 | 7.1 + |
| VA18HFHB-26 WS | 62.5 - | 59.3 + | 109 - | 34 | 1.1 | 7.0 + |
| Average | 78.4 | 58.0 | 113 | 35 | 1.2 | 5.2 |
| LSD (0.05) | 4.0 | 0.5 | 1 | 1 | 0.6 | 0.9 |
| C.V. | 10.9 | 2.0 | 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, 2019, 2020, and 2021 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) |
|-----------------|-------------------------------|---------------------------|----------------------------|--------------------------|---------------------------|------------------------|
| | (15) | (15) | (6) | (9) | (10) | (5) |
| VA16H-160 | 90.2 + | 58.3 + | 112 | 32 - | 1.0 - | 3.8 |
| VA06H-79 | 88.8 + | 56.5 - | 111 - | 34 | 1.8 | 1.9 - |
| VA17H-19 | 85.6 | 58.1 | 113 | 34 | 1.5 | 2.6 - |
| VA15H-73 | 85.6 | 57.3 - | 115 + | 37 + | 0.7 - | 4.1 + |
| Amaze 10 | 85.0 | 57.5 | 115 + | 35 | 2.7 + | 4.1 + |
| VA15H-11 | 84.3 | 58.1 | 111 - | 35 | 2.0 | 2.4 - |
| VA07H-35 WS | 83.9 | 57.8 | 115 + | 34 | 2.2 + | 4.2 + |
| VA16H-27 | 83.6 | 57.2 - | 117 + | 35 + | 0.5 - | 2.1 - |
| VA08H-79 WS | 79.6 | 57.0 - | 115 + | 35 | 1.8 | 2.2 - |
| Eve | 73.2 - | 57.9 | 105 - | 32 - | 2.3 + | 6.9 + |
| Dan | 71.8 - | 59.3 + | 112 | 34 | 1.5 | 3.0 |
| Average | 82.9 | 57.7 | 113 | 34 | 1.6 | 3.4 |
| LSD (0.05) | 3.3 | 0.4 | 1 | 1 | 0.5 | 0.6 |
| C.V. | 10.5 | 1.7 | 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, 2021 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) |
|------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------|
| VA17H-19 | 79.6 | 83.8 | 78.4 | 58.2 |
| Amaze 10 | 72.8 | 81.2 | 76.5 | 57.7 |
| VA16H-160 | 83.1 + | 87.7 + | 74.4 | 59.1 + |
| VA07H-35 WS | 73.8 | 77.3 | 73.9 | 58.1 |
| VA15H-11 | 79.7 | 90.1 + | 73.6 | 58.2 |
| Dan | 67.4 - | 70.2 - | 72.4 | 60.8 + |
| VA15H-73 | 75.5 | 77.4 | 71.0 | 56.8 - |
| VA16H-27 | 72.7 | 76.0 | 68.9 | 56.4 - |
| VA08H-79 WS | 71.2 | 74.6 | 68.2 | 56.6 - |
| VA18HFHB-30 WS | --- | 78.9 | 67.7 | 59.6 + |
| VA06H-79 | 77.2 | 81.1 | 65.5 | 57.0 - |
| VA18HFHB-29 WS/B | --- | 77.4 | 64.9 | 59.1 + |
| Eve | 72.5 | 76.4 | 61.0 | 58.4 |
| VA18HFHB-26 WS | --- | 71.6 - | 58.0 - | 58.6 |
| Average | 75.0 | 78.8 | 69.6 | 58.2 |
| LSD (0.05) | 4.8 | 6.2 | 10.2 | 0.6 |
| C.V. | 7.6 | 7.6 | 9.9 | 0.7 |

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.

Table 5. Summary of performance of entries in the Virginia Tech Hulless Barley Test, Tidewater AREC, Holland, VA, 2021 harvest.

| Hulless Lines | 2-year Av. Yield (Bu/a) | Yield (Bu/a @ 48 lb/bu) | Test Weight (Lb/bu) |
|------------------|-------------------------------|-------------------------------|---------------------------|
| VA07H-35 WS | 55.7 | 68.4 + | 57.4 |
| VA06H-79 | 56.2 | 59.3 | 56.4 |
| VA16H-27 | 55.9 | 57.8 | 56.1 |
| VA15H-73 | 53.1 | 55.7 | 56.1 |
| VA08H-79 WS | 54.7 | 55.7 | 56.8 |
| Amaze 10 | 56.3 | 54.1 | 56.2 |
| VA17H-19 | 43.6 | 51.4 | 56.3 |
| VA16H-160 | 57.1 | 50.6 | 57.9 |
| Dan | 48.5 | 47.2 | 59.6 |
| VA18HFHB-30 WS | 49.6 | 42.9 | 59.3 |
| VA15H-11 | 47.6 | 41.2 | 57.9 |
| Eve | 44.6 | 40.6 | 58.5 |
| VA18HFHB-29 WS/B | 38.8 - | 38.4 | 56.5 |
| VA18HFHB-26 WS | 35.8 - | 30.6 - | 57.8 |
| Average | 49.8 | 49.5 | 57.3 |
| LSD (0.05) | 8.8 | 11.3 | 2.3 |
| C.V. | 15.5 | 13.7 | 2.4 |

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.

NOTE: Three-year data for this location are 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, Eastern Shore AREC, Painter, VA, 2021 harvest.

| Hulless Lines | Yield (Bu/a @ 48 lb/bu) | Test Weight (Lb/bu) |
|------------------|-------------------------------|---------------------------|
| VA16H-160 | 56.7 | 58.9 |
| VA07H-35 WS | 56.4 | 58.7 |
| Amaze 10 | 55.2 | 58.2 |
| VA06H-79 | 54.1 | 58.1 |
| Dan | 52.9 | 60.6 + |
| Eve | 51.1 | 59.3 |
| VA15H-11 | 49.9 | 58.9 |
| VA17H-19 | 49.6 | 58.0 |
| VA18HFHB-30 WS | 49.6 | 60.9 + |
| VA16H-27 | 47.3 | 56.4 - |
| VA15H-73 | 47.1 | 56.4 |
| VA18HFHB-29 WS/B | 46.9 | 58.9 |
| VA08H-79 WS | 44.6 | 57.4 |
| VA18HFHB-26 WS | 44.0 | 57.9 |
| Average | 50.4 | 58.5 |
| LSD (0.05) | 7.9 | 2.1 |
| C.V. | 10.2 | 2.3 |

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

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

NOTE: Two- and three-year data for this location are not being reported because the 2021 harvest was not representative of performance and the 2020 field was abandoned.

Table 7. Summary of performance of entries in the Virginia Tech Hulless Barley Test, Northern Piedmont Center, Orange, VA, 2021 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) | Plant Lodging (0-9) |
|------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------|--------------------------|---------------------------|
| VA17H-19 | 95.9 | 97.5 + | 91.2 + | 57.8 | 31 | 0.0 |
| VA06H-79 | 101.1 + | 98.0 + | 84.0 + | 56.9 | 30 | 1.3 |
| VA16H-160 | 94.2 | 92.2 | 80.5 | 57.5 | 27 | 0.3 |
| VA08H-79 WS | 85.4 | 82.9 | 75.0 | 56.6 | 29 | 1.3 |
| Amaze 10 | 93.6 | 90.1 | 73.7 | 57.1 | 29 | 1.8 |
| Eve | 80.0 - | 77.2 | 71.6 | 57.5 | 29 | 0.3 |
| VA07H-35 WS | 85.2 | 83.4 | 70.7 | 56.6 | 29 | 1.0 |
| VA15H-11 | 91.8 | 79.5 | 66.8 | 57.8 | 30 | 3.3 + |
| VA16H-27 | 96.7 | 92.4 | 65.1 | 56.7 | 30 | 0.0 |
| VA15H-73 | 100.7 + | 97.7 + | 63.1 | 55.6 - | 31 | 0.0 |
| VA18HFHB-29 WS/B | --- | 76.3 | 52.9 | 58.5 | 28 | 0.0 |
| VA18HFHB-30 WS | --- | 68.3 - | 49.5 - | 59.4 + | 28 | 0.0 |
| Dan | 68.2 - | 60.1 - | 48.7 - | 59.3 + | 31 | 0.8 |
| VA18HFHB-26 WS | --- | 66.7 - | 46.7 - | 57.6 | 27 | 0.0 |
| Average | 90.2 | 83.0 | 67.1 | 57.5 | 29 | 0.7 |
| LSD (0.05) | 8.2 | 10.6 | 16.5 | 1.0 | 3 | 1.3 |
| C.V. | 10.1 | 11.4 | 15.5 | 1.1 | 8 | --- |

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, Kentland Farm, Blacksburg, VA, 2021 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) |
|------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------|----------------------------|--------------------------|---------------------------|
| VA16H-160 | 92.7 + | 85.1 + | 109.7 + | 58.2 | 117 | 29 | 0.0 |
| VA17H-19 | 84.4 | 84.4 + | 106.9 + | 57.9 - | 117 | 30 | 0.5 |
| VA06H-79 | 86.3 | 81.0 | 103.8 + | 56.8 - | 116 | 31 | 0.5 |
| VA08H-79 WS | 85.1 | 79.2 | 103.7 + | 57.1 - | 117 + | 32 | 0.5 |
| VA07H-35 WS | 90.7 + | 84.9 + | 102.0 | 57.6 - | 117 + | 31 | 0.8 |
| Amaze 10 | 89.7 | 81.8 | 99.7 | 58.0 | 117 + | 31 | 0.8 |
| VA15H-73 | 85.9 | 79.1 | 99.0 | 57.3 - | 118 + | 31 | 0.0 |
| VA16H-27 | 83.1 | 78.6 | 89.8 | 56.5 - | 123 + | 30 | 0.3 |
| VA15H-11 | 83.5 | 74.0 | 89.8 | 58.4 | 115 | 31 | 0.3 |
| Dan | 77.7 - | 74.9 | 89.0 | 60.5 + | 116 | 30 | 0.0 |
| Eve | 78.1 - | 71.7 | 87.1 | 59.0 + | 109 - | 31 | 0.3 |
| VA18HFHB-29 WS/B | --- | 69.3 - | 80.4 - | 60.0 + | 111 - | 30 | 0.0 |
| VA18HFHB-30 WS | --- | 63.4 - | 72.9 - | 61.2 + | 115 | 30 | 0.0 |
| VA18HFHB-26 WS | --- | 61.2 - | 72.7 - | 59.7 + | 111 - | 32 | 0.5 |
| Average | 85.2 | 76.3 | 93.3 | 58.4 | 115 | 31 | 0.3 |
| LSD (0.05) | 5.3 | 6.6 | 9.8 | 0.5 | 1 | 2 | 0.8 |
| C.V. | 7.4 | 8.5 | 7.2 | 0.5 | 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 9. Summary of performance of entries in the Virginia Tech Hulless Barley Test, Eastern Virginia AREC, Warsaw, VA, 2021 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) |
|------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------|----------------------------|--------------------------|---------------------------|
| VA17H-19 | 120.7 + | 125.7 + | 119.5 + | 58.3 - | 111 | 35 | 1.0 |
| Amaze 10 | 110.6 | 118.1 + | 111.1 + | 59.0 | 113 | 37 | 1.8 |
| VA06H-79 | 117.3 + | 123.3 + | 110.2 + | 58.1 - | 110 | 37 | 2.3 + |
| VA16H-160 | 114.9 + | 118.9 + | 109.6 + | 58.7 | 110 | 34 | 1.3 |
| VA07H-35 WS | 112.9 + | 118.1 + | 105.1 | 59.2 | 115 + | 35 | 1.8 |
| VA16H-27 | 99.8 | 98.7 | 96.6 | 57.1 - | 116 + | 37 | 0.0 - |
| VA15H-73 | 99.6 | 100.2 | 96.1 | 58.6 | 116 + | 37 | 0.0 - |
| VA15H-11 | 108.1 | 113.4 + | 92.1 | 58.6 | 113 | 37 | 2.0 |
| VA08H-79 WS | 95.3 - | 97.6 | 90.0 | 58.5 - | 114 + | 35 | 0.8 |
| Dan | 90.1 - | 95.1 | 80.0 | 60.4 + | 112 | 36 | 2.0 |
| Eve | 86.8 - | 93.4 | 79.7 | 59.0 | 104 - | 35 | 0.8 |
| VA18HFHB-30 WS | --- | 78.8 - | 62.6 - | 61.6 + | 108 - | 35 | 0.3 |
| VA18HFHB-26 WS | --- | 73.7 - | 57.3 - | 60.1 + | 107 - | 35 | 0.5 |
| VA18HFHB-29 WS/B | --- | 72.5 - | 54.6 - | 60.3 + | 108 - | 34 | 0.3 |
| Average | 105.1 | 102.0 | 90.3 | 59.1 | 111 | 36 | 1.0 |
| LSD (0.05) | 7.2 | 9.3 | 15.2 | 0.5 | 2 | 3 | 1.0 |
| C.V. | 7.6 | 8.6 | 10.3 | 0.6 | 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 10. Summary of performance of entries in the Virginia Tech Barley Test, 2021 harvest.

| Barley Lines | Yield (Bu/a @ 48 lb/bu) | Test Weight (Lb/bu) | Date Headed (Julian) | Mature Height (In) | Plant Lodging (0-9) |
|------------------------------|-------------------------------|---------------------------|----------------------------|--------------------------|---------------------------|
| | (6) | (6) | (2) | (3) | (2) |
| VA17B-166 LA | 104.9 + | 52.9 + | 110 - | 32 | 1.0 |
| Hirondella | 104.1 + | 48.6 - | 120 + | 30 - | 0.3 |
| VA18B-39 | 103.6 + | 51.9 + | 112 - | 30 | 1.0 |
| VA17B-163 LA | 101.4 + | 53.0 + | 109 - | 32 | 1.0 |
| VA18B-34 | 100.8 + | 52.1 + | 112 - | 31 | 0.8 |
| VA19B-20 LA | 100.5 + | 51.3 | 117 + | 32 | 0.8 |
| Thoroughbred | 99.9 + | 51.3 | 115 + | 32 | 1.0 |
| VA18B-23 LA | 98.9 + | 51.9 + | 113 | 34 + | 2.1 + |
| SB 255 (VA11B-141 LA) | 97.8 | 52.3 + | 114 | 36 + | 0.1 - |
| VA18B-72 LA | 97.6 | 52.2 + | 112 - | 32 | 1.3 |
| VA18B-33 LA | 97.6 | 52.1 + | 111 - | 32 | 1.3 |
| VA18B-43 LA | 96.9 | 51.7 + | 113 | 32 | 1.3 |
| VA13B-25 LA | 96.7 | 52.3 + | 109 - | 32 | 1.5 |
| Secretariat | 96.4 | 50.9 | 108 - | 30 - | 1.3 |
| VA18B-52 LA (Dec.) | 96.4 | 52.6 + | 110 - | 32 | 1.3 |
| VA17B-177 LA | 96.0 | 52.2 + | 110 - | 29 - | 0.8 |
| VA92-42-46 | 95.9 | 49.6 - | 110 - | 37 + | 1.8 + |
| Atlantic | 94.6 | 50.3 | 108 - | 30 | 2.3 + |
| VA18BFHB-80 LA | 94.2 | 51.8 + | 116 + | 35 + | 0.3 |
| VA19B-17 LA | 93.6 | 49.9 - | 116 + | 30 - | 0.0 - |
| VA18B-50 LA | 93.4 | 52.6 + | 109 - | 30 | 0.8 |
| Nomini | 93.1 | 48.0 - | 108 - | 37 + | 1.6 + |
| VA19BFHB-10 LA | 92.7 | 51.6 + | 112 | 33 | 0.8 |
| KWS Donau | 91.6 | 50.2 | 118 + | 29 - | 0.5 |
| LCS Calypso | 91.3 | 49.2 - | 118 + | 29 - | 0.4 |
| KWS Faro | 90.9 | 49.9 - | 117 + | 30 - | 0.0 - |
| VA18B-5 LA | 90.7 | 51.9 + | 115 + | 33 + | 0.9 |
| VA18BFHB-160 LA | 90.0 | 50.5 | 112 - | 34 + | 0.4 |
| KWS Joyau | 86.9 | 49.2 - | 116 + | 27 - | 0.0 - |
| VA16BFHB-268 NA | 86.4 | 48.5 - | 110 - | 39 + | 1.3 |
| VA18BFHB-157 LA | 86.2 | 51.1 | 114 | 33 | 0.0 - |
| KWS Somerset | 86.1 - | 49.3 - | 121 + | 29 - | 0.1 - |
| BC Fay | 86.1 - | 49.2 - | 117 + | 27 - | 0.4 |
| Barsoy | 85.7 - | 50.4 | 109 - | 32 | 1.9 + |
| Flavia | 85.3 - | 50.3 | 119 + | 27 - | 0.3 |
| VA18B-63 LA | 85.3 - | 52.2 + | 111 - | 34 + | 0.5 |
| VA18BFHB-126 LA | 84.0 - | 51.5 | 115 + | 33 | 0.5 |
| Wysor | 83.2 - | 49.1 - | 112 - | 37 + | 3.0 + |

Table 10. Summary of performance of entries in the Virginia Tech Barley Test, 2021 harvest, continued.

| Barley Lines | Yield (Bu/a @ 48 lb/bu) | Test Weight (Lb/bu) | Date Headed (Julian) | Mature Height (In) | Plant Lodging (0-9) |
|----------------------|-------------------------------|---------------------------|----------------------------|--------------------------|---------------------------|
| | (6) | (6) | (2) | (3) | (2) |
| KWS Scala | 79.3 - | 48.0 - | 117 + | 27 - | 0.8 |
| LCS Violetta | 78.7 - | 51.2 | 116 + | 28 - | 1.0 |
| BC Clementine | 72.6 - | 49.4 - | 116 + | 28 - | 0.1 - |
| Average | 92.4 | 50.8 | 113 | 31 | 0.9 |
| LSD (0.05) | 6.2 | 0.7 | 1 | 2 | 0.7 |
| C.V. | 10.8 | 2.2 | 1 | 6 | --- |

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

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

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

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

Table 11. Two-year average summary of performance of entries in the Virginia Tech Barley Tests, 2020 and 2021 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) |
|------------------------------|-------------------------------|---------------------------|----------------------------|--------------------------|---------------------------|------------------------|
| | (11) | (11) | (4) | (6) | (5) | (2) |
| Hirondella | 107.7 + | 48.0 - | 117 + | 32 - | 0.7 | 2.0 |
| KWS Faro | 104.1 + | 49.1 - | 114 + | 32 - | 0.3 - | 2.3 |
| VA18B-39 | 104.0 + | 50.4 + | 110 - | 32 | 1.6 + | 2.4 |
| VA17B-166 LA | 101.6 + | 51.5 + | 108 - | 33 | 1.1 | 1.1 - |
| VA17B-163 LA | 101.5 + | 51.5 + | 108 - | 33 | 1.3 | 1.4 - |
| Secretariat | 100.9 + | 49.8 | 107 - | 31 - | 1.9 + | 2.6 |
| VA18B-52 LA (Dec.) | 100.9 + | 51.3 + | 109 - | 34 | 0.9 | 2.0 |
| VA18B-43 LA | 100.5 | 50.4 + | 111 | 34 | 0.7 | 1.6 |
| VA18B-34 | 100.3 | 50.6 + | 110 | 33 | 1.7 + | 1.4 - |
| VA18B-23 LA | 100.0 | 50.8 + | 112 + | 36 + | 2.0 + | 1.9 |
| VA18B-33 LA | 99.6 | 51.0 + | 109 - | 33 | 1.6 + | 1.8 |
| Thoroughbred | 99.5 | 50.5 + | 113 + | 35 | 0.8 | 3.0 |
| LCS Calypso | 99.0 | 48.8 - | 117 + | 33 | 0.6 | 2.9 |
| VA13B-25 LA | 98.5 | 50.5 + | 106 - | 34 | 1.1 | 1.6 |
| Atlantic | 98.4 | 49.5 | 106 - | 32 - | 2.4 + | 2.1 |
| VA17B-177 LA | 98.1 | 50.8 + | 108 - | 31 - | 1.1 | 2.4 |
| VA18B-50 LA | 97.6 | 51.5 + | 108 - | 32 | 1.2 | 2.3 |
| SB 255 (VA11B-141 LA) | 97.5 | 51.0 + | 111 | 36 + | 0.4 - | 2.3 |
| VA18B-5 LA | 97.0 | 50.8 + | 113 + | 36 + | 1.1 | 2.9 |
| BC Fay | 96.7 | 48.5 - | 113 + | 30 - | 0.6 | 2.1 |
| Nomini | 96.5 | 46.8 - | 106 - | 37 + | 1.7 + | 2.0 |
| KWS Somerset | 96.4 | 49.1 - | 117 + | 31 - | 0.6 | 2.1 |
| VA18B-72 LA | 96.1 | 51.0 + | 110 | 33 | 1.1 | 2.4 |
| Flavia | 96.0 | 49.7 | 117 + | 29 - | 0.4 - | 2.0 |
| VA18BFHB-80 LA | 95.7 | 50.5 + | 112 + | 36 + | 0.7 | 2.0 |
| VA18BFHB-160 LA | 93.0 | 49.5 | 109 - | 35 + | 0.7 | 2.5 |
| KWS Donau | 91.7 | 48.9 - | 114 + | 30 - | 0.6 | 3.0 |
| VA92-42-46 | 91.1 - | 48.1 - | 109 - | 38 + | 1.6 | 4.1 + |
| VA18BFHB-157 LA | 89.5 - | 50.4 + | 110 | 34 | 0.3 - | 2.3 |
| BC Clementine | 89.2 - | 49.1 - | 112 + | 29 - | 0.3 - | 2.4 |
| Wysor | 88.9 - | 47.7 - | 109 - | 38 + | 2.9 + | 3.6 + |
| LCS Violetta | 88.7 - | 50.1 | 112 + | 30 - | 0.8 | 2.1 |
| VA18BFHB-126 LA | 88.5 - | 50.7 + | 111 | 34 | 0.6 | 2.4 |
| VA16BFHB-268 NA | 88.1 - | 47.8 - | 107 - | 39 + | 1.0 | 2.8 |
| KWS Scala | 87.3 - | 47.7 - | 113 + | 28 - | 0.7 | 2.8 |

Table 11. Two-year average summary of performance of entries in the Virginia Tech Barley Tests, 2020 and 2021 harvests, continued.

| 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) |
|---------------|-------------------------------|---------------------------|----------------------------|--------------------------|---------------------------|------------------------|
| | (11) | (11) | (4) | (6) | (5) | (2) |
| VA18B-63 LA | 86.3 - | 51.5 + | 109 - | 36 + | 0.5 - | 1.8 |
| Barsoy | 86.0 - | 49.2 - | 106 - | 34 | 2.1 + | 2.9 |
| Average | 96.0 | 49.8 | 111 | 33 | 1.1 | 2.3 |
| LSD (0.05) | 4.8 | 0.5 | 1 | 1 | 0.5 | 0.8 |
| C.V. | 11.0 | 2.3 | 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.

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

Table 12. Three-year average summary of performance of entries in the Virginia Tech Barley Tests, 2019, 2020, and 2021 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) |
|------------------------------|-------------------------------|---------------------------|----------------------------|--------------------------|---------------------------|------------------------|
| | (16) | (15) | (6) | (9) | (10) | (5) |
| VA17B-166 LA | 101.0 + | 50.3 + | 108 - | 33 | 1.4 - | 1.2 - |
| VA17B-163 LA | 100.2 + | 50.4 + | 108 - | 33 | 1.6 - | 1.2 - |
| Secretariat | 98.0 + | 48.9 + | 108 - | 31 - | 2.9 + | 3.6 |
| VA17B-177 LA | 96.8 + | 49.7 + | 108 - | 31 - | 1.2 - | 2.4 - |
| Thoroughbred | 95.8 | 48.7 | 112 + | 33 | 1.4 - | 5.0 + |
| SB 255 (VA11B-141 LA) | 95.5 | 49.6 + | 111 + | 35 + | 1.8 | 2.6 - |
| Atlantic | 94.1 | 48.1 | 107 - | 30 - | 3.2 + | 4.0 + |
| VA13B-25 LA | 93.1 | 49.2 + | 106 - | 32 | 2.7 | 2.5 - |
| LCS Calypso | 91.5 | 46.9 - | 116 + | 32 | 2.3 | 4.5 + |
| Nomini | 87.6 - | 46.0 - | 106 - | 36 + | 2.1 | 2.2 - |
| Barsoy | 86.6 - | 48.3 | 107 - | 32 | 3.0 + | 3.7 |
| LCS Violetta | 85.7 - | 48.9 + | 112 + | 29 - | 1.3 - | 3.0 |
| Wysor | 83.4 - | 46.3 - | 109 | 36 + | 3.4 + | 5.2 + |
| VA92-42-46 | 82.7 - | 46.7 - | 109 | 36 + | 2.8 + | 5.6 + |
| Average | 92.3 | 48.4 | 109 | 33 | 2.2 | 3.3 |
| LSD (0.05) | 3.9 | 0.4 | 1 | 1 | 0.6 | 0.6 |
| C.V. | 11.2 | 2.4 | 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 13. Summary of performance of entries in the Virginia Tech Barley Test, Southern Piedmont AREC, Blackstone, VA, 2021 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) |
|------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------|
| VA18B-50 LA | --- | 95.8 + | 81.9 + | 53.5 + |
| SB 255 (VA11B-141 LA) | 92.4 + | 97.8 + | 80.7 + | 51.8 |
| Thoroughbred | 87.1 | 90.4 | 80.0 + | 51.3 |
| VA19B-17 LA | --- | --- | 79.0 | 50.4 |
| BC Fay | --- | 92.5 | 78.0 | 48.7 - |
| VA18B-23 LA | --- | 93.8 | 77.8 | 51.5 |
| VA17B-163 LA | 87.1 | 90.4 | 77.3 | 54.0 + |
| VA18B-33 LA | --- | 94.7 | 77.2 | 52.2 + |
| Hirondella | --- | 92.9 | 76.9 | 46.2 - |
| VA17B-166 LA | 88.9 | 90.4 | 76.4 | 53.3 + |
| VA19B-20 LA | --- | --- | 76.2 | 51.1 |
| VA18B-72 LA | --- | 88.2 | 74.9 | 52.8 + |
| VA18BFHB-80 LA | --- | 91.0 | 74.4 | 53.0 + |
| Barsoy | 85.7 | 86.7 | 73.2 | 51.6 |
| KWS Donau | --- | 86.5 | 73.2 | 49.5 - |
| VA13B-25 LA | 83.7 | 92.7 | 72.3 | 53.4 + |
| Secretariat | 89.1 | 96.1 + | 71.2 | 50.9 |
| VA18BFHB-160 LA | --- | 84.4 | 69.2 | 51.3 |
| KWS Scala | --- | 82.6 | 69.1 | 47.6 - |
| KWS Joyau | --- | --- | 67.5 | 47.6 - |
| VA19BFHB-10 LA | --- | --- | 66.8 | 52.6 + |
| VA18B-39 | --- | 88.1 | 66.8 | 51.9 |
| KWS Somerset | --- | 85.7 | 65.8 | 48.9 - |
| VA18B-52 LA (Dec.) | --- | 90.4 | 65.7 | 53.8 + |
| VA18B-34 | --- | 85.5 | 65.4 | 52.1 + |
| VA17B-177 LA | 81.5 | 83.0 | 65.3 | 51.6 |
| Flavia | --- | 89.9 | 65.2 | 48.5 - |
| KWS Faro | --- | 93.0 | 63.8 | 49.5 - |
| VA18B-43 LA | --- | 84.1 | 63.4 | 52.3 + |
| VA18BFHB-157 LA | --- | 80.8 | 63.0 | 52.1 + |
| LCS Calypso | 78.4 | 81.1 | 61.7 | 47.7 - |
| LCS Violetta | 74.2 - | 79.1 | 61.6 | 50.0 |
| Atlantic | 82.2 | 85.7 | 61.0 | 51.0 |
| VA18B-63 LA | --- | 79.4 | 58.2 | 51.7 |
| VA18BFHB-126 LA | --- | 72.8 - | 58.2 | 51.7 |
| VA18B-5 LA | --- | 90.7 | 56.3 | 52.1 + |
| BC Clementine | --- | 78.8 | 55.7 | 48.6 - |
| VA92-42-46 | 72.4 - | 75.5 - | 53.0 - | 50.2 |

Table 13. Summary of performance of entries in the Virginia Tech Barley Test, Southern Piedmont AREC, Blackstone, VA, 2021 harvest, continued.

| Barley Lines | 3-year Av. Yield (Bu/a) | 2-year Av. Yield (Bu/a) | Yield (Bu/a @ 48 lb/bu) | Test Weight (Lb/bu) |
|-----------------|-------------------------------|-------------------------------|-------------------------------|---------------------------|
| VA16BFHB-268 NA | --- | 77.6 - | 51.2 - | 49.3 - |
| Wysor | 75.5 | 77.1 - | 44.6 - | 49.2 - |
| Nomini | 75.3 - | 79.3 | 42.5 - | 49.3 - |
| Average | 82.4 | 86.6 | 67.4 | 50.9 |
| LSD (0.05) | 7.0 | 8.1 | 11.9 | 1.1 |
| C.V. | 9.6 | 9.0 | 11.7 | 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.

Table 14. Summary of performance of entries in the Virginia Tech Barley Test, Tidewater AREC, Holland, VA, 2021 harvest.

| Barley Lines | 2-year Av. Yield (Bu/a) | Yield (Bu/a @ 48 lb/bu) | Test Weight (Lb/bu) |
|------------------------------|-------------------------------|-------------------------------|---------------------------|
| VA18B-5 LA | 67.4 | 76.5 | 51.9 |
| KWS Faro | 72.7 | 70.7 | 48.3 |
| VA19B-17 LA | --- | 69.3 | 50.3 |
| Hirondella | 70.2 | 69.2 | 47.7 - |
| BC Clementine | 73.0 | 69.2 | 49.1 |
| LCS Calypso | 75.7 | 68.5 | 46.0 - |
| SB 255 (VA11B-141 LA) | 66.9 | 68.4 | 52.3 |
| KWS Somerset | 76.2 | 68.3 | 47.2 - |
| VA19B-20 LA | --- | 68.0 | 50.1 |
| Thoroughbred | 66.1 | 66.6 | 51.5 |
| VA18B-34 | 62.6 | 66.6 | 51.6 |
| VA18B-23 LA | 68.3 | 66.6 | 51.0 |
| VA18B-39 | 73.9 | 64.3 | 51.4 |
| Barsoy | 64.0 | 64.2 | 50.6 |
| VA18BFHB-126 LA | 68.4 | 64.1 | 52.2 |
| VA18BFHB-157 LA | 66.0 | 63.5 | 50.8 |
| Flavia | 67.2 | 61.7 | 48.5 |
| KWS Joyau | --- | 61.3 | 48.6 |
| VA13B-25 LA | 62.8 | 60.2 | 52.7 |
| VA18B-52 LA (Dec.) | 71.5 | 59.9 | 52.2 |
| VA18BFHB-80 LA | 58.7 | 59.1 | 50.9 |
| VA17B-163 LA | 76.3 | 58.7 | 52.8 |
| VA18B-72 LA | 58.1 | 58.3 | 52.1 |
| VA17B-166 LA | 63.5 | 58.0 | 52.5 |
| VA18BFHB-160 LA | 59.6 | 57.7 | 49.2 |
| VA18B-63 LA | 63.8 | 56.3 | 52.3 |
| LCS Violetta | 65.6 | 55.5 | 50.5 |
| KWS Donau | 53.7 | 52.9 | 47.3 - |
| VA19BFHB-10 LA | --- | 52.7 | 51.7 |
| VA18B-33 LA | 55.9 | 52.3 | 50.0 |
| VA18B-43 LA | 64.5 | 51.9 | 51.0 |
| VA18B-50 LA | 59.8 | 51.8 | 52.5 |
| Secretariat | 58.7 | 49.2 | 50.7 |
| VA17B-177 LA | 51.5 | 48.3 | 52.3 |
| KWS Scala | 46.6 - | 47.8 | 45.9 - |
| BC Fay | 57.8 | 45.1 | 48.1 |
| Atlantic | 53.1 | 35.6 - | 50.1 |
| VA16BFHB-268 NA | 63.3 | * | * |
| Wysor | * | * | * |

Table 14. Summary of performance of entries in the Virginia Tech Barley Test, Tidewater AREC, Holland, VA, 2021 harvest, continued.

| Barley Lines | 2-year Av. Yield (Bu/a) | Yield (Bu/a @ 48 lb/bu) | Test Weight (Lb/bu) |
|---------------|-------------------------------|-------------------------------|---------------------------|
| Nomini | * | * | * |
| VA92-42-46 | * | * | * |
| Average | 64.2 | 60.0 | 50.4 |
| LSD (0.05) | 13.6 | 18.9 | 2.5 |
| C.V. | 17.4 | 19.7 | 3.1 |

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.

* Variety was eaten by deer.

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

Table 15. Summary of performance of entries in the Virginia Tech Barley Test, Eastern Shore AREC, Painter, VA, 2021 harvest.

| Barley Lines | Yield (Bu/a @ 48 lb/bu) | Test Weight (Lb/bu) |
|------------------------------|-------------------------------|---------------------------|
| VA18B-39 | 80.5 + | 53.6 |
| VA18B-72 LA | 73.0 + | 52.3 |
| VA17B-166 LA | 71.2 | 53.2 |
| VA17B-177 LA | 69.6 | 52.6 |
| VA18B-52 LA (Dec.) | 69.0 | 52.6 |
| VA18B-43 LA | 67.6 | 51.9 |
| VA18B-34 | 67.2 | 53.6 |
| SB 255 (VA11B-141 LA) | 66.4 | 53.9 + |
| VA18B-33 LA | 65.9 | 53.6 |
| VA18BFHB-157 LA | 64.6 | 53.1 |
| VA19B-20 LA | 63.9 | 52.6 |
| VA18BFHB-160 LA | 63.2 | 50.4 |
| VA18B-63 LA | 62.6 | 54.3 + |
| VA13B-25 LA | 62.5 | 52.5 |
| KWS Donau | 61.4 | 51.7 |
| Hirondella | 61.0 | 51.2 |
| VA17B-163 LA | 60.7 | 54.0 + |
| Atlantic | 60.2 | 50.4 |
| Secretariat | 60.2 | 52.9 |
| KWS Joyau | 58.5 | 51.6 |
| Barsoy | 57.8 | 51.0 |
| BC Fay | 56.1 | 51.1 |
| LCS Calypso | 55.9 | 50.4 |
| VA18BFHB-126 LA | 55.7 | 52.2 |
| VA18B-23 LA | 55.2 | 52.8 |
| VA19BFHB-10 LA | 54.8 | 52.6 |
| Flavia | 54.4 | 51.4 |
| KWS Somerset | 53.4 | 51.1 |
| VA18B-50 LA | 53.0 | 52.9 |
| VA19B-17 LA | 51.4 | 50.2 |
| Thoroughbred | 51.3 | 52.0 |
| VA92-42-46 | 50.0 | 51.1 |
| LCS Violetta | 49.9 | 50.9 |
| VA18BFHB-80 LA | 48.0 | 50.9 |
| KWS Faro | 45.5 | 49.9 |
| BC Clementine | 43.3 | 50.1 |
| KWS Scala | 39.1 - | 47.5 - |
| VA18B-5 LA | 38.0 - | 52.3 |

Table 15. Summary of performance of entries in the Virginia Tech Barley Test, Eastern Shore AREC, Painter, VA, 2021 harvest, continued.

| Barley Lines | Yield (Bu/a @ 48 lb/bu) | Test Weight (Lb/bu) |
|-----------------|-------------------------------|---------------------------|
| VA16BFHB-268 NA | 33.7 - | 45.9 - |
| Nomini | 32.9 - | 43.7 - |
| Wysor | 30.7 - | 50.4 |
| Average | 56.6 | 51.5 |
| LSD (0.05) | 15.6 | 2.2 |
| C.V. | 16.1 | 2.5 |

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

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

NOTE: Two- and three-year data for this location are not being reported because the 2020 field was abandoned.

Table 16. Summary of performance of entries in the Virginia Tech Barley Test, Eastern Virginia AREC, Warsaw, VA, 2021 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) |
|------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------|----------------------------|--------------------------|---------------------------|
| VA19B-20 LA | --- | --- | 136.6 + | 50.2 + | 114 + | 35 | 0.3 - |
| Secretariat | 126.9 + | 144.5 + | 134.4 + | 47.1 | 106 - | 32 | 2.5 + |
| VA17B-163 LA | 123.6 + | 136.8 | 133.5 + | 51.0 + | 108 - | 35 | 1.0 |
| Thoroughbred | 120.2 | 136.5 | 133.1 + | 48.6 | 113 | 36 | 1.8 |
| VA18B-34 | --- | 144.8 + | 131.9 + | 49.8 | 109 - | 32 | 0.8 |
| SB 255 (VA11B-141 LA) | 120.1 | 136.7 | 129.9 + | 49.9 | 112 | 39 + | 0.3 - |
| VA17B-177 LA | 126.2 + | 144.0 + | 127.5 | 51.1 + | 107 - | 31 | 0.8 |
| Hirondella | --- | 141.3 + | 126.8 | 47.5 | 118 + | 32 | 0.3 - |
| VA18B-50 LA | --- | 142.3 + | 126.5 | 49.7 | 108 - | 31 | 1.0 |
| KWS Faro | --- | 152.0 + | 126.2 | 49.0 | 114 + | 32 | 0.0 - |
| VA18B-33 LA | --- | 135.3 | 125.6 | 49.8 | 108 - | 34 | 1.8 |
| Atlantic | 125.5 + | 136.4 | 125.6 | 46.1 | 106 - | 33 | 3.5 + |
| VA19B-17 LA | --- | --- | 124.9 | 46.8 | 113 + | 32 | 0.0 - |
| VA17B-166 LA | 118.9 | 131.5 | 124.1 | 50.7 + | 108 - | 34 | 1.0 |
| VA18B-39 | --- | 141.4 + | 123.6 | 50.1 + | 109 - | 32 | 1.3 |
| VA18B-43 LA | --- | 138.7 + | 123.6 | 49.3 | 110 | 34 | 2.0 |
| VA18BFHB-80 LA | --- | 125.6 | 122.9 | 47.5 | 115 + | 37 | 0.3 - |
| VA18B-52 LA (Dec.) | --- | 135.9 | 121.4 | 49.4 | 109 - | 36 | 1.5 |
| VA13B-25 LA | 115.6 | 131.4 | 120.2 | 49.1 | 106 - | 36 | 1.5 |
| VA18B-72 LA | --- | 127.8 | 119.8 | 49.1 | 109 - | 36 | 1.5 |
| VA18B-5 LA | --- | 132.8 | 119.6 | 46.8 | 112 | 36 | 1.3 |
| VA18B-23 LA | --- | 128.3 | 117.5 | 50.5 + | 111 | 36 | 2.3 + |
| LCS Calypso | 114.5 | 131.6 | 115.9 | 47.7 | 116 + | 27 - | 0.8 |
| VA19BFHB-10 LA | --- | --- | 115.6 | 48.1 | 111 | 35 | 0.8 |
| Nomini | 108.8 - | 125.4 | 115.4 | 46.5 | 106 - | 40 + | 2.0 |
| VA18BFHB-160 LA | --- | 128.0 | 115.4 | 47.6 | 109 - | 36 | 0.8 |
| KWS Joyau | --- | --- | 114.6 | 46.3 | 113 + | 30 - | 0.0 - |
| VA18B-63 LA | --- | 120.5 - | 112.4 | 47.9 | 110 | 36 | 1.0 |
| KWS Donau | --- | 121.0 - | 111.8 | 48.2 | 115 + | 31 | 1.0 |
| VA92-42-46 | 104.9 - | 114.8 - | 111.1 | 47.3 | 107 - | 40 + | 2.5 + |
| BC Fay | --- | 126.6 | 110.4 | 46.6 | 115 + | 29 - | 0.8 |
| KWS Scala | --- | 127.0 | 109.5 | 46.7 | 115 + | 29 - | 1.3 |
| VA16BFHB-268 NA | --- | 117.1 - | 108.5 | 47.1 | 107 - | 42 + | 1.3 |
| VA18BFHB-126 LA | --- | 124.2 | 108.1 | 45.5 - | 113 | 36 | 0.5 |
| Barsoy | 107.0 - | 117.7 - | 106.2 | 46.2 | 107 - | 36 | 2.8 + |
| VA18BFHB-157 LA | --- | 124.2 | 103.1 - | 43.1 - | 112 | 35 | 0.0 - |
| LCS Violetta | 105.1 - | 119.4 - | 103.1 - | 48.1 | 113 + | 30 - | 1.3 |
| Wysor | 104.0 - | 112.6 - | 101.9 - | 46.3 | 110 | 39 + | 3.5 + |

Table 16. Summary of performance of entries in the Virginia Tech Barley Test, Eastern Virginia AREC, Warsaw, VA, 2021 harvest, continued.

| 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) |
|----------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------|----------------------------|--------------------------|---------------------------|
| Flavia | --- | 119.8 - | 101.1 - | 48.7 | 116 + | 27 - | 0.0 - |
| KWS Somerset | --- | 121.5 - | 97.0 - | 45.8 - | 118 + | 30 - | 0.3 - |
| BC Clementine | --- | 113.3 - | 85.8 - | 45.4 - | 114 + | 30 - | 0.3 - |
| Average | 115.8 | 130.0 | 117.6 | 48.0 | 111 | 34 | 1.1 |
| LSD (0.05) | 5.5 | 8.1 | 12.3 | 2.0 | 2 | 4 | 0.9 |
| C.V. | 5.8 | 6.2 | 7.1 | 2.9 | 1 | 8 | --- |

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 17. Summary of performance of entries in the Virginia Tech Barley Test, Northern Piedmont Center, Orange, VA, 2021 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) |
|------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------|--------------------------|---------------------------|
| VA17B-166 LA | 119.9 + | 127.6 + | 145.9 + | 53.6 + | 32 | 1.0 |
| VA18B-52 LA (Dec.) | --- | 122.6 | 143.6 + | 53.7 + | 31 | 1.0 |
| VA19B-20 LA | --- | --- | 143.6 + | 52.3 | 33 | 1.3 |
| Thoroughbred | 116.8 + | 126.5 + | 140.2 | 51.9 | 31 | 0.3 |
| VA17B-177 LA | 110.3 + | 120.1 | 137.6 | 52.7 | 29 - | 0.8 |
| VA18BFHB-80 LA | --- | 117.7 | 136.8 | 54.2 + | 36 + | 0.3 |
| VA18B-34 | --- | 123.5 | 136.4 | 52.7 | 31 | 0.8 |
| Atlantic | 103.1 | 123.2 | 135.8 | 51.8 | 28 - | 1.0 |
| VA17B-163 LA | 115.3 + | 121.6 | 135.6 | 53.1 | 30 | 1.0 |
| VA18B-72 LA | --- | 117.3 | 133.7 | 53.8 + | 31 | 1.0 |
| VA18B-43 LA | --- | 119.1 | 130.5 | 52.6 | 32 | 0.5 |
| VA18B-39 | --- | 114.2 | 130.1 | 52.2 | 29 - | 0.8 |
| SB 255 (VA11B-141 LA) | 99.8 | 114.0 | 129.9 | 53.5 | 35 + | 0.0 |
| VA13B-25 LA | 104.2 | 112.6 | 129.7 | 53.6 + | 31 | 1.5 |
| VA18B-50 LA | --- | 115.7 | 129.4 | 52.8 | 30 | 0.5 |
| VA18B-23 LA | --- | 121.1 | 129.1 | 52.6 | 34 | 2.0 + |
| VA18B-33 LA | --- | 112.5 | 128.7 | 53.6 + | 31 | 0.8 |
| Hirondella | --- | 119.0 | 127.9 | 50.2 - | 30 | 0.3 |
| KWS Donau | --- | 107.8 | 127.9 | 52.0 | 31 | 0.0 |
| VA18BFHB-160 LA | --- | 117.4 | 126.4 | 51.9 | 35 + | 0.0 |
| Secretariat | 103.0 | 114.3 | 125.8 | 52.3 | 28 - | 0.0 |
| LCS Calypso | 98.0 | 118.5 | 124.4 | 52.3 | 33 | 0.0 |
| Flavia | --- | 117.1 | 124.1 | 52.9 | 31 | 0.5 |
| VA18B-5 LA | --- | 111.5 | 123.7 | 54.7 + | 34 | 0.5 |
| VA19BFHB-10 LA | --- | --- | 123.0 | 52.7 | 33 | 0.8 |
| VA18BFHB-157 LA | --- | 111.8 | 120.8 | 54.0 + | 33 | 0.0 |
| Nomini | 92.3 | 106.8 | 120.5 | 48.9 - | 36 + | 1.3 |
| VA16BFHB-268 NA | --- | 111.8 | 118.3 | 50.2 - | 39 + | 1.3 |
| VA18B-63 LA | --- | 106.3 | 117.0 | 53.5 | 36 + | 0.0 |
| VA19B-17 LA | --- | --- | 115.3 | 52.5 | 31 | 0.0 |
| Wysor | 92.9 | 108.9 | 114.9 | 49.0 - | 36 + | 2.5 + |
| KWS Faro | --- | 115.9 | 113.0 | 50.6 - | 29 - | 0.0 |
| KWS Somerset | --- | 103.7 | 112.0 | 51.9 | 32 | 0.0 |
| VA18BFHB-126 LA | --- | 108.5 | 111.1 | 52.9 | 32 | 0.5 |
| KWS Scala | --- | 106.0 | 108.1 | 51.0 | 28 - | 0.3 |
| VA92-42-46 | 82.1 - | 94.9 - | 107.9 | 49.4 - | 36 + | 1.0 |
| KWS Joyau | --- | --- | 106.4 - | 51.1 | 27 - | 0.0 |
| LCS Violetta | 86.3 - | 99.6 - | 104.1 - | 53.6 + | 30 | 0.8 |

Table 17. Summary of performance of entries in the Virginia Tech Barley Test, Northern Piedmont Center, Orange, VA, 2021 harvest, continued.

| 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) |
|----------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------|--------------------------|---------------------------|
| BC Fay | --- | 104.2 | 101.2 - | 50.9 - | 28 - | 0.0 |
| Barsoy | 85.7 - | 98.2 - | 101.0 - | 52.4 | 30 | 1.0 |
| BC Clementine | --- | 97.9 - | 92.7 - | 51.9 | 29 - | 0.0 |
| Average | 100.7 | 113.2 | 123.5 | 52.3 | 32 | 0.6 |
| LSD (0.05) | 9.1 | 12.0 | 16.7 | 1.3 | 2 | 1.1 |
| C.V. | 9.8 | 9.7 | 8.9 | 1.6 | 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 18. Summary of performance of entries in the Virginia Tech Barley Test, Kentland Farm, Blacksburg, VA, 2021 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) |
|------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------|----------------------------|--------------------------|
| VA18B-50 LA | --- | 100.9 | 136.8 + | 53.9 + | 110 - | 29 |
| VA17B-166 LA | 105.2 | 96.8 | 133.5 + | 54.2 + | 112 - | 30 |
| Thoroughbred | 114.5 + | 107.3 + | 132.2 | 52.0 | 117 + | 29 |
| VA17B-163 LA | 103.6 | 97.3 | 131.9 | 53.5 + | 111 - | 30 |
| VA18BFHB-80 LA | --- | 106.9 + | 131.9 | 53.5 + | 117 | 32 + |
| VA17B-177 LA | 103.5 | 103.2 | 131.5 | 53.0 | 112 - | 28 |
| VA19BFHB-10 LA | --- | --- | 131.5 | 53.3 + | 114 | 30 |
| VA18B-39 | --- | 101.5 | 131.4 | 52.5 | 114 | 29 |
| VA18B-34 | --- | 105.8 + | 128.4 | 52.6 | 114 | 29 |
| VA18B-23 LA | --- | 101.2 | 128.0 | 53.0 | 114 | 32 + |
| VA13B-25 LA | 100.7 | 95.7 | 127.7 | 53.2 | 112 - | 29 |
| Atlantic | 106.0 | 99.7 | 126.2 | 52.4 | 109 - | 30 |
| VA19B-20 LA | --- | --- | 125.5 | 51.8 | 119 + | 29 |
| Secretariat | 110.6 + | 102.6 | 125.5 | 51.4 | 110 - | 29 |
| KWS Faro | --- | 108.6 + | 124.2 | 51.5 | 119 + | 27 |
| Hirondella | --- | 112.1 + | 124.0 | 49.5 - | 122 + | 28 |
| VA18B-52 LA (Dec.) | --- | 97.9 | 121.3 | 54.3 + | 112 - | 30 |
| LCS Calypso | 104.9 | 110.2 + | 119.6 | 52.0 | 121 + | 27 - |
| VA18B-33 LA | --- | 99.3 | 119.3 | 54.0 + | 113 - | 30 |
| VA18B-5 LA | --- | 102.8 | 118.6 | 53.7 + | 117 | 31 + |
| VA18B-43 LA | --- | 95.0 | 117.1 | 53.4 + | 115 | 30 |
| VA18B-72 LA | --- | 91.3 | 116.3 | 53.2 | 114 | 28 |
| VA18BFHB-160 LA | --- | 92.6 | 114.6 | 52.2 | 114 | 31 + |
| BC Fay | --- | 103.0 | 112.3 | 50.5 - | 120 + | 24 - |
| VA92-42-46 | 81.1 - | 83.0 - | 112.3 | 51.2 | 113 - | 34 + |
| Wysor | 84.5 - | 85.0 - | 109.2 | 50.7 - | 114 - | 34 + |
| Nomini | 88.4 - | 85.2 - | 108.8 | 48.7 - | 111 - | 34 + |
| SB 255 (VA11B-141 LA) | 98.2 | 84.2 - | 107.4 | 53.1 | 116 | 32 + |
| VA18BFHB-126 LA | --- | 87.2 | 106.7 | 54.2 + | 117 + | 30 |
| VA16BFHB-268 NA | --- | 75.5 - | 106.2 | 50.2 - | 113 - | 36 + |
| KWS Scala | --- | 99.2 | 105.5 | 49.7 - | 118 + | 23 - |
| Flavia | --- | 105.8 + | 105.5 | 51.8 | 122 + | 22 - |
| VA18B-63 LA | --- | 77.1 - | 104.6 | 52.7 | 112 - | 32 + |
| KWS Joyau | --- | --- | 104.3 | 50.8 - | 118 + | 24 - |
| VA18BFHB-157 LA | --- | 77.0 - | 102.6 | 53.8 + | 116 | 31 |
| VA19B-17 LA | --- | --- | 102.3 | 49.9 - | 118 + | 27 |
| KWS Somerset | --- | 98.7 | 101.1 | 51.4 | 124 + | 25 - |
| KWS Donau | --- | 86.2 - | 100.7 | 51.9 | 121 + | 25 - |

Table 18. Summary of performance of entries in the Virginia Tech Barley Test, Kentland Farm, Blacksburg, VA, 2021 harvest, continued.

| 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) |
|----------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------|----------------------------|--------------------------|
| LCS Violetta | 98.1 | 95.0 | 97.2 - | 53.4 + | 118 + | 24 - |
| Barsoy | 86.8 - | 74.4 - | 96.2 - | 51.2 | 111 - | 31 + |
| BC Clementine | --- | 100.8 | 92.5 - | 51.5 | 119 + | 24 - |
| Average | 99.0 | 95.8 | 116.4 | 52.2 | 115 | 29 |
| LSD (0.05) | 8.0 | 9.6 | 16.3 | 1.0 | 2 | 2 |
| C.V. | 9.7 | 9.8 | 9.6 | 1.3 | 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.

Section 2: Barley Scab Research

One of the primary research objectives of the Virginia Tech barley breeding program is to identify and develop cultivars possessing resistance to Fusarium head blight (FHB) or scab. Each year all barley and hullless barley entries in Virginia's Official State Variety Trials are evaluated for FHB at the Eastern Virginia AREC. 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.

Because of very limited infection in 2020, only data from the 2021 season are available. In 2021, entries were inoculated by spreading scabby corn kernels (50g/4-rows) in plots at the booting stage. A moderate level of FHB infection was obtained in 2021. Among 14 hullless lines and varieties tested in 2021, the FHB index ranged from 0.5 to 2.5 with ISK index ranging from 3.1% to 27.2%. Seven experimental lines and one variety had FHB index values lower than the mean (<1.9) in 2021.

Among 41 barley lines and varieties tested in 2021, the FHB index varied from 0.0 to 6.0 with ISK index ranging from 0.1 to 36.1. Twenty-eight varieties and experimental lines had FHB index values lower than the mean of 2.6. This included 12 released varieties and 16 experimental lines. Data for ISK index matched these results exactly. Two elite malt barley varieties, Violetta and Calypso, developed in Europe, are currently being recommended for production in the mid-Atlantic and the eastern United States. They both had FHB index, % FDK and ISK index values well below the test mean. Two entries, recent Virginia Tech barley release SB 255 and the experimental line VA18B-33 LA, had FHB and ISK indices significantly lower than the test mean.

Table 19. Summary of reaction of entries in the Virginia Tech State Hulless Barley Test to Fusarium head blight (scab), 2021 harvest.

| Line | FHB Index ¹ (0-9) | Flowering Date (Julian) | FDK ² (%) | ISK Index ³ (%) |
|------------------|------------------------------|-------------------------|----------------------|----------------------------|
| Eve | 0.5 | 119.0 | 13.0 | 3.1 |
| VA15H-73 | 0.5 | 121.5 | 5.0 | 3.0 |
| VA15H-11 | 0.5 | 119.5 | 8.5 | 3.0 |
| VA18HFHB-29 WS/B | 1.0 | 120.5 | 15.0 | 6.1 |
| VA16H-27 | 1.5 | 122.5 | 7.5 | 9.0 |
| VA17H-19 | 1.5 | 119.0 | 22.5 | 9.1 |
| VA18HFHB-26 WS | 1.5 | 121.0 | 15.0 | 9.1 |
| VA18HFHB-30 WS | 1.5 | 117.5 | 7.5 | 9.0 |
| VA06H-79 | 2.0 | 119.0 | 10.0 | 12.0 |
| Dan | 2.5 | 122.5 | 12.5 | 15.1 |
| VA16H-160 | 2.5 | 122.0 | 22.5 | 15.1 |
| VA08H-79 WS | 3.0 | 120.0 | 10.0 | 18.1 |
| Amaze 10 | 4.0 | 123.5 | 45.0 + | 24.2 |
| VA07H-35 WS | 4.5 + | 127.0 | 40.0 + | 27.2 + |
| Average | 1.9 | 121.0 | 16.7 | 11.6 |
| LSD (0.05) | 2.5 | 7.8 | 19.2 | 14.8 |
| C.V. | --- | 3.0 | --- | --- |

Released cultivars are shown in bold print.

Varieties are ordered by ascending FHB index averages.

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

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

¹ FHB Index is an overall indicator of scab resistance/susceptibility level and takes into account both incidence and severity where 0 = highly resistant and 9 = highly susceptible.

² FDK (%): Fusarium damaged kernels, visual assessment of the percent of infected kernels.

³ ISK Index takes into account both incidence and severity and is a composite of head and kernel traits; 0 = highly resistant and 100 = highly susceptible.

Table 20. Summary of reaction of entries in the Virginia Tech State Barley Test to Fusarium head blight (scab), 2021 harvest.

| Line | FHB Index ¹ (0-9) | Flowering Date (Julian) | FDK ² (%) | ISK Index ³ (%) |
|------------------------------|------------------------------|-------------------------|----------------------|----------------------------|
| VA18B-33 LA | 0.0 - | 118.0 | 12.5 | 0.1 - |
| SB 255 (VA11B-141 LA) | 0.5 - | 120.0 | 25.0 | 3.1 - |
| LCS Violetta | 1.0 | 119.5 | 30.0 | 6.1 |
| LCS Calypso | 1.0 | 120.0 | 15.0 | 6.1 |
| VA18B-43 LA | 1.0 | 118.5 | 20.0 | 6.1 |
| Barsoy | 1.5 | 117.0 | 20.0 | 9.1 |
| KWS Scala | 1.5 | 120.0 | 35.0 | 9.2 |
| BC Fay | 1.5 | 120.5 | 50.0 + | 9.2 |
| VA18B-63 LA | 1.5 | 118.0 | 11.0 | 9.0 |
| VA18BFHB-80 LA | 1.5 | 120.0 | 15.0 | 9.1 |
| VA18BFHB-160 LA | 1.5 | 117.5 | 6.5 - | 9.0 |
| VA16BFHB-268 NA | 1.5 | 116.5 | 9.0 | 9.0 |
| VA17B-166 LA | 2.0 | 118.5 | 35.0 | 12.2 |
| KWS Somerset | 2.0 | 126.0 + | 47.5 + | 12.2 |
| KWS Donau | 2.0 | 131.5 + | 60.0 + | 12.2 |
| VA18BFHB-126 LA | 2.0 | 119.5 | 12.5 | 12.1 |
| VA18BFHB-157 LA | 2.0 | 118.5 | 15.0 | 12.1 |
| VA18B-5 LA | 2.0 | 118.5 | 11.5 | 12.1 |
| Nomini | 2.5 | 115.0 - | 12.5 | 15.1 |
| VA92-42-46 | 2.5 | 118.5 | 14.0 | 15.1 |
| VA13B-25 LA | 2.5 | 120.5 | 17.5 | 15.1 |
| VA17B-163 LA | 2.5 | 120.0 | 35.0 | 15.2 |
| BC Clementine | 2.5 | 118.5 | 55.0 + | 15.2 |
| VA18B-52 LA (Dec.) | 2.5 | 118.0 | 27.5 | 15.1 |
| Hirondella | 2.5 | 125.0 + | 45.0 + | 15.2 |
| VA18B-23 LA | 2.5 | 121.5 | 35.0 | 15.2 |
| VA19BFHB-10 LA | 2.5 | 118.0 | 15.0 | 15.1 |
| KWS Joyau | 2.5 | 120.0 | 32.5 | 15.1 |
| Thoroughbred | 3.0 | 121.0 | 35.0 | 18.2 |
| VA18B-50 LA | 3.0 | 119.0 | 30.0 | 18.1 |
| VA18B-72 LA | 3.0 | 119.5 | 9.0 | 18.0 |
| VA18B-34 | 3.5 | 120.0 | 11.5 | 21.1 |
| Wysor | 4.0 | 118.5 | 25.0 | 24.1 |
| Flavia | 4.0 | 124.5 + | 35.0 | 24.2 |
| KWS Faro | 4.5 | 119.5 | 25.0 | 27.1 |
| VA18B-39 | 4.5 | 118.5 | 12.0 | 27.0 |
| VA19B-17 LA | 4.5 | 119.0 | 40.0 | 27.2 |
| VA17B-177 LA | 5.5 + | 119.5 | 25.0 | 33.1 + |

Table 20. Summary of reaction of entries in the Virginia Tech State Barley Test to Fusarium head blight (scab), 2021 harvest, continued.

| Line | FHB Index ¹ (0-9) | Flowering Date (Julian) | FDK ² (%) | ISK Index ³ (%) |
|--------------------|------------------------------|-------------------------|----------------------|----------------------------|
| VA19B-20 LA | 5.5 + | 120.5 | 60.0 + | 33.3 + |
| Atlantic | 6.0 + | 118.0 | 22.5 | 36.1 + |
| Secretariat | 6.0 + | 118.0 | 17.5 | 36.1 + |
| Average | 2.6 | 119.7 | 26.0 | 15.9 |
| LSD (0.05) | 2.1 | 3.9 | 18.7 | 12.6 |
| C.V. | --- | 1.6 | --- | --- |

Released cultivars are shown in bold print.

Varieties are ordered by ascending FHB index averages.

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

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

¹ FHB Index is an overall indicator of scab resistance/susceptibility level and takes into account incidence and severity where 0 = highly resistant and 9 = highly susceptible.

² FDK (%): Fusarium damaged kernels, visual assessment of the percent of infected kernels.

³ ISK Index takes into account both incidence and severity and is a composite of head and kernel t 0 = highly resistant and 100 = highly susceptible.

Section 3: Wheat Varieties

Wheat trials were planted in seven-inch rows at Blackstone, Orange, Holland, Painter, and Shenandoah Valley. They were planted in six-inch rows at 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. Nicholas Santantonio, 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 2021, in descending yield order were Dyna-Gro 9002, AgriMAXX 514, USG 3451, USG 3472, Cropland 8045, MAS#86, Dyna-Gro 9120, Dyna-Gro Laverne, MBX 120, USG 3329, Dyna-Gro Shirley, Dyna-Gro 9172, Southern Harvest 9520 and Hilliard. USG 3451 and Dyna-Gro 9120 also had test weight that was significantly higher than the mean of all lines tested. Average yield of all lines tested in 2020-21 was 81.9 bushels per acre, down 7.3 bushels per acres from 2019-20.

Released lines with yields higher than the 3-year statewide mean, in descending yield order, were SY Viper, USG 3329, Pioneer 26R59, MAS #86 and Featherstone 125. SY Viper and Featherstone 125 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 can 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 2021 harvest season (All rates are given on a per acre basis.)

Blacksburg - Planted October 7, 2020. Pre-plant fertilizer was 30-60-100-10(S). Site was sprayed with 1.2 oz. Harmony Extra SG® and fertilized with 25 units N using 30% UAN on March 13, 2021. Site was fertilized with 50 units N using 30% UAN + 1 qt Manni-Plex® on April 6, 2021. Harvest occurred June 28, 2021.

Blackstone - Planted October 21, 2020. Pre-plant fertilizer was 500 lb. 6-6-18 on October 20, 2020. Site received 60 lb. N using UAN + 0.5 oz. Harmony Extra XP® March 9, 2021. Site received 60 lb. N using UAN + 4 oz. Mustang® Maxx on April 9, 2021. Harvest occurred June 17, 2021.

Warsaw - Planted October 24, 2020. Lime was applied at 1 ton October 8, 2020. Pre-plant fertilizer was 30-60-60-12 applied October 7, 2020. Site was fertilized using 12-0-0-1.5 at 25 lb. on December 10, 2020 and again on January 30, 2021. Harmony Extra SG® was applied at .9 oz. with surfactant on December 11, 2020. Quelex® at 0.75 oz. + surfactant was applied March 9, 2021. Harvest occurred June 17, 2021.

Painter - Planted October 22-23, 2020. Pre-plant fertilizer was 60 lb. N using 30% UAN on October 21, 2020. Application of .75 oz. Harmony Extra SG® + 80 lb. N using 30% UAN was on March 23, 2021. Harvest occurred June 16, 2021.

Holland - Planted October 22, 2020. Fertilizer was applied at 370 lb. 8-21-32 + 1000 lb. lime on October 18, 2020. Site was fertilized with 24 gal. 24-0-0-3 + 0.75 oz. Harmony Extra SG® on January 14, 2021 and again with 24 gal. 24-0-0-3 on April 6, 2021. Osprey® was applied at 4.75 oz. on March 15, 2021. Harvest occurred June 8, 2021.

Orange - Planted October 15, 2020. Pre-plant fertilizer was 282 lb. 30-80-60 October 13, 2020. Forty lb. N was applied February 17, 2021. Eighty lb. N plus 0.5 oz. Harmony Extra SG® was applied March 15, 2021. A second application of 0.5 oz. Harmony Extra SG® was applied March 29, 2021. Harvest occurred June 23, 2021.

Shenandoah Valley - Planted on November 4, 2020. Pre-plant fertilizer was 1.5 tons poultry litter. Fifty units N were applied on March 4, 2021. Harvest occurred on July 6, 2021.

Entries in 2020-21 Virginia Wheat Test, arranged by company.

| Company | Line | Seed Treatment reported by company |
|--|--|--|
| AgriMAXX Wheat Company 7167 Highbanks Road Mascoutah, IL 62258 | AgriMAXX 473 | Prime ST Standard = Cruiser 5fs + Maxim 4FS + Vibrance Extreme |
| | AgriMAXX 492 | 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 513 | Prime ST Standard = Cruiser 5fs + Maxim 4FS + Vibrance Extreme |
| | AgriMAXX 514 | Prime ST Standard = Cruiser 5fs + Maxim 4FS + Vibrance Extreme |
| | AgriMAXX 516 | Prime ST Standard = Cruiser 5fs + Maxim 4FS + Vibrance Extreme |
| | AgriMAXX Exp 2002 | Prime ST Standard = Cruiser 5fs + Maxim 4FS + Vibrance Extreme |
| | AgriMAXX EXP 2019 HRW | Prime ST Standard = Cruiser 5fs + Maxim 4FS + Vibrance Extreme |
| AgriMAXX EXP 2020 HRW | Prime ST Standard = Cruiser 5fs + Maxim 4FS + Vibrance Extreme | |
| Corteva Agriscience 974 Centre Road, Chestnut Run Plaza Bldg. 735 Wilmington, DE 19805 | Pioneer 26R36 | Dividend Extreme® |
| | Pioneer 26R45 | Dividend Extreme® |
| | Pioneer 26R59 | Dividend Extreme® |
| Eddie Mercer AgriServices, Inc 6900 Linganore Road Frederick, MD 21702 | MBX 127 | Cruiser MAXX® + Vibrance Extreme Cereals |
| | MBX 176 | Cruiser MAXX® + Vibrance Extreme Cereals |
| | MBX 17-M-245 | Cruiser MAXX® + Vibrance Extreme Cereals |
| | MBX 223 | Cruiser MAXX® + Vibrance Extreme Cereals |
| | MBX 246 | Cruiser MAXX® + Vibrance Extreme Cereals |
| | MBX 120 | Cruiser MAXX® + Vibrance Extreme Cereals |
| | MBX 242 | Cruiser MAXX® + Vibrance Extreme Cereals |
| Erwin-Keith, Inc. (Progeny) 1529 Hwy 193 Wynne, AR 72396 | Progeny #BERKELEY | Evergol, Gaucho |
| | Progeny #BULLET | Evergol, Gaucho |
| | Progeny #BUSTER | Evergol, Gaucho |
| | Progeny #CHAD | Evergol, Gaucho |
| | PGX 19-10 | Evergol, Gaucho |
| | PGX 20-2 | Evergol, Gaucho |
| Featherstone Seed Inc. 13941 Genito Road, Amelia, VA 23002 | Featherstone 125 | Vibrance Extreme |
| University of Florida 3105 McCarty Hall B Gainesville, FL 32611 | FLLA11004-7 | untreated |
| | FL14167LDH-158 | untreated |
| | FLLA10033C-6 | untreated |
| University of Georgia (SUNGRAINS) 1109 Experiment Street Griffin, GA 30223 | GA10127-18LE26 | Dividend Extreme® |
| | GA15VDH-FHB-MAS23-18LE43F | Dividend Extreme® |
| | GA15VDH-FHB-MAS30-18ESc43F | Dividend Extreme® |

Entries in 2020-21 Virginia Wheat Test, arranged by company, continued.

| | | |
|---|----------------------|----------------------------------|
| GROWMARK, Inc. (FS Wheat) 1701 Towanda Avenue Bloomington, IL 61722 | FS 601 | Cruiser MAXX® + Vibrance |
| | FS 624 | Cruiser MAXX® + Vibrance |
| | FS WX21B | Cruiser MAXX® + Vibrance |
| | FS 878 | Dividend Extreme® |
| | FS 891 | Dividend Extreme® |
| KWS Cereals 495 County Road 1300 N Champaign, IL 61822 | FS 875 | Dividend Extreme® |
| | KWS263 | Cruiser® 5FS + Vibrance Extreme |
| | KWS340 | Cruiser® 5FS + Vibrance Extreme |
| Local Seed Company LLC 802 Rozelle Street Memphis, TN 38104 | KWS380 | Cruiser® 5FS + Vibrance Extreme |
| | LW2068 | Radius Wheat |
| | LW2148 | Radius Wheat |
| | LW2169 | Radius Wheat |
| Meherrin Ag & Chemical (Southern Harvest) 4136 Severn Road Severn, NC 27877 | LW2848 | Radius Wheat |
| | LW2958 | Radius Wheat |
| | SH 4400 | Vibrance Extreme + Super Symcoat |
| | SH 7200 | Vibrance Extreme + Super Symcoat |
| | SH 9310 | Vibrance Extreme + Super Symcoat |
| Mid-Atlantic Seeds 204 St. Charles Way #163E York, PA 17402 | SH 9520 | Vibrance Extreme + Super Symcoat |
| | MAS #2 | MAS Proshield |
| | MAS #67 | MAS Proshield |
| | MAS #86 | MAS Proshield |
| | MAS #106 | MAS Proshield |
| | MAS #133 | MAS Proshield |
| | MAS #139 | MAS Proshield |
| | MAS #143 | MAS Proshield |
| MAS #316 | MAS Proshield | |
| North Carolina State University (SUNGRAINS) 840 Method Road Unit 3 Raleigh, NC 27695-7629 | NC11546-14 | untreated |
| | NC12164-97T | untreated |
| | NC12164-200T | untreated |
| | NC12642-81 | untreated |
| Nutrien Ag Solutions 15277 Richmond-Tappahannock Highway St Stephens Church, VA 23148 | Dyna-Gro 9002 | Foothold Virock + Awaken ST |
| | Dyna-Gro 9070 | Cruiser MAXX® + Vibrance |
| | Dyna-Gro 9120 | Foothold Virock + Awaken ST |
| | Dyna-Gro 9151 | Foothold Virock + Awaken ST |

Entries in 2020-21 Virginia Wheat Test, arranged by company, continued.

| | | |
|---|-------------------------|---|
| | Dyna-Gro 9172 | Foothold Virock + Awaken ST |
| | Dyna-Gro Laverne | Foothold Virock + Awaken ST |
| | Dyna-Gro Shirley | Foothold Virock + Awaken ST |
| | Dyna-Gro WX20734 | Foothold Virock + Awaken ST |
| | Dyna-Gro WX20738 | Foothold Virock + Awaken ST |
| | Dyna-Gro WX21741 | Cruiser MAXX® + Vibrance |
| Syngenta (AgriPro) 14031 Trestle Road Highland, IL 62249 | SY 007 | Cruiser® 5FS + Vibrance Extreme |
| | SY 100 | Cruiser® 5FS + Vibrance Extreme |
| | SY 547 | Cruiser® 5FS + Vibrance Extreme |
| | SY 576 | Cruiser® 5FS + Vibrance Extreme |
| | SY Richie | Cruiser® 5FS + Vibrance Extreme |
| | SY Viper | Cruiser® 5FS + Vibrance Extreme |
| | SREXP117 | Cruiser® 5FS + Vibrance Extreme |
| UniSouth Genetics, Inc. 3205-C Highway 46S Dickson, TN 37055 | USG 3118 | USG Genetics trt: ipconazole, metalaxyl, imidacloprid |
| | USG 3230 | USG Genetics trt: ipconazole, metalaxyl, imidacloprid |
| | USG 3232 | USG Genetics trt: ipconazole, metalaxyl, imidacloprid |
| | USG 3316 | USG Genetics trt: ipconazole, metalaxyl, imidacloprid |
| | USG 3329 | USG Genetics trt: ipconazole, metalaxyl, imidacloprid |
| | USG 3451 | USG Genetics trt: ipconazole, metalaxyl, imidacloprid |
| | USG 3472 | USG Genetics trt: ipconazole, metalaxyl, imidacloprid |
| | USG 3536 | USG Genetics trt: ipconazole, metalaxyl, imidacloprid |
| | USG 3562 | USG Genetics trt: ipconazole, metalaxyl, imidacloprid |
| | USG EXP 3000 | USG Genetics trt: ipconazole, metalaxyl, imidacloprid |
| VIPG, LLC 5500 Salem Run Road Charles City, VA 23030 | Hardy 2519 | Proshield Extra |
| | VA14-HRW41 | untreated |
| Virginia Tech and the Virginia Crop Improvement Association 9142 Atlee Station Road Mechanicsville, VA 23111 | 13VTK429-3 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | 13VTK59-55 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | 14VDH-HRW02-029 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | 14VDH-SRW14-150 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | 15VDH-FHB-MAS25-15 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | 15VDH-FHB-MAS33-13 | 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 |

Entries in 2020-21 Virginia Wheat Test, arranged by company, continued.

| | | |
|----------------------------------|-----------------------|-------------------------------------|
| | 15VTK-1-101 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | 16VDH-SRW03-018 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | 16VDH-SRW03-023 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | 16VDH-SRW05-205 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | 16VDH-SRW09-025 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | 16VTK19-201 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | 17VDH-SRW03-143 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | 17VDH-SRW05-170 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | DH13SRW022-216 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | DH13SRW022-23 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | DH15SRW65-53 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | DH15SRW67-151 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | DH16-SRW120-064 | 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 |
| | VA17W-74 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | VA17W-75 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | VA19FHB-05 | Raxil-MD Pro, Gaucho 600 |
| | VA19W-24 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | VA19W-29 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | VA19W-31 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | VA19W-79 | Provoke, Raxil-MD Pro, Gaucho 600 |
| | VA19W-89 | Provoke, Raxil-MD Pro, Gaucho 600 |
| Winfield United | CROPLAN CP8118 | Warden Cereals II + Resonate 480 ST |
| 1080 County Road F West, MS 5850 | CROPLAN CP8045 | Warden Cereals II + Resonate 480 ST |
| Shoreview, MN 55126-2910 | CPX91221 | Warden Cereals II + Resonate 480 ST |

Released cultivars are shown in bold print.

Table 21. Summary of performance of entries in the Virginia Tech Wheat Test over location, 2021 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) | Barley Yellow Dwarf Virus (0-9) | FHB Index ¹ (0-9) |
|-------------------------|--------------------|---------------------|----------------------|--------------------|---------------------|-----------------|----------------------|---------------------------------|------------------------------|
| | (7) | (7) | (2) | (3) | (2) | (1) | (1) | (2) | (1) |
| USG EXP 3000 | 90.8 + | 59.5 + | 125 | 33 | 0.1 | 0.0 | 0.0 | 2.0 | 2.0 |
| Dyna-Gro 9002 | 89.1 + | 57.7 - | 125 | 34 | 0.0 | 2.5 | 0.0 | 0.0 | 2.0 |
| AgriMAXX 514 | 88.8 + | 57.4 - | 125 | 33 | 0.0 | 2.5 | 0.0 | 4.0 + | 1.0 |
| USG 3451 | 88.7 + | 59.8 + | 123 - | 34 + | 0.3 | 0.0 | 0.0 | 0.0 | 5.0 + |
| 15VDH-FHB-MAS38-01 | 88.6 + | 58.1 - | 120 - | 31 - | 0.4 | 0.0 | 0.0 | 0.0 | 1.5 |
| CPX91221 | 88.6 + | 60.0 + | 125 + | 33 | 0.2 | 3.0 | 0.8 + | 1.3 | 4.5 |
| VA19FHB-05 | 88.3 + | 59.4 + | 123 - | 35 + | 0.0 | 3.5 + | 0.0 | 0.0 | 1.5 |
| USG 3472 | 88.0 + | 58.4 - | 125 + | 34 | 0.0 | 2.5 | 0.0 | 0.0 | 1.0 |
| CP8045 | 87.9 + | 58.4 - | 125 + | 33 | 0.0 | 3.0 | 0.0 | 0.7 | 1.0 |
| MAS #86 | 87.6 + | 57.2 - | 124 | 35 + | 0.3 | 4.5 + | 0.0 | 2.0 | 1.0 |
| Dyna-Gro 9120 | 87.6 + | 60.4 + | 123 - | 32 - | 0.1 | 2.5 | 0.0 | 2.7 | 3.0 |
| Progeny #CHAD | 87.5 + | 57.9 - | 124 | 31 - | 1.3 + | 0.0 | 0.0 | 0.7 | 4.0 |
| VA19W-29 | 87.5 + | 58.7 | 124 | 34 | 0.0 | 2.5 | 0.0 | 2.7 | 3.0 |
| VA19W-79 | 87.2 + | 59.2 | 122 - | 35 + | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 |
| 14VDH-SRW14-150 | 86.8 + | 58.8 | 122 - | 34 | 0.0 | 0.0 | 0.0 | 2.0 | 4.5 |
| MAS1407-056-6-3 | 86.8 + | 59.9 + | 126 + | 35 + | 0.0 | 0.0 | 0.1 | 0.0 | 1.5 |
| Dyna-Gro Laverne | 86.8 + | 58.5 | 121 - | 28 - | 0.0 | 0.3 | 0.0 | 0.0 | 6.0 + |
| MBX 120 | 86.6 + | 59.1 | 128 + | 33 | 0.0 | 1.5 | 0.0 | 3.3 | 2.0 |
| USG 3329 | 86.5 + | 58.2 - | 124 - | 34 | 0.2 | 4.0 + | 0.0 | 0.7 | 2.0 |
| Dyna-Gro WX20734 | 86.5 + | 58.7 | 128 + | 33 | 0.0 | 1.5 | 0.0 | 3.3 | 3.5 |
| VA17W-75 | 86.3 + | 59.7 + | 119 - | 33 | 0.5 + | 0.0 | 0.0 | 2.0 | 1.5 |
| Dyna-Gro Shirley | 86.2 + | 57.6 - | 125 | 32 - | 0.0 | 0.8 | 0.0 | 1.3 | 6.0 + |
| Dyna-Gro 9172 | 86.2 + | 58.4 - | 125 | 33 | 0.0 | 2.0 | 0.0 | 2.0 | 1.5 |
| 16VTK19-201 | 86.0 + | 59.6 + | 122 - | 34 | 0.0 | 0.5 | 0.0 | 0.7 | 1.0 |
| DH16-SRW120-064 | 86.0 + | 59.5 + | 125 | 30 - | 0.0 | 0.3 | 0.0 | 0.7 | 4.0 |
| SH 9520 | 86.0 + | 59.1 | 128 + | 33 | 0.0 | 1.5 | 0.0 | 2.7 | 3.5 |
| Hilliard | 85.9 + | 58.7 | 124 | 35 + | 0.0 | 0.3 | 0.0 | 1.3 | 2.5 |

Table 21. Summary of performance of entries in the Virginia Tech Wheat Test over location, 2021 harvest, continued.

| 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) | Barley Yellow Dwarf Virus (0-9) | FHB Index ¹ (0-9) |
|----------------------|--------------------|---------------------|----------------------|--------------------|---------------------|-----------------|----------------------|---------------------------------|------------------------------|
| | (7) | (7) | (2) | (3) | (2) | (1) | (1) | (2) | (1) |
| 16VDH-SRW03-023 | 85.7 | 58.3 - | 124 | 34 + | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 |
| Pioneer 26R59 | 85.6 | 58.6 | 124 | 29 - | 0.0 | 2.5 | 0.0 | 2.7 | 6.5 + |
| PROGENY 19-10 | 85.6 | 57.4 - | 126 + | 32 - | 0.0 | 2.0 | 0.0 | 2.0 | 1.5 |
| LW2169 | 85.5 | 58.5 | 125 | 32 | 0.0 | 2.0 | 0.3 | 0.0 | 1.0 |
| FS 601 | 85.2 | 57.2 - | 125 | 33 | 0.0 | 2.0 | 0.5 | 1.3 | 3.5 |
| MAS #143 | 85.1 | 58.2 - | 125 + | 33 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 |
| 17VDH-SRW03-143 | 84.7 | 60.9 + | 123 - | 34 | 0.2 | 0.5 | 0.0 | 2.0 | 1.0 |
| 16VDH-SRW09-025 | 84.7 | 58.8 | 124 | 35 + | 0.0 | 0.5 | 0.0 | 0.7 | 3.5 |
| 15VTK-1-101 | 84.6 | 58.7 | 125 + | 29 - | 0.4 | 0.0 | 0.0 | 0.0 | 2.5 |
| 14VDH-HRW02-029 | 84.5 | 59.2 + | 126 + | 33 | 0.1 | 0.3 | 0.0 | 2.0 | 1.5 |
| SY 100 | 84.4 | 56.8 - | 126 + | 32 - | 0.4 | 2.0 | 0.0 | 4.0 + | 5.0 + |
| FS WX21B | 84.3 | 58.3 - | 125 + | 33 | 0.0 | 3.0 | 0.0 | 0.0 | 2.0 |
| 17VDH-SRW05-170 | 84.2 | 58.3 - | 125 + | 32 - | 0.0 | 0.0 | 0.1 | 0.7 | 2.5 |
| DH13SRW022-216 | 84.1 | 59.3 + | 126 + | 34 | 0.1 | 0.5 | 0.0 | 0.7 | 2.0 |
| SY Viper | 84.0 | 59.6 + | 124 - | 36 + | 0.6 + | 3.0 | 0.0 | 0.0 | 4.5 |
| DH13SRW022-23 | 84.0 | 59.1 | 126 + | 33 | 0.0 | 0.3 | 0.0 | 0.0 | 2.5 |
| AgriMAXX 492 | 84.0 | 60.1 + | 123 - | 33 | 0.3 | 0.0 | 0.0 | 0.0 | 3.5 |
| 15VDH-FHB-MAS33-13 | 83.9 | 59.0 | 125 | 33 | 0.2 | 0.0 | 0.0 | 0.7 | 1.0 |
| DH15SRW65-53 | 83.9 | 59.9 + | 125 + | 30 - | 0.0 | 0.0 | 0.0 | 0.7 | 4.0 |
| AgriMAXX 513 | 83.8 | 58.7 | 125 | 33 | 0.1 | 2.0 | 0.0 | 2.0 | 1.5 |
| MAS #316 | 83.8 | 57.9 - | 126 + | 35 + | 0.0 | 3.5 + | 0.0 | 4.0 + | 0.5 - |
| 16VDH-SRW03-018 | 83.8 | 60.3 + | 123 - | 34 | 0.2 | 0.0 | 0.0 | 0.7 | 2.0 |
| 15VDH-FHB-MAS25-15 | 83.6 | 59.1 | 123 - | 32 - | 0.0 | 0.0 | 0.0 | 0.7 | 1.5 |
| PROGENY PGX 20-2 | 83.6 | 61.1 + | 123 - | 34 | 0.6 + | 2.5 | 0.0 | 1.3 | 4.5 |
| Dyna-Gro 9151 | 83.6 | 59.9 + | 125 + | 33 | 0.0 | 4.0 + | 0.0 | 4.0 + | 2.0 |
| 13VTK59-55 | 83.5 | 59.8 + | 124 | 33 | 0.0 | 0.0 | 0.0 | 0.0 | 3.5 |
| AgriMAXX 516 | 83.5 | 58.4 - | 125 + | 32 | 0.0 | 3.5 + | 0.0 | 1.3 | 1.0 |

Table 21. Summary of performance of entries in the Virginia Tech Wheat Test over location, 2021 harvest, continued.

| 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) | Barley Yellow Dwarf Virus (0-9) | FHB Index ¹ (0-9) |
|-------------------------|--------------------|---------------------|----------------------|--------------------|---------------------|-----------------|----------------------|---------------------------------|------------------------------|
| | (7) | (7) | (2) | (3) | (2) | (1) | (1) | (2) | (1) |
| 13VTK429-3 | 83.4 | 59.8 + | 125 + | 34 | 0.0 | 0.0 | 0.0 | 0.7 | 2.0 |
| Dyna-Gro WX21741 | 83.4 | 58.6 | 125 | 35 + | 0.0 | 2.5 | 0.0 | 2.0 | 1.0 |
| VA17W-74 | 83.3 | 59.8 + | 119 - | 34 | 0.5 + | 0.0 | 0.0 | 2.0 | 2.0 |
| AgriMAXX 473 | 83.2 | 57.9 - | 125 | 34 | 0.0 | 0.0 | 0.0 | 3.3 | 2.5 |
| KWS340 | 83.1 | 59.3 + | 126 + | 33 | 0.2 | 0.0 | 0.5 | 2.0 | 2.0 |
| Featherstone 125 | 83.0 | 60.7 + | 126 + | 34 | 0.0 | 0.0 | 0.0 | 0.0 | 1.5 |
| AgriMAXX 505 | 83.0 | 60.2 + | 125 | 34 | 0.1 | 3.5 + | 0.0 | 5.3 + | 2.0 |
| MBX 127 | 82.9 | 58.1 - | 125 + | 33 | 0.0 | 1.5 | 0.0 | 1.3 | 1.5 |
| AgriMAXX 502 | 82.9 | 58.3 - | 124 | 33 | 0.0 | 2.5 | 0.0 | 5.3 + | 2.0 |
| KWS263 | 82.8 | 57.5 - | 126 + | 34 | 0.0 | 0.0 | 0.0 | 0.7 | 2.5 |
| MAS #139 | 82.7 | 57.5 - | 126 + | 31 - | 0.0 | 5.0 + | 0.0 | 2.7 | 2.5 |
| USG 3118 | 82.6 | 59.4 + | 123 - | 31 - | 0.0 | 0.0 | 0.0 | 0.7 | 3.5 |
| DH15SRW67-151 | 82.6 | 58.0 - | 127 + | 31 - | 0.3 | 0.5 | 0.0 | 0.7 | 1.5 |
| USG 3536 | 82.5 | 58.4 | 125 | 34 | 0.1 | 1.3 | 0.3 | 2.7 | 4.0 |
| SY Richie | 82.4 | 58.9 | 122 - | 32 | 0.0 | 0.0 | 0.0 | 0.0 | 6.0 + |
| Progeny #BULLET | 82.4 | 58.2 - | 125 | 35 + | 0.0 | 0.3 | 0.0 | 2.0 | 2.0 |
| Pioneer 26R36 | 82.1 | 58.7 | 126 + | 33 | 0.1 | 0.5 | 0.8 + | 2.0 | 1.0 |
| SH 7200 | 82.0 | 60.0 + | 123 - | 35 + | 0.3 | 0.0 | 0.0 | 4.0 + | 5.5 + |
| MBX 17-M-245 | 81.9 | 57.6 - | 123 - | 32 - | 0.4 | 2.5 | 0.0 | 3.3 | 4.0 |
| Dyna-Gro 9070 | 81.9 | 58.4 - | 124 | 33 | 0.1 | 4.0 + | 0.0 | 2.0 | 1.5 |
| Progeny #BUSTER | 81.5 | 58.9 | 125 + | 33 | 0.0 | 2.0 | 0.0 | 1.3 | 2.0 |
| Liberty 5658 | 81.4 | 59.6 + | 123 - | 34 | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 |
| MBX 246 | 81.3 | 58.9 | 125 + | 34 + | 0.0 | 2.0 | 0.0 | 2.7 | 1.5 |
| FS 875 | 81.3 | 57.6 - | 124 | 34 | 0.3 | 3.5 + | 0.0 | 1.3 | 1.5 |
| SREXP117 | 81.2 | 56.8 - | 123 - | 30 - | 0.1 | 0.8 | 0.0 | 0.0 | 5.0 + |
| SY 007 | 81.2 | 58.4 - | 123 - | 34 | 0.4 | 1.3 | 0.0 | 1.3 | 2.0 |
| USG 3232 | 81.2 | 59.5 + | 122 - | 32 | 0.0 | 0.5 | 0.0 | 0.7 | 2.0 |

Table 21. Summary of performance of entries in the Virginia Tech Wheat Test over location, 2021 harvest, continued.

| 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) | Barley Yellow Dwarf Virus (0-9) | FHB Index ¹ (0-9) |
|-----------------------|--------------------|---------------------|----------------------|--------------------|---------------------|-----------------|----------------------|---------------------------------|------------------------------|
| | (7) | (7) | (2) | (3) | (2) | (1) | (1) | (2) | (1) |
| MBX 223 | 81.2 | 57.8 - | 124 | 33 | 0.3 | 2.5 | 0.0 | 3.3 | 2.0 |
| MAS #133 | 81.1 | 56.1 - | 126 + | 33 | 0.0 | 4.5 + | 0.0 | 3.3 | 3.0 |
| VA19W-89 | 81.0 | 57.9 - | 123 - | 34 | 0.0 | 0.3 | 0.0 | 2.7 | 2.0 |
| Dyna-Gro WX20738 | 81.0 | 58.4 - | 125 | 34 | 0.1 | 0.0 | 0.0 | 4.7 + | 3.0 |
| FS 624 | 80.9 | 58.7 | 126 + | 34 + | 0.0 | 3.5 + | 0.0 | 4.7 + | 3.0 |
| SH 4400 | 80.8 | 59.1 | 127 + | 35 + | 0.2 | 2.0 | 0.8 + | 2.0 | 2.5 |
| CP8118 | 80.7 | 57.3 - | 123 - | 30 - | 0.4 | 0.0 | 0.0 | 1.3 | 4.5 |
| AgriMAXX Exp 2002 | 80.5 | 59.5 + | 122 - | 32 | 0.0 | 0.5 | 0.3 | 0.7 | 3.0 |
| 16VDH-SRW05-205 | 80.5 | 59.1 | 124 | 31 - | 0.0 | 0.0 | 0.0 | 2.0 | 3.0 |
| Pioneer 26R45 | 80.4 | 58.0 - | 124 | 34 | 0.3 | 1.0 | 0.3 | 2.0 | 4.0 |
| USG 3562 | 80.3 | 58.8 | 125 + | 34 | 0.1 | 1.5 | 0.0 | 1.3 | 2.0 |
| USG 3316 | 80.2 | 58.4 - | 126 + | 34 | 0.0 | 6.0 + | 0.0 | 0.7 | 1.0 |
| GA10127-18E26 | 79.9 | 60.0 + | 127 + | 32 | 0.0 | 0.0 | 1.0 + | 0.0 | 2.0 |
| LW2068 | 79.7 | 57.8 - | 125 | 34 | 0.0 | 6.0 + | 0.0 | 2.0 | 1.0 |
| FS 891 | 79.6 | 58.6 | 125 | 33 | 0.0 | 3.0 | 0.0 | 3.3 | 4.0 |
| 15VDH-SRW02-075 | 79.5 | 59.9 + | 126 + | 35 + | 0.1 | 0.0 | 0.0 | 0.7 | 2.5 |
| MAS #67 | 79.4 | 57.1 - | 124 - | 32 - | 0.0 | 1.5 | 0.3 | 1.3 | 3.0 |
| Hardy 2519 | 79.3 | 59.8 + | 124 | 36 + | 0.3 | 0.0 | 0.3 | 1.3 | 3.5 |
| MBX 176 | 79.2 | 57.7 - | 126 + | 33 | 0.0 | 3.5 + | 0.0 | 4.7 + | 1.0 |
| VA19W-31 | 79.2 | 59.7 + | 124 | 33 | 0.6 + | 0.0 | 0.0 | 2.7 | 5.5 + |
| SY 547 | 79.1 | 58.3 - | 123 - | 35 + | 0.2 | 1.0 | 0.0 | 2.0 | 2.0 |
| LW2958 | 78.2 | 59.0 | 125 | 35 + | 0.0 | 2.0 | 0.0 | 1.3 | 1.5 |
| MBX 242 | 77.9 - | 58.6 | 125 | 34 | 0.0 | 0.3 | 0.0 | 3.3 | 1.5 |
| VA14HRW-41 | 77.7 - | 58.6 | 126 + | 35 + | 0.3 | 0.0 | 0.0 | 1.3 | 1.5 |
| AgriMAXX 503 | 77.5 - | 58.7 | 126 + | 34 | 0.5 + | 2.5 | 0.0 | 1.3 | 2.0 |
| USG 3230 | 77.4 - | 57.7 - | 123 - | 33 | 0.2 | 0.8 | 0.0 | 1.3 | 3.5 |
| LW2848 | 77.1 - | 57.9 - | 125 | 34 + | 0.0 | 0.0 | 0.0 | 2.0 | 3.0 |
| AgriMAXX Exp 2019 HRW | 77.0 - | 61.4 + | 127 + | 30 - | 0.0 | 0.5 | 1.0 + | 5.3 + | 5.0 + |

Table 21. Summary of performance of entries in the Virginia Tech Wheat Test over location, 2021 harvest, continued.

| 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) | Barley Yellow Dwarf Virus (0-9) | FHB Index ¹ (0-9) |
|----------------------------|--------------------|---------------------|----------------------|--------------------|---------------------|-----------------|----------------------|---------------------------------|------------------------------|
| | (7) | (7) | (2) | (3) | (2) | (1) | (1) | (2) | (1) |
| SH 9310 | 77.0 - | 60.7 + | 123 - | 32 | 0.1 | 0.0 | 0.0 | 2.0 | 5.0 + |
| VA19W-24 | 77.0 - | 59.3 + | 124 | 33 | 0.0 | 0.3 | 0.0 | 0.7 | 3.5 |
| Progeny #BERKELEY | 76.6 - | 58.7 | 123 - | 32 | 0.1 | 0.5 | 0.0 | 1.3 | 4.5 |
| FS 878 | 76.6 - | 56.9 - | 124 | 32 - | 0.0 | 3.0 | 0.5 | 1.3 | 4.0 |
| GA15VDH-FHB-MAS30-18ESc43F | 76.3 - | 58.5 | 123 - | 31 - | 0.0 | 0.3 | 0.0 | 2.7 | 2.5 |
| MAS #2 | 76.3 - | 59.6 + | 126 + | 38 + | 2.4 + | 1.0 | 0.0 | 2.0 | 1.5 |
| AgriMAXX Exp 2020 HRW | 76.1 - | 60.4 + | 126 + | 31 - | 0.1 | 0.3 | 0.3 | 4.7 + | 5.0 + |
| LW2148 | 75.5 - | 58.4 - | 126 + | 34 | 0.5 + | 4.0 + | 0.0 | 1.3 | 4.0 |
| SY 576 | 75.5 - | 57.5 - | 129 + | 33 | 0.0 | 0.3 | 0.1 | 2.0 | 1.5 |
| KWS380 | 75.4 - | 59.0 | 125 | 32 - | 0.0 | 4.0 + | 0.0 | 2.7 | 2.0 |
| FLLA10033C-6 | 75.0 - | 58.7 | 125 | 35 + | 0.1 | 0.0 | 0.0 | 4.0 + | 2.0 |
| NC12642-81 | 74.4 - | 60.1 + | 122 - | 35 + | 0.0 | 1.5 | 0.0 | 2.0 | 4.5 |
| NC12164-200T | 74.4 - | 60.7 + | 125 | 33 | 0.3 | 0.8 | 0.0 | 1.3 | 4.5 |
| MAS #106 | 74.2 - | 58.6 | 118 - | 32 | 0.8 + | 3.0 | 0.5 | 1.3 | 4.0 |
| FL14167LDH-158 | 73.4 - | 58.9 | 125 | 35 + | 0.1 | 0.0 | 0.0 | 2.0 | 1.0 |
| GA15VDH-FHB-MAS23-18LE43F | 73.4 - | 59.3 + | 126 + | 31 - | 0.0 | 0.0 | 0.0 | 2.0 | 2.5 |
| NC12164-97T | 70.6 - | 60.2 + | 124 | 36 + | 0.7 + | 0.8 | 0.0 | 1.3 | 5.0 + |
| Massey | 70.4 - | 59.1 | 124 | 38 + | 1.2 + | 7.5 + | 0.0 | 1.3 | 0.5 - |
| NC11546-14 | 69.9 - | 60.0 + | 125 | 34 | 0.0 | 0.5 | 0.0 | 2.7 | 2.0 |
| FLLA11004-7 | 67.4 - | 57.9 - | 128 + | 36 + | 0.2 | 0.0 | 0.0 | 1.3 | 4.0 |
| Average | 81.9 | 58.8 | 124 | 33 | 0.1 | 1.4 | 0.1 | 1.7 | 2.7 |
| LSD (0.05) | 3.9 | 0.4 | 1 | 1 | 0.3 | 1.7 | 0.5 | 1.9 | 1.8 |
| C.V. | 8.8 | 1.1 | 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.

¹ FHB (fusarium head blight) Index is an overall indicator of scab resistance/susceptibility; 0 = highly resistant and 9 = highly susceptible.
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Table 22. Two-year average summary of performance of entries in the Virginia Tech Wheat Tests, 2020 and 2021 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) |
|-------------------------|--------------------|---------------------|----------------------|--------------------|---------------------|-----------------|----------------------|------------------------------|----------------|--------------------------------|
| | (13) | (13) | (4) | (6) | (5) | (3) | (3) | (2) | (1) | (2) |
| MAS #143 | 93.3 + | 58.4 | 123 + | 36 | 0.1 | 1.1 | 0.4 | 0.0 | 2.0 - | 1.5 |
| Dyna-Gro 9172 | 92.1 + | 58.4 | 123 + | 36 | 0.3 | 1.3 | 0.6 | 2.0 | 2.0 - | 1.1 |
| LW2169 | 91.7 + | 58.5 | 123 + | 36 | 0.2 | 1.8 | 0.7 | 0.0 | 1.3 - | 1.0 |
| PROGENY PGX 19-10 | 91.0 + | 57.0 - | 124 + | 35 - | 0.0 | 1.8 | 0.0 | 2.0 | 2.7 | 1.0 |
| MAS1407-056-6-3 | 90.8 + | 59.9 + | 123 + | 37 + | 0.1 | 0.4 - | 1.2 + | 0.0 | 2.0 - | 1.9 |
| MBX 127 | 90.6 + | 58.3 | 123 + | 36 | 0.1 | 1.7 | 0.8 | 1.3 | 2.0 - | 1.0 |
| USG 3329 | 90.3 + | 58.2 - | 121 | 36 | 0.5 | 3.6 + | 0.4 | 0.7 | 4.0 | 1.6 |
| 15VDH-FHB-MAS33-13 | 90.2 + | 59.4 + | 121 | 36 | 0.4 | 0.0 - | 1.8 + | 0.7 | 1.3 - | 0.6 - |
| Dyna-Gro 9120 | 89.9 + | 60.1 + | 120 - | 35 - | 0.0 | 1.8 | 0.1 | 2.7 | 2.7 | 1.8 |
| 16VDH-SRW03-023 | 89.7 + | 58.4 | 121 | 37 | 0.0 | 0.0 - | 0.4 | 0.0 | 2.0 - | 3.7 + |
| 14VDH-SRW14-150 | 89.6 + | 58.6 | 119 - | 36 | 0.0 | 0.3 - | 0.2 | 2.0 | 3.3 | 2.9 |
| VA17W-75 | 89.5 + | 59.8 + | 118 - | 36 | 0.5 | 0.0 - | 0.0 | 2.0 | 2.3 | 0.9 |
| 13VTK429-3 | 89.5 + | 59.6 + | 123 + | 37 | 0.0 | 0.1 - | 0.1 | 0.7 | 2.3 | 2.9 |
| DH15SRW65-53 | 89.4 | 59.7 + | 123 + | 33 - | 0.3 | 0.1 - | 0.4 | 0.7 | 3.0 | 3.6 + |
| Progeny #CHAD | 89.1 | 57.9 - | 120 - | 33 - | 1.3 + | 0.1 - | 0.0 | 0.7 | 3.7 | 2.7 |
| MAS #86 | 89.1 | 57.3 - | 122 | 38 + | 0.2 | 2.6 + | 0.2 | 2.0 | 3.0 | 0.9 - |
| MAS #316 | 88.7 | 58.0 - | 124 + | 37 + | 0.0 | 2.6 + | 1.1 + | 4.0 + | 3.0 | 0.7 - |
| AgriMAXX 473 | 88.6 | 58.2 - | 123 + | 37 + | 0.0 | 0.3 - | 0.1 | 3.3 | 2.3 | 2.1 |
| SY Viper | 88.5 | 59.9 + | 119 - | 38 + | 0.6 + | 2.6 + | 0.1 | 0.0 | 3.0 | 2.7 |
| Featherstone 125 | 88.5 | 60.8 + | 122 + | 37 | 0.3 | 0.1 - | 1.4 + | 0.0 | 3.3 | 1.2 |
| 15VDH-FHB-MAS25-15 | 88.4 | 59.6 + | 119 - | 35 - | 0.0 | 0.0 - | 0.9 | 0.7 | 3.3 | 1.0 |
| AgriMAXX 502 | 88.4 | 58.5 | 120 - | 36 | 0.0 | 1.9 | 0.0 | 5.3 + | 3.3 | 1.5 |
| Progeny #BULLET | 88.0 | 58.3 | 123 + | 37 + | 0.3 | 1.0 | 0.2 | 2.0 | 2.7 | 1.7 |
| VA17W-74 | 88.0 | 59.9 + | 118 - | 36 | 0.6 | 0.1 - | 0.0 | 2.0 | 3.3 | 1.5 |
| Dyna-Gro Shirley | 87.9 | 57.2 - | 122 + | 35 - | 0.0 | 0.3 - | 0.0 | 1.3 | 1.7 - | 5.5 + |
| Pioneer 26R45 | 87.8 | 58.2 - | 122 | 37 | 0.4 | 1.0 | 0.3 | 2.0 | 2.7 | 3.4 + |
| 15VDH-FHB-MAS38-01 | 87.7 | 57.6 - | 116 - | 33 - | 0.4 | 0.3 - | 0.2 | 0.0 | 3.7 | 0.8 - |
| Dyna-Gro 9151 | 87.6 | 59.8 + | 123 + | 37 | 0.0 | 4.4 + | 0.4 | 4.0 + | 3.3 | 1.6 |

Table 22. Two-year average summary of performance of entries in the Virginia Tech Wheat Tests, 2020 and 2021 harvests, continued.

| 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) |
|-------------------------|--------------------|---------------------|----------------------|--------------------|---------------------|-----------------|----------------------|------------------------------|----------------|--------------------------------|
| | (13) | (13) | (4) | (6) | (5) | (3) | (3) | (2) | (1) | (2) |
| Progeny #BUSTER | 87.6 | 58.8 | 122 + | 36 | 0.0 | 1.4 | 0.7 | 1.3 | 3.0 | 2.4 |
| MBX 223 | 87.6 | 58.2 - | 121 | 36 | 0.7 + | 2.8 + | 0.2 | 3.3 | 3.7 | 1.6 |
| 13VTK59-55 | 87.4 | 59.6 + | 122 | 35 - | 0.0 | 0.0 - | 0.4 | 0.0 | 1.7 - | 2.9 |
| SY 547 | 87.3 | 58.3 | 121 | 39 + | 0.3 | 0.9 | 0.1 | 2.0 | 3.0 | 2.3 |
| Pioneer 26R59 | 87.3 | 58.6 | 121 | 33 - | 0.0 | 2.2 + | 0.5 | 2.7 | 2.3 | 5.3 + |
| Hilliard | 87.2 | 58.6 | 121 | 38 + | 0.0 | 0.2 - | 0.1 | 1.3 | 3.0 | 1.7 |
| LW2068 | 87.2 | 57.5 - | 122 + | 36 | 0.0 | 4.7 + | 0.2 | 2.0 | 3.0 | 0.9 |
| MAS #133 | 86.9 | 56.2 - | 123 + | 37 | 0.1 | 2.9 + | 0.4 | 3.3 | 3.0 | 2.3 |
| SH 4400 | 86.8 | 59.0 | 124 + | 38 + | 0.1 | 1.8 | 1.5 + | 2.0 | 3.7 | 3.2 |
| Dyna-Gro 9002 | 86.6 | 57.8 - | 122 | 37 + | 0.0 | 2.0 | 1.5 + | 0.0 | 2.7 | 1.9 |
| LW2848 | 86.4 | 58.1 - | 123 + | 37 + | 0.1 | 0.6 | 0.3 | 2.0 | 3.3 | 2.4 |
| MBX 246 | 86.2 | 59.0 + | 122 + | 38 + | 0.1 | 1.9 | 0.5 | 2.7 | 2.7 | 1.0 |
| 16VDH-SRW09-025 | 86.2 | 58.6 | 120 - | 38 + | 0.0 | 0.4 - | 0.2 | 0.7 | 2.0 - | 2.9 |
| USG 3536 | 86.1 | 58.4 | 123 + | 37 + | 0.5 | 0.7 | 0.2 | 2.7 | 3.3 | 2.4 |
| Dyna-Gro 9070 | 86.0 | 58.3 | 121 | 36 | 0.0 | 2.4 + | 0.1 | 2.0 | 2.7 | 1.2 |
| USG 3316 | 85.5 | 58.5 | 123 + | 37 | 0.0 | 4.4 + | 3.0 + | 0.7 | 4.0 | 1.5 |
| AgriMAXX 505 | 85.3 | 59.9 + | 123 + | 36 | 0.2 | 3.6 + | 0.4 | 5.3 + | 4.3 + | 1.3 |
| USG 3118 | 85.1 | 59.8 + | 118 - | 33 - | 0.3 | 0.1 - | 0.4 | 0.7 | 3.3 | 2.3 |
| AgriMAXX 503 | 85.0 | 58.3 | 123 + | 37 + | 0.3 | 1.9 | 1.2 + | 1.3 | 3.3 | 1.3 |
| Liberty 5658 | 85.0 | 59.3 + | 120 - | 37 + | 0.0 | 0.5 | 0.5 | 0.0 | 5.3 + | 1.7 |
| SY Richie | 85.0 | 58.6 | 118 - | 35 - | 0.0 | 0.3 - | 0.3 | 0.0 | 2.3 | 3.9 + |
| MBX 17-M-245 | 84.9 | 57.6 - | 120 - | 35 - | 0.3 | 1.8 | 0.4 | 3.3 | 2.3 | 3.6 + |
| DH13SRW022-23 | 84.8 | 58.7 | 122 + | 34 - | 0.1 | 0.7 | 0.0 | 0.0 | 4.7 + | 2.0 |
| MBX 176 | 84.6 | 57.5 - | 123 + | 36 | 0.2 | 4.3 + | 0.1 | 4.7 + | 3.3 | 0.8 - |
| SY 007 | 84.6 | 58.0 - | 120 - | 37 | 0.2 | 1.4 | 0.3 | 1.3 | 3.3 | 1.3 |
| Dyna-Gro Laverne | 84.6 | 58.4 | 117 - | 30 - | 0.0 | 0.3 - | 0.7 | 0.0 | 4.3 + | 4.1 + |
| SY 576 | 84.4 | 57.6 - | 128 + | 37 + | 0.0 | 0.5 | 1.6 + | 2.0 | 3.7 | 2.0 |
| LW2958 | 83.7 | 58.9 | 123 + | 38 + | 0.0 | 1.9 | 0.2 | 1.3 | 3.3 | 1.2 |

Table 22. Two-year average summary of performance of entries in the Virginia Tech Wheat Tests, 2020 and 2021 harvests, continued.

| 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) |
|--------------------------|--------------------|---------------------|----------------------|--------------------|---------------------|-----------------|----------------------|------------------------------|----------------|--------------------------------|
| | (13) | (13) | (4) | (6) | (5) | (3) | (3) | (2) | (1) | (2) |
| CP8118 | 83.4 | 57.2 - | 119 - | 32 - | 0.4 | 0.1 - | 0.1 | 1.3 | 2.7 | 3.1 |
| 16VDH-SRW05-205 | 82.8 | 58.8 | 121 | 34 - | 0.0 | 0.1 - | 0.0 | 2.0 | 3.0 | 3.1 |
| 15VDH-SRW02-075 | 82.7 | 59.3 + | 123 + | 38 + | 0.1 | 0.1 - | 0.6 | 0.7 | 2.7 | 2.3 |
| EXP 2002 | 82.7 | 59.3 + | 118 - | 36 | 0.1 | 1.3 | 0.6 | 0.7 | 4.0 | 1.6 |
| FL14167LDH-158 | 81.4 - | 58.8 | 121 | 38 + | 0.1 | 0.4 - | 0.3 | 2.0 | 3.0 | 1.1 |
| SH 7200 | 81.4 - | 59.5 + | 118 - | 38 + | 0.7 + | 0.1 - | 0.4 | 4.0 + | 2.3 | 3.4 + |
| USG 3230 | 81.0 - | 57.7 - | 121 | 36 | 0.1 | 1.4 | 0.6 | 1.3 | 3.7 | 3.1 |
| AgriMAXX 492 | 80.8 - | 59.8 + | 118 - | 35 | 0.3 | 0.3 - | 0.0 | 0.0 | 6.7 + | 2.0 |
| FLLA10033C-6 | 80.0 - | 58.0 - | 123 + | 39 + | 0.0 | 0.3 - | 0.7 | 4.0 + | 4.0 | 2.8 |
| Progeny #BERKELEY | 78.9 - | 58.3 | 118 - | 35 - | 0.1 | 0.7 | 0.2 | 1.3 | 4.3 + | 2.6 |
| MAS #67 | 78.7 - | 56.8 - | 121 | 35 - | 0.0 | 1.9 | 1.2 + | 1.3 | 3.3 | 1.8 |
| MAS #106 | 74.1 - | 58.4 | 115 - | 35 - | 0.7 + | 1.8 | 1.9 + | 1.3 | 4.3 + | 2.0 |
| NC11546-14 | 72.3 - | 59.9 + | 121 | 37 | 0.3 | 0.2 - | 0.0 | 2.7 | 4.3 + | 1.3 |
| Massey | 68.2 - | 58.9 | 121 | 40 + | 1.8 + | 7.3 + | 0.1 | 1.3 | 3.0 | 0.7 - |
| Average | 86.0 | 58.6 | 121 | 36 | 0.2 | 1.3 | 0.5 | 1.6 | 3.1 | 2.1 |
| LSD (0.05) | 3.4 | 0.4 | 1 | 1 | 0.4 | 0.8 | 0.5 | 1.9 | 1.1 | 1.2 |
| C.V. | 10.0 | 1.7 | 1 | 4 | --- | --- | --- | --- | --- | --- |

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

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

The 0-9 ratings indicate a genotype's response to 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, ratings taken in 2021.

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 23. Three-year average summary of performance of entries in the Virginia Tech Wheat Tests, 2019, 2020, and 2021 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) |
|-------------------------|--------------------|---------------------|----------------------|--------------------|---------------------|-----------------|----------------------|------------------------------|----------------|--------------------------------|
| | (19) | (19) | (6) | (9) | (10) | (5) | (4) | (3) | (1) | (3) |
| SY Viper | 89.8 + | 59.64 + | 118.5 - | 36.56 + | 0.682 | 2.85 + | 0.046 | 1.17 | 3.0 | 2.3 |
| USG 3329 | 89.4 + | 57.958 - | 120.583 | 35 | 0.477 | 3.77 + | 0.318 | 1.83 | 4.0 | 1.9 |
| VA17W-75 | 89.0 + | 59.451 + | 118.25 - | 35.14 | 0.75 | 0.31 - | 0 - | 2.17 | 2.3 | 0.8 - |
| Pioneer 26R59 | 88.9 + | 58.19 | 120.583 | 31.54 - | 0.209 | 2.92 + | 0.409 | 2.67 | 2.3 | 4.6 + |
| MAS #86 | 88.5 + | 57.117 - | 121.375 + | 36.06 + | 0.432 | 2.69 + | 0.227 | 1.5 | 3.0 | 0.7 - |
| Featherstone 125 | 88.3 + | 60.377 + | 121.75 + | 35.09 | 0.628 | 0.19 - | 1.136 + | 0.5 - | 3.3 | 2.1 |
| 13VTK429-3 | 88.2 + | 59.198 + | 122.333 + | 35.37 | 0.07 | 0.38 - | 0.091 | 0.67 - | 2.3 | 2.7 |
| Progeny #BUSTER | 88.0 + | 58.707 + | 121.5 + | 34.86 | 0 - | 1.46 | 0.546 | 2 | 3.0 | 2.3 |
| VA17W-74 | 87.0 | 59.504 + | 117.75 - | 35.11 | 0.535 | 0.27 - | 0 - | 1.67 | 3.3 | 1.5 |
| Dyna-Gro Shirley | 87.0 | 57.109 - | 121.75 + | 33.38 - | 0.326 | 0.5 - | 0 - | 1.5 | 1.7 - | 4.8 + |
| AgriMAXX 473 | 87.0 | 57.763 - | 122.292 + | 35.83 + | 0.159 | 0.46 - | 0.046 | 2.83 + | 2.3 | 1.7 |
| Pioneer 26R45 | 86.7 | 58.113 | 121.417 + | 35.63 + | 0.767 | 1.15 | 0.546 | 2.5 | 2.7 | 2.4 |
| SY Richie | 86.6 | 58.052 | 117.375 - | 33.82 - | 0.302 | 0.38 - | 0.364 | 0.67 - | 2.3 | 3.6 + |
| Hilliard | 86.6 | 58.273 | 120.208 | 36.54 + | 0.023 | 0.54 - | 0.046 | 1.33 | 3.0 | 1.6 |
| USG 3316 | 86.5 | 58.234 | 122.917 + | 35.11 | 0.256 | 4.31 + | 2.909 + | 1.83 | 4.0 | 1.5 |
| MBX 17-M-245 | 86.4 | 57.454 - | 119.917 - | 33.61 - | 0.296 | 2.31 + | 0.318 | 2.83 + | 2.3 | 3.3 + |
| MAS #316 | 86.4 | 57.727 - | 123.542 + | 36 + | 0.273 | 3.08 + | 1.136 + | 3.33 + | 3.0 | 0.7 - |
| Progeny #BULLET | 85.8 | 57.742 - | 122.542 + | 35.78 + | 0.432 | 1.08 | 0.182 | 2 | 2.7 | 1.3 |
| LW2848 | 85.2 | 57.704 - | 122.75 + | 35.89 + | 0.273 | 0.96 | 0.364 | 1.5 | 3.3 | 1.7 |
| 13VTK59-55 | 85.2 | 59.321 + | 121.167 | 33.5 - | 0.159 | 0.23 - | 0.409 | 0.5 - | 1.7 - | 2.8 |
| Dyna-Gro Laverne | 85.2 | 58.325 | 117.5 - | 29.64 - | 0.136 | 0.38 - | 0.546 | 0.67 - | 4.3 + | 3.2 + |
| DH13SRW022-23 | 85.1 | 58.512 | 122.208 + | 33.6 - | 0.5 | 0.73 - | 0 - | 0.33 - | 4.7 + | 1.5 |
| SY 547 | 84.9 | 58.145 | 120.417 | 36.94 + | 0.605 | 1.08 | 0.046 | 2.5 | 3.0 | 2.0 |
| Liberty 5658 | 84.8 | 59.089 + | 119.333 - | 35.68 + | 0.333 | 0.73 - | 0.409 | 0.5 - | 5.3 + | 1.5 |
| SH 4400 | 84.7 | 58.547 | 123.542 + | 36.46 + | 0.372 | 2.69 + | 1.682 + | 2.5 | 3.7 | 2.9 |
| CP8118 | 84.4 | 57.085 - | 118.75 - | 31.64 - | 0.364 | 0.23 - | 0.091 | 1.17 | 2.7 | 2.7 |
| SY 007 | 84.4 | 58.067 | 118.958 - | 35.2 | 0.233 | 1.58 | 0.273 | 2 | 3.3 | 1.6 |
| LW2958 | 84.3 | 58.663 + | 122 + | 36.49 + | 0.279 | 2 | 0.136 | 2 | 3.3 | 1.2 - |

Table 23. Three-year average summary of performance of entries in the Virginia Tech Wheat Tests, 2019, 2020, and 2021 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) |
|--------------------------|--------------------|---------------------|----------------------|--------------------|---------------------|-----------------|----------------------|------------------------------|----------------|--------------------------------|
| | (19) | (19) | (6) | (9) | (10) | (5) | (4) | (3) | (1) | (3) |
| USG 3118 | 84.1 | 59.361 + | 118.25 - | 32.19 - | 0.25 | 0.23 - | 0.364 | 1.83 | 3.3 | 2.1 |
| USG 3536 | 83.7 | 57.827 - | 122.042 + | 35.5 | 0.571 | 0.81 | 0.182 | 2.5 | 3.3 | 1.7 |
| 15VDH-SRW02-075 | 83.6 | 58.771 + | 122.708 + | 36.28 + | 0.364 | 0.23 - | 0.455 | 0.83 | 2.7 | 2.3 |
| SY 576 | 82.1 - | 57.124 - | 126.625 + | 35.89 + | 0.159 | 0.65 - | 1.955 + | 1.67 | 3.7 | 1.5 |
| Progeny #BERKELEY | 81.3 - | 57.862 - | 118.208 - | 33.91 - | 0.349 | 0.81 | 0.136 | 1.5 | 4.3 + | 2.8 |
| SH 7200 | 80.9 - | 59.006 + | 118.167 - | 35.91 + | 0.721 | 0.31 - | 0.364 | 3.5 + | 2.3 | 4.2 + |
| MAS #67 | 79.9 - | 56.671 - | 120.542 | 33.5 - | 0.205 | 1.92 | 1.046 + | 1.67 | 3.3 | 1.2 |
| MAS #106 | 75.1 - | 58.22 | 115 - | 33.69 - | 0.558 | 2.08 | 2.046 + | 2 | 4.3 + | 1.4 |
| Massey | 69.7 - | 58.804 + | 120.792 | 38.06 + | 1.477 + | 7.23 + | 0.091 | 1.17 | 3.0 | 1.1 - |
| Average | 85.0 | 58.317 | 120.636 | 34.88 | 0.393 | 1.45 | 0.511 | 1.71 | 3.14 | 2.1 |
| LSD (0.05) | 2.7 | 0.3312 | 0.65 | 0.753 | 0.387 | 0.67 | 0.511 | 0.99 | 1.09 | 0.9 |
| C.V. | 9.7 | 1.7389 | 0.95073 | 4.624 | --- | --- | --- | --- | --- | --- |

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 24. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern VA AREC in Warsaw, VA, 2021 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) | Barley Yellow Dwarf Virus (0-9) |
|----------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|----------------------------|--------------------------|---------------------------|-----------------------|----------------------------|---------------------------------------|
| VA17W-75 | 108.5 + | 117.2 + | 111.1 + | 61.1 + | 117 - | 36 | 0.8 + | 0.0 | 0.0 | 1 |
| 15VDH-FHB-MAS38-01 | --- | 116.8 + | 111.0 + | 58.5 - | 116 - | 31 - | 0.3 | 0.0 | 0.0 | 0 |
| CPX91221 | --- | --- | 110.1 + | 60.7 + | 121 + | 34 | 0.3 | 0.8 + | 3.0 | 0 |
| USG 3451 | --- | --- | 108.1 + | 60.6 + | 119 - | 35 | 0.8 + | 0.0 | 0.0 | 0 |
| SREXP117 | --- | --- | 107.8 + | 57.6 - | 120 | 32 - | 0.3 | 0.0 | 0.8 | 0 |
| Progeny #CHAD | --- | 117.6 + | 107.6 + | 59.4 | 119 - | 33 | 2.0 + | 0.0 | 0.0 | 0 |
| 14VDH-SRW14-150 | --- | 114.4 + | 106.4 + | 60.2 | 118 - | 35 | 0.0 | 0.0 | 0.0 | 0 |
| VA17W-74 | 107.4 + | 114.2 + | 106.1 + | 60.6 + | 117 - | 35 | 1.0 + | 0.0 | 0.0 | 1 |
| USG EXP 3000 | --- | --- | 105.9 + | 60.4 + | 121 + | 34 | 0.3 | 0.0 | 0.0 | 0 |
| CP8118 | 104.4 + | 110.5 | 104.9 + | 59.0 - | 118 - | 32 - | 1.0 + | 0.0 | 0.0 | 0 |
| Hilliard | 102.2 + | 109.9 | 104.5 + | 59.9 | 119 - | 36 + | 0.0 | 0.0 | 0.3 | 1 |
| PROGENY PGX 20-2 | --- | --- | 104.4 + | 61.8 + | 119 | 36 + | 1.3 + | 0.0 | 2.5 | 2 |
| SH 7200 | 97.6 | 110.3 | 103.7 + | 60.6 + | 118 - | 37 + | 0.5 | 0.0 | 0.0 | 4 + |
| USG 3232 | --- | --- | 103.7 + | 60.6 + | 117 - | 34 | 0.0 | 0.0 | 0.5 | 0 |
| USG 3329 | 102.5 + | 108.0 | 103.6 + | 59.1 - | 119 - | 35 | 0.5 | 0.0 | 4.0 + | 0 |
| CP8045 | --- | --- | 103.6 + | 59.2 | 121 + | 33 | 0.0 | 0.0 | 3.0 | 0 |
| 15VTK-1-101 | --- | --- | 102.2 | 60.1 | 120 | 30 - | 0.0 | 0.0 | 0.0 | 0 |
| 17VDH-SRW03-143 | --- | --- | 102.1 | 62.2 + | 118 - | 35 | 0.0 | 0.0 | 0.5 | 0 |
| VA19FHB-05 | --- | --- | 102.1 | 60.6 + | 119 - | 36 | 0.0 | 0.0 | 3.5 + | 0 |
| DH13SRW022-23 | 103.3 + | 108.2 | 101.4 | 60.2 | 121 + | 35 | 0.0 | 0.0 | 0.3 | 0 |
| Dyna-Gro 9002 | --- | 106.1 | 101.3 | 57.8 - | 120 | 35 | 0.0 | 0.0 | 2.5 | 0 |
| 15VDH-FHB-MAS33-13 | --- | 114.0 + | 101.2 | 60.2 | 120 | 34 | 0.5 | 0.0 | 0.0 | 0 |
| USG 3472 | --- | --- | 101.2 | 58.6 - | 121 + | 34 | 0.0 | 0.0 | 2.5 | 0 |
| SH 9520 | --- | --- | 101.1 | 59.8 | 123 + | 33 | 0.0 | 0.0 | 1.5 | 2 |
| DH16-SRW120-064 | --- | --- | 100.7 | 60.8 + | 120 | 31 - | 0.0 | 0.0 | 0.3 | 0 |
| DH15SRW67-151 | --- | --- | 100.5 | 58.6 - | 123 + | 33 | 0.8 + | 0.0 | 0.5 | 0 |
| DH13SRW022-216 | --- | --- | 100.2 | 60.4 + | 121 + | 35 | 0.3 | 0.0 | 0.5 | 0 |
| Dyna-Gro 9172 | --- | 107.0 | 100.0 | 59.2 - | 120 | 35 | 0.0 | 0.0 | 2.0 | 2 |
| AgriMAXX 514 | --- | --- | 99.8 | 58.0 - | 120 | 33 | 0.0 | 0.0 | 2.5 | 4 + |

Table 24. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern VA AREC in Warsaw, VA, 2021 harvest, continued.

| 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) | Barley Yellow Dwarf Virus (0-9) |
|----------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|----------------------------|--------------------------|---------------------------|-----------------------|----------------------------|---------------------------------------|
| MBX 120 | --- | --- | 99.8 | 60.1 | 123 + | 34 | 0.0 | 0.0 | 1.5 | 3 |
| LW2169 | --- | 110.4 | 99.6 | 59.1 - | 120 | 34 | 0.0 | 0.3 | 2.0 | 0 |
| 16VTK19-201 | --- | --- | 99.5 | 60.9 + | 119 - | 35 | 0.0 | 0.0 | 0.5 | 0 |
| Dyna-Gro WX21741 | --- | --- | 99.5 | 60.0 | 119 | 35 | 0.0 | 0.0 | 2.5 | 2 |
| 16VDH-SRW03-023 | --- | 113.4 + | 99.5 | 59.4 | 120 | 36 | 0.0 | 0.0 | 0.0 | 0 |
| AgriMAXX 503 | --- | 107.6 | 99.0 | 59.0 - | 120 | 35 | 1.0 + | 0.0 | 2.5 | 0 |
| VA19W-79 | --- | --- | 98.8 | 59.6 | 118 - | 36 + | 0.0 | 0.0 | 0.0 | 0 |
| Pioneer 26R45 | 104.6 + | 112.8 + | 98.8 | 58.3 - | 120 | 35 | 0.5 | 0.3 | 1.0 | 1 |
| AgriMAXX 513 | --- | --- | 98.6 | 59.9 | 119 | 34 | 0.0 | 0.0 | 2.0 | 0 |
| MAS #143 | --- | 109.5 | 98.6 | 59.3 | 120 | 34 | 0.0 | 0.0 | 2.0 | 0 |
| SY 547 | 95.4 | 106.1 | 98.5 | 58.9 - | 119 | 37 + | 0.5 | 0.0 | 1.0 | 1 |
| MAS1407-056-6-3 | --- | 107.4 | 98.2 | 61.4 + | 121 + | 35 | 0.0 | 0.1 | 0.0 | 0 |
| Dyna-Gro WX20734 | --- | --- | 98.2 | 59.6 | 123 + | 33 | 0.0 | 0.0 | 1.5 | 3 |
| 14VDH-HRW02-029 | --- | --- | 98.1 | 60.3 + | 121 + | 34 | 0.3 | 0.0 | 0.3 | 0 |
| USG 3536 | 94.7 | 104.5 | 97.8 | 59.0 - | 120 | 35 | 0.0 | 0.3 | 1.3 | 1 |
| FS 875 | --- | --- | 97.7 | 59.3 | 119 | 35 | 0.8 + | 0.0 | 3.5 + | 2 |
| SY 100 | --- | --- | 97.7 | 56.6 - | 121 + | 33 | 1.0 + | 0.0 | 2.0 | 4 + |
| Dyna-Gro 9120 | --- | 108.9 | 96.6 | 61.4 + | 119 - | 33 | 0.3 | 0.0 | 2.5 | 2 |
| Liberty 5658 | 98.7 | 103.5 | 96.6 | 60.2 | 118 - | 34 | 0.0 | 0.0 | 0.0 | 0 |
| Pioneer 26R59 | 105.4 + | 108.3 | 96.2 | 59.1 - | 120 | 30 - | 0.0 | 0.0 | 2.5 | 2 |
| MAS #86 | 97.9 | 103.7 | 96.1 | 57.5 - | 119 | 35 | 0.0 | 0.0 | 4.5 + | 2 |
| 13VTK59-55 | 99.5 | 107.2 | 96.1 | 61.2 + | 120 | 34 | 0.0 | 0.0 | 0.0 | 0 |
| PROGENY 19-10 | --- | 106.4 | 96.0 | 59.1 - | 121 + | 32 - | 0.0 | 0.0 | 2.0 | 2 |
| AgriMAXX 516 | --- | --- | 95.9 | 58.9 - | 120 | 34 | 0.0 | 0.0 | 3.5 + | 0 |
| AgriMAXX 492 | --- | 104.1 | 95.8 | 61.2 + | 118 - | 33 | 0.5 | 0.0 | 0.0 | 0 |
| 16VDH-SRW09-025 | --- | 107.3 | 95.7 | 59.8 | 119 - | 35 | 0.0 | 0.0 | 0.5 | 0 |
| Dyna-Gro 9070 | --- | 105.4 | 95.5 | 59.5 | 120 | 34 | 0.0 | 0.0 | 4.0 + | 2 |
| FS 624 | --- | --- | 95.4 | 59.6 | 122 + | 36 + | 0.0 | 0.0 | 3.5 + | 5 + |
| DH15SRW65-53 | --- | 108.1 | 95.0 | 61.3 + | 120 | 30 - | 0.0 | 0.0 | 0.0 | 0 |

Table 24. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern VA AREC in Warsaw, VA, 2021 harvest, continued.

| 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) | Barley Yellow Dwarf Virus (0-9) |
|---------------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|----------------------------|--------------------------|---------------------------|-----------------------|----------------------------|---------------------------------------|
| MBX 17-M-245 | 100.9 | 106.8 | 95.0 | 58.4 - | 119 | 33 | 1.0 + | 0.0 | 2.5 | 1 |
| FS WX21B | --- | --- | 95.0 | 59.1 - | 120 | 33 | 0.0 | 0.0 | 3.0 | 0 |
| 16VDH-SRW05-205 | --- | 109.3 | 95.0 | 60.0 | 119 | 32 - | 0.0 | 0.0 | 0.0 | 0 |
| LW2958 | 97.5 | 103.8 | 94.9 | 60.3 + | 120 | 36 | 0.0 | 0.0 | 2.0 | 0 |
| Dyna-Gro Laverne | 98.7 | 104.4 | 94.8 | 58.8 - | 117 - | 28 - | 0.0 | 0.0 | 0.3 | 0 |
| USG 3118 | 98.3 | 105.1 | 94.8 | 60.5 + | 118 - | 32 - | 0.0 | 0.0 | 0.0 | 0 |
| MAS #316 | 96.0 | 103.7 | 94.7 | 58.3 - | 121 + | 36 | 0.0 | 0.0 | 3.5 + | 4 + |
| VA19W-89 | --- | --- | 94.6 | 59.0 - | 119 | 34 | 0.0 | 0.0 | 0.3 | 2 |
| FS 891 | --- | --- | 94.2 | 59.8 | 120 | 35 | 0.0 | 0.0 | 3.0 | 1 |
| 15VDH-FHB-MAS25-15 | --- | 110.2 | 94.1 | 60.9 + | 119 - | 32 - | 0.0 | 0.0 | 0.0 | 0 |
| Dyna-Gro Shirley | 100.2 | 109.3 | 94.0 | 58.2 - | 120 | 32 - | 0.0 | 0.0 | 0.8 | 0 |
| SH 4400 | 96.0 | 103.2 | 93.9 | 59.8 | 122 + | 36 | 0.5 | 0.8 + | 2.0 | 3 |
| GA15VDH-FHB-MAS23-18LE43F | --- | --- | 93.8 | 60.5 + | 120 | 32 - | 0.0 | 0.0 | 0.0 | 1 |
| 13VTK429-3 | 96.6 | 103.8 | 93.8 | 60.8 + | 121 + | 34 | 0.0 | 0.0 | 0.0 | 0 |
| MBX 223 | --- | 103.3 | 93.7 | 59.3 | 119 | 34 | 0.5 | 0.0 | 2.5 | 3 |
| KWS340 | --- | --- | 93.6 | 60.0 | 122 + | 33 | 0.5 | 0.5 | 0.0 | 1 |
| USG 3562 | --- | --- | 93.5 | 60.2 | 120 | 35 | 0.3 | 0.0 | 1.5 | 0 |
| FS 878 | --- | --- | 93.4 | 57.3 - | 119 | 33 | 0.0 | 0.5 | 3.0 | 0 |
| 17VDH-SRW05-170 | --- | --- | 93.2 | 59.1 - | 121 + | 32 - | 0.0 | 0.1 | 0.0 | 0 |
| MAS #106 | 91.3 - | 99.9 | 93.2 | 59.3 | 116 - | 34 | 1.3 + | 0.5 | 3.0 | 0 |
| MAS #139 | --- | --- | 93.0 | 58.4 - | 120 | 32 - | 0.0 | 0.0 | 5.0 + | 2 |
| 16VDH-SRW03-018 | --- | --- | 92.9 | 61.6 + | 119 | 36 | 0.0 | 0.0 | 0.0 | 0 |
| MBX 127 | --- | 104.9 | 92.7 | 58.9 - | 121 + | 33 | 0.0 | 0.0 | 1.5 | 0 |
| Progeny #BUSTER | 100.3 | 107.5 | 92.4 | 59.9 | 121 + | 35 | 0.0 | 0.0 | 2.0 | 0 |
| GA10127-18E26 | --- | --- | 92.1 | 60.8 + | 123 + | 34 | 0.0 | 1.0 + | 0.0 | 0 |
| VA19W-24 | --- | --- | 91.8 | 60.9 + | 120 | 34 | 0.0 | 0.0 | 0.3 | 1 |
| FS 601 | --- | --- | 91.7 | 58.1 - | 120 | 33 | 0.0 | 0.5 | 2.0 | 0 |
| VA19W-29 | --- | --- | 91.5 | 60.4 + | 120 | 34 | 0.0 | 0.0 | 2.5 | 3 |
| MBX 246 | --- | 102.9 | 91.4 | 60.0 | 120 | 36 | 0.0 | 0.0 | 2.0 | 1 |

Table 24. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern VA AREC in Warsaw, VA, 2021 harvest, continued.

| 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) | Barley Yellow Dwarf Virus (0-9) |
|----------------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|----------------------------|--------------------------|---------------------------|-----------------------|----------------------------|---------------------------------------|
| 15VDH-SRW02-075 | 100.6 | 104.6 | 91.2 | 60.9 + | 121 + | 36 + | 0.0 | 0.0 | 0.0 | 0 |
| Progeny #BULLET | 94.9 | 103.4 | 91.2 | 59.3 | 120 | 36 | 0.0 | 0.0 | 0.3 | 1 |
| AgriMAXX 502 | --- | 103.4 | 90.9 | 58.9 - | 119 | 34 | 0.0 | 0.0 | 2.5 | 5 + |
| Hardy 2519 | --- | --- | 90.8 | 60.8 + | 119 | 37 + | 0.8 + | 0.3 | 0.0 | 0 |
| LW2148 | --- | --- | 90.7 | 59.1 - | 121 + | 35 | 1.0 + | 0.0 | 4.0 + | 0 |
| SY Viper | 99.2 | 102.5 | 90.5 | 60.3 + | 119 | 36 | 1.0 + | 0.0 | 3.0 | 0 |
| VA19W-31 | --- | --- | 90.5 | 60.1 | 119 | 35 | 1.0 + | 0.0 | 0.0 | 3 |
| MAS #67 | 89.0 - | 95.3 - | 90.4 | 57.5 - | 119 | 33 | 0.0 | 0.3 | 1.5 | 1 |
| SY Richie | 98.9 | 101.4 | 90.3 | 59.5 | 118 - | 33 | 0.0 | 0.0 | 0.0 | 0 |
| KWS263 | --- | --- | 90.3 | 58.6 - | 121 + | 35 | 0.0 | 0.0 | 0.0 | 0 |
| LW2848 | 95.9 | 103.4 | 90.3 | 58.6 - | 120 | 35 | 0.0 | 0.0 | 0.0 | 1 |
| MBX 176 | --- | 102.4 | 89.9 | 58.2 - | 120 | 35 | 0.0 | 0.0 | 3.5 + | 4 + |
| Dyna-Gro 9151 | --- | 103.7 | 89.9 | 60.8 + | 121 + | 34 | 0.0 | 0.0 | 4.0 + | 3 |
| Featherstone 125 | 99.7 | 106.4 | 89.7 | 61.9 + | 120 | 34 | 0.0 | 0.0 | 0.0 | 0 |
| AgriMAXX 473 | 92.5 - | 102.3 | 89.3 | 59.0 - | 120 | 36 | 0.0 | 0.0 | 0.0 | 1 |
| GA15VDH-FHB-MAS30-18ESc43F | --- | --- | 89.0 | 59.7 | 118 - | 32 - | 0.0 | 0.0 | 0.3 | 2 |
| NC12642-81 | --- | --- | 89.0 | 61.3 + | 117 - | 36 | 0.0 | 0.0 | 1.5 | 2 |
| SY 007 | 94.6 | 101.1 | 88.8 | 59.5 | 119 - | 33 | 0.3 | 0.0 | 1.3 | 0 |
| AgriMAXX Exp 2002 | --- | 101.9 | 88.8 | 60.3 + | 117 - | 33 | 0.0 | 0.3 | 0.5 | 0 |
| VA14HRW-41 | --- | --- | 87.7 | 59.6 | 122 + | 36 + | 0.8 + | 0.0 | 0.0 | 0 |
| USG 3230 | --- | 100.2 | 87.6 | 58.6 - | 119 - | 33 | 0.5 | 0.0 | 0.8 | 1 |
| MBX 242 | --- | --- | 86.9 | 59.3 | 120 | 35 | 0.0 | 0.0 | 0.3 | 4 + |
| MAS #133 | --- | 99.8 | 86.9 | 56.4 - | 121 + | 35 | 0.0 | 0.0 | 4.5 + | 3 |
| AgriMAXX 505 | --- | 100.1 | 86.2 | 60.8 + | 120 | 34 | 0.3 | 0.0 | 3.5 + | 5 + |
| SH 9310 | --- | --- | 86.2 | 61.6 + | 118 - | 33 | 0.0 | 0.0 | 0.0 | 0 |
| #BERKELEY | 93.6 - | 99.2 - | 86.0 | 59.9 | 118 - | 33 | 0.3 | 0.0 | 0.5 | 0 |
| USG 3316 | 94.9 | 96.0 - | 84.7 - | 58.9 - | 121 + | 33 | 0.0 | 0.0 | 6.0 + | 0 |
| LW2068 | --- | 98.5 - | 84.6 - | 57.4 - | 120 | 35 | 0.0 | 0.0 | 6.0 + | 0 |
| Dyna-Gro WX20738 | --- | --- | 84.5 - | 59.1 - | 120 | 34 | 0.3 | 0.0 | 0.0 | 5 + |

Table 24. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern VA AREC in Warsaw, VA, 2021 harvest, continued.

| 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) | Barley Yellow Dwarf Virus (0-9) |
|-----------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|----------------------------|--------------------------|---------------------------|-----------------------|----------------------------|---------------------------------------|
| NC12164-97T | --- | --- | 83.4 - | 60.5 + | 120 | 37 + | 1.0 + | 0.0 | 0.8 | 0 |
| Pioneer 26R36 | --- | --- | 83.3 - | 58.6 - | 120 | 33 | 0.0 | 0.8 + | 0.5 | 2 |
| MAS #2 | --- | --- | 82.3 - | 60.3 + | 122 + | 40 + | 2.3 + | 0.0 | 1.0 | 1 |
| FL14167LDH-158 | --- | 100.3 | 81.9 - | 59.7 | 121 + | 37 + | 0.0 | 0.0 | 0.0 | 2 |
| AgriMAXX Exp 2020 HRW | --- | --- | 80.2 - | 61.7 + | 121 + | 32 - | 0.3 | 0.3 | 0.3 | 4 + |
| NC12164-200T | --- | --- | 79.4 - | 61.9 + | 119 | 34 | 0.0 | 0.0 | 0.8 | 2 |
| FLLA10033C-6 | --- | 92.5 - | 79.0 - | 59.4 | 120 | 36 + | 0.0 | 0.0 | 0.0 | 4 + |
| AgriMAXX Exp 2019 HRW | --- | --- | 77.1 - | 62.8 + | 122 + | 31 - | 0.0 | 1.0 + | 0.5 | 5 + |
| SY 576 | 87.4 - | 92.4 - | 75.3 - | 58.4 - | 125 + | 33 | 0.0 | 0.1 | 0.3 | 1 |
| KWS380 | --- | --- | 74.7 - | 59.9 | 120 | 32 - | 0.0 | 0.0 | 4.0 + | 2 |
| NC11546-14 | --- | 89.7 - | 74.5 - | 61.4 + | 119 | 36 | 0.0 | 0.0 | 0.5 | 3 |
| FLLA11004-7 | --- | --- | 72.6 - | 58.3 - | 124 + | 37 + | 0.0 | 0.0 | 0.0 | 1 |
| Massey | 76.8 - | 79.1 - | 71.3 - | 59.3 | 120 | 39 + | 1.3 + | 0.0 | 7.5 + | 0 |
| Average | 97.7 | 105.0 | 94.2 | 59.7 | 120 | 34 | 0.2 | 0.1 | 1.4 | 1 |
| LSD (0.05) | 4.1 | 5.7 | 9.0 | 0.5 | 1 | 2 | 0.5 | 0.5 | 1.7 | 2 |
| C.V. | 5.2 | 5.5 | 6.8 | 0.6 | 0 | 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, Eastern Shore AREC, Painter, VA, 2021 harvest.

| Line | 3-year Av. Yield (Bu/a) | 2-year Av. Yield (Bu/a) | Grain Yield (Bu/a) | Test Weight (Lb/bu) |
|----------------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|
| 15VDH-FHB-MAS38-01 | --- | 85.1 + | 71.9 + | 58.9 |
| LW2169 | --- | 86.2 + | 66.8 + | 58.5 |
| MAS #139 | --- | --- | 65.2 + | 57.7 |
| USG 3329 | 76.7 | 75.2 | 63.5 + | 58.1 |
| KWS340 | --- | --- | 63.0 | 58.7 |
| CPX91221 | --- | --- | 62.5 | 58.9 |
| USG EXP 3000 | --- | --- | 62.3 | 59.1 |
| Pioneer 26R59 | 81.5 + | 79.1 | 62.2 | 58.9 |
| VA17W-75 | 78.5 + | 79.5 | 61.9 | 59.1 |
| AgriMAXX Exp 2002 | --- | 74.1 | 61.8 | 59.7 + |
| DH13SRW022-216 | --- | --- | 61.2 | 59.2 |
| VA14HRW-41 | --- | --- | 61.0 | 59.2 |
| 14VDH-SRW14-150 | --- | 81.8 + | 60.9 | 58.6 |
| VA19W-29 | --- | --- | 60.7 | 59.5 + |
| DH13SRW022-23 | 76.5 | 76.0 | 60.6 | 59.1 |
| AgriMAXX 514 | --- | --- | 60.4 | 57.6 |
| 13VTK59-55 | 76.0 | 77.2 | 60.1 | 59.3 |
| Liberty 5658 | 69.9 | 70.1 | 59.9 | 59.6 + |
| Progeny #BUSTER | 83.0 + | 82.4 + | 59.8 | 59.1 |
| MBX 120 | --- | --- | 59.6 | 57.9 |
| Dyna-Gro 9070 | --- | 76.9 | 59.3 | 57.8 |
| GA10127-18E26 | --- | --- | 58.8 | 59.4 |
| USG 3562 | --- | --- | 58.6 | 58.1 |
| VA19W-31 | --- | --- | 58.5 | 60.0 + |
| 16VDH-SRW03-018 | --- | --- | 58.4 | 60.1 + |
| 16VDH-SRW09-025 | --- | 75.2 | 58.1 | 58.8 |
| FS 624 | --- | --- | 58.0 | 58.3 |
| CP8045 | --- | --- | 57.2 | 57.3 - |
| SH 4400 | 69.5 | 73.6 | 57.2 | 58.2 |
| 13VTK429-3 | 78.0 | 77.8 | 57.0 | 59.7 + |
| Hilliard | 75.0 | 72.1 | 56.8 | 58.5 |
| USG 3451 | --- | --- | 56.8 | 60.0 + |
| Dyna-Gro WX20738 | --- | --- | 56.7 | 58.4 |
| GA15VDH-FHB-MAS30-18ESc43F | --- | --- | 56.6 | 59.3 |
| 15VDH-FHB-MAS33-13 | --- | 74.9 | 56.4 | 59.1 |
| AgriMAXX 473 | 70.8 | 73.1 | 56.3 | 57.8 |
| MAS #316 | 68.5 | 72.5 | 56.2 | 56.3 - |
| FS 891 | --- | --- | 56.0 | 57.9 |
| Dyna-Gro WX20734 | --- | --- | 55.9 | 57.8 |

Table 25. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern Shore AREC, Painter, VA, 2021 harvest, continued.

| Line | 3-year Av. Yield (Bu/a) | 2-year Av. Yield (Bu/a) | Grain Yield (Bu/a) | Test Weight (Lb/bu) |
|-------------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|
| SY 100 | --- | --- | 55.8 | 56.2 - |
| AgriMAXX 502 | --- | 75.2 | 55.8 | 57.8 |
| 17VDH-SRW03-143 | --- | --- | 55.6 | 60.9 + |
| VA19W-79 | --- | --- | 55.6 | 59.9 + |
| Pioneer 26R36 | --- | --- | 55.6 | 58.8 |
| MAS #67 | 70.4 | 71.3 | 55.6 | 57.4 |
| MBX 242 | --- | --- | 55.5 | 58.5 |
| Dyna-Gro WX21741 | --- | --- | 55.5 | 57.6 |
| 15VTK-1-101 | --- | --- | 55.2 | 58.7 |
| Dyna-Gro 9151 | --- | 72.1 | 55.2 | 59.7 + |
| MBX 223 | --- | 75.7 | 55.1 | 58.0 |
| 16VDH-SRW03-023 | --- | 75.6 | 55.1 | 58.9 |
| DH15SRW67-151 | --- | --- | 55.0 | 58.0 |
| 14VDH-HRW02-029 | --- | --- | 54.9 | 59.1 |
| Dyna-Gro 9120 | --- | 74.5 | 54.6 | 59.7 + |
| AgriMAXX 516 | --- | --- | 54.4 | 57.3 - |
| MBX 127 | --- | 78.1 | 54.3 | 57.8 |
| Dyna-Gro 9172 | --- | 82.2 + | 54.1 | 57.7 |
| USG 3118 | 74.8 | 74.6 | 54.0 | 59.1 |
| MBX 246 | --- | 80.5 | 53.8 | 57.4 - |
| AgriMAXX 492 | --- | 64.2 - | 53.8 | 59.4 |
| Dyna-Gro Laverne | 71.5 | 69.7 | 53.7 | 57.5 |
| FS WX21B | --- | --- | 53.7 | 57.4 |
| Dyna-Gro Shirley | 75.4 | 78.0 | 53.7 | 57.3 - |
| MAS #143 | --- | 80.3 | 53.5 | 57.4 - |
| SY Viper | 72.8 | 67.5 | 53.4 | 59.3 |
| 16VTK19-201 | --- | --- | 53.4 | 59.3 |
| LW2958 | 71.0 | 72.7 | 53.4 | 57.7 |
| DH16-SRW120-064 | --- | --- | 53.0 | 59.0 |
| USG 3472 | --- | --- | 52.9 | 57.5 |
| Dyna-Gro 9002 | --- | 71.8 | 52.7 | 56.7 - |
| SH 9520 | --- | --- | 52.5 | 58.3 |
| FS 601 | --- | --- | 52.4 | 56.1 - |
| USG 3232 | --- | --- | 52.4 | 59.5 + |
| MAS #133 | --- | 75.6 | 52.3 | 55.4 - |
| 15VDH-FHB-MAS25-15 | --- | 77.6 | 52.1 | 59.7 + |
| DH15SRW65-53 | --- | 78.7 | 51.9 | 60.4 + |
| SY Richie | 73.3 | 68.1 | 51.8 | 58.5 |
| LW2068 | --- | 74.3 | 51.8 | 57.2 - |
| 16VDH-SRW05-205 | --- | 67.9 | 51.7 | 58.8 |

Table 25. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern Shore AREC, Painter, VA, 2021 harvest, continued.

| Line | 3-year Av. Yield (Bu/a) | 2-year Av. Yield (Bu/a) | Grain Yield (Bu/a) | Test Weight (Lb/bu) |
|---------------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|
| NC12164-97T | --- | --- | 51.7 | 60.2 + |
| USG 3316 | 72.8 | 69.1 | 51.7 | 57.5 |
| SY 576 | 69.4 | 71.5 | 51.7 | 56.6 - |
| KWS380 | --- | --- | 51.7 | 58.1 |
| SH 9310 | --- | --- | 51.3 | 60.7 + |
| MAS #86 | 75.0 | 75.5 | 51.2 | 56.4 - |
| KWS263 | --- | --- | 51.1 | 57.0 - |
| AgriMAXX 513 | --- | --- | 51.0 | 59.0 |
| MAS1407-056-6-3 | --- | 75.8 | 51.0 | 59.3 |
| USG 3536 | 70.2 | 74.0 | 50.9 | 58.0 |
| FS 878 | --- | --- | 50.8 | 57.3 - |
| SY 007 | 76.2 | 77.0 | 50.7 | 58.1 |
| 17VDH-SRW05-170 | --- | --- | 50.6 | 58.3 |
| FS 875 | --- | --- | 50.4 | 56.7 - |
| Progeny #BULLET | 67.6 | 72.1 | 50.4 | 57.1 - |
| Progeny #CHAD | --- | 76.3 | 50.3 | 57.8 |
| SY 547 | 72.1 | 76.2 | 50.2 | 57.8 |
| PROGENY 19-10 | --- | 80.2 | 50.0 | 57.5 |
| VA17W-74 | 69.9 | 67.1 | 49.5 | 58.9 |
| LW2848 | 72.8 | 73.6 | 49.3 | 56.9 - |
| SH 7200 | 65.9 | 64.3 - | 49.3 | 59.9 + |
| PROGENY PGX 20-2 | --- | --- | 48.8 | 60.9 + |
| MBX 176 | --- | 66.9 | 48.8 | 56.9 - |
| VA19W-89 | --- | --- | 48.8 | 58.3 |
| VA19W-24 | --- | --- | 48.7 | 59.5 + |
| VA19FHB-05 | --- | --- | 48.7 | 59.2 |
| SREXP117 | --- | --- | 48.6 | 55.5 - |
| MAS #2 | --- | --- | 48.4 | 59.1 |
| MBX 17-M-245 | 72.1 | 69.8 | 48.3 | 56.1 - |
| USG 3230 | --- | 73.4 | 47.7 | 56.7 - |
| Massey | 56.5 - | 54.6 - | 47.6 | 58.6 |
| CP8118 | 69.8 | 66.8 | 46.8 | 56.8 - |
| Featherstone 125 | 68.6 | 67.6 | 46.4 | 60.7 + |
| AgriMAXX Exp 2019 HRW | --- | --- | 45.7 | 60.7 + |
| GA15VDH-FHB-MAS23-18LE43F | --- | --- | 45.5 | 59.3 |
| Hardy 2519 | --- | --- | 45.3 | 59.5 + |
| 15VDH-SRW02-075 | 69.5 | 65.8 | 45.0 | 60.1 + |
| AgriMAXX Exp 2020 HRW | --- | --- | 44.5 | 59.3 |
| MAS #106 | 61.1 - | 57.2 - | 44.4 | 57.7 |

Table 25. Summary of performance of entries in the Virginia Tech Wheat Test, Eastern Shore AREC, Painter, VA, 2021 harvest, continued.

| Line | 3-year Av. Yield (Bu/a) | 2-year Av. Yield (Bu/a) | Grain Yield (Bu/a) | Test Weight (Lb/bu) |
|--------------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|
| NC12642-81 | --- | --- | 44.4 | 59.9 + |
| AgriMAXX 503 | --- | 70.0 | 44.4 | 57.4 - |
| FL14167LDH-158 | --- | 67.7 | 44.2 | 58.5 |
| NC11546-14 | --- | 59.8 - | 43.7 | 59.6 + |
| AgriMAXX 505 | --- | 65.0 | 43.7 | 60.0 + |
| Pioneer 26R45 | 67.3 | 65.2 | 43.2 | 56.3 - |
| Progeny #BERKELEY | 67.9 | 63.2 - | 43.1 - | 59.4 |
| FLLA10033C-6 | --- | 65.9 | 42.7 - | 58.0 |
| NC12164-200T | --- | --- | 42.6 - | 60.5 + |
| FLLA11004-7 | --- | --- | 39.4 - | 57.3 - |
| LW2148 | --- | --- | 39.2 - | 56.3 - |
| Average | 71.8 | 72.9 | 53.3 | 58.4 |
| LSD (0.05) | 6.4 | 8.3 | 10.1 | 1.0 |
| C.V. | 10.4 | 11.0 | 12.6 | 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.

Table 26. Summary of performance of entries in the Virginia Tech Wheat Test, Southern Piedmont AREC, Blackstone, VA, 2021 harvest.

| Line | 3-year Av. Yield (Bu/a) | 2-year Av. Yield (Bu/a) | Grain Yield (Bu/a) | Test Weight (Lb/bu) | Barley Yellow Dwarf Virus (0-9) |
|-------------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|---------------------------------------|
| Progeny #CHAD | --- | 95.6 + | 76.7 + | 58.6 | 2 |
| VA17W-74 | 78.2 | 87.5 | 74.4 + | 59.5 + | 4 |
| Dyna-Gro 9120 | --- | 87.1 | 74.0 + | 59.7 + | 4 |
| MAS #316 | 75.4 | 89.4 + | 73.6 + | 57.6 - | 4 |
| MBX 17-M-245 | 72.9 | 85.1 | 73.2 + | 58.2 | 8 |
| USG EXP 3000 | --- | --- | 73.2 + | 58.1 | 6 |
| Dyna-Gro 9002 | --- | 90.5 + | 73.2 + | 58.4 | 0 |
| 15VDH-FHB-MAS33-13 | --- | 88.1 | 73.2 + | 59.1 | 2 |
| 16VTK19-201 | --- | --- | 73.0 + | 59.5 | 2 |
| Featherstone 125 | 76.0 | 85.6 | 72.7 | 60.8 + | 0 |
| DH13SRW022-23 | 75.0 | 85.4 | 71.8 | 59.0 | 0 |
| Dyna-Gro Laverne | 75.3 | 83.7 | 71.2 | 58.4 | 0 |
| AgriMAXX 514 | --- | --- | 71.1 | 57.2 - | 4 |
| 14VDH-SRW14-150 | --- | 87.0 | 70.6 | 58.3 | 6 |
| Dyna-Gro WX21741 | --- | --- | 70.6 | 59.1 | 2 |
| CPX91221 | --- | --- | 70.6 | 60.6 + | 4 |
| MAS #86 | 79.1 + | 86.3 | 70.0 | 57.4 - | 2 |
| 15VDH-FHB-MAS25-15 | --- | 83.7 | 69.8 | 58.3 | 2 |
| PROGENY PGX 20-2 | --- | --- | 69.5 | 61.0 + | 0 |
| VA19W-29 | --- | --- | 69.3 | 58.9 | 2 |
| SH 9520 | --- | --- | 68.8 | 59.3 | 4 |
| Liberty 5658 | 73.3 | 87.1 | 68.6 | 59.7 + | 0 |
| CP8045 | --- | --- | 68.6 | 58.2 | 2 |
| USG 3329 | 76.1 | 90.5 + | 68.5 | 57.7 - | 2 |
| MAS #2 | --- | --- | 68.4 | 60.3 + | 4 |
| VA19W-79 | --- | --- | 68.4 | 59.2 | 0 |
| SY Richie | 76.3 | 80.7 | 68.4 | 59.2 | 0 |
| MAS #143 | --- | 84.7 | 68.4 | 58.3 | 0 |
| 16VDH-SRW03-023 | --- | 87.4 | 68.3 | 58.1 | 0 |
| SY 100 | --- | --- | 68.2 | 57.5 - | 4 |
| MBX 127 | --- | 85.4 | 68.0 | 58.1 | 4 |
| CP8118 | 75.7 | 83.2 | 67.8 | 56.9 - | 4 |
| DH16-SRW120-064 | --- | --- | 67.7 | 59.1 | 2 |
| AgriMAXX Exp 2019 HRW | --- | --- | 67.6 | 62.0 + | 6 |
| Dyna-Gro 9172 | --- | 84.4 | 67.5 | 58.4 | 2 |
| MBX 120 | --- | --- | 67.5 | 59.7 + | 4 |
| Dyna-Gro Shirley | 75.3 | 82.7 | 67.4 | 57.5 - | 4 |
| MBX 176 | --- | 81.3 | 67.4 | 58.5 | 6 |
| 13VTK429-3 | 73.6 | 83.2 | 67.1 | 60.1 + | 2 |

Table 26. Summary of performance of entries in the Virginia Tech Wheat Test, Southern Piedmont AREC, Blackstone, VA, 2021 harvest, continued.

| Line | 3-year Av. Yield (Bu/a) | 2-year Av. Yield (Bu/a) | Grain Yield (Bu/a) | Test Weight (Lb/bu) | Barley Yellow Dwarf Virus (0-9) |
|------------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|---------------------------------------|
| MAS #139 | --- | --- | 67.0 | 58.2 | 4 |
| Pioneer 26R45 | 75.6 | 87.4 | 66.4 | 58.4 | 4 |
| Pioneer 26R36 | --- | --- | 66.3 | 59.2 | 2 |
| Pioneer 26R59 | 74.8 | 81.6 | 66.3 | 59.0 | 4 |
| USG 3451 | --- | --- | 65.9 | 59.7 + | 0 |
| Hilliard | 77.1 | 83.9 | 65.7 | 58.5 | 2 |
| LW2169 | --- | 88.9 | 65.5 | 58.5 | 0 |
| Progeny #BULLET | 71.2 | 82.1 | 65.5 | 57.9 - | 4 |
| Dyna-Gro WX20734 | --- | --- | 65.4 | 59.2 | 4 |
| Hardy 2519 | --- | --- | 65.3 | 59.1 | 4 |
| AgriMAXX 502 | --- | 84.3 | 65.3 | 58.5 | 6 |
| AgriMAXX 492 | --- | 81.7 | 65.2 | 60.1 + | 0 |
| FS WX21B | --- | --- | 65.1 | 58.2 | 0 |
| DH13SRW022-216 | --- | --- | 65.1 | 59.1 | 2 |
| AgriMAXX 513 | --- | --- | 65.1 | 58.2 | 6 |
| USG 3232 | --- | --- | 65.0 | 59.1 | 2 |
| USG 3472 | --- | --- | 64.9 | 58.7 | 0 |
| FS 601 | --- | --- | 64.7 | 57.6 - | 4 |
| USG 3118 | 72.3 | 78.6 - | 64.6 | 58.9 | 2 |
| PROGENY 19-10 | --- | 82.2 | 64.6 | 57.6 - | 2 |
| 17VDH-SRW03-143 | --- | --- | 64.2 | 60.9 + | 4 |
| AgriMAXX 505 | --- | 79.6 | 64.1 | 60.1 + | 6 |
| Dyna-Gro 9070 | --- | 82.3 | 64.0 | 58.3 | 2 |
| FS 875 | --- | --- | 64.0 | 57.4 - | 0 |
| USG 3316 | 74.3 | 80.5 | 64.0 | 58.3 | 2 |
| AgriMAXX 503 | --- | 84.0 | 64.0 | 59.2 | 4 |
| VA19W-31 | --- | --- | 63.9 | 60.4 + | 2 |
| KWS263 | --- | --- | 63.9 | 59.1 | 2 |
| AgriMAXX Exp 2002 | --- | 80.0 | 63.9 | 58.8 | 2 |
| LW2958 | 69.7 | 77.0 - | 63.7 | 58.4 | 4 |
| GA10127-18E26 | --- | --- | 63.6 | 59.9 + | 0 |
| MAS1407-056-6-3 | --- | 85.6 | 63.5 | 60.7 + | 0 |
| VA17W-75 | 75.9 | 83.7 | 63.5 | 58.6 | 4 |
| 14VDH-HRW02-029 | --- | --- | 63.3 | 58.9 | 6 |
| DH15SRW65-53 | --- | 86.7 | 63.2 | 60.1 + | 2 |
| MAS #133 | --- | 84.5 | 63.2 | 56.6 - | 4 |
| MBX 223 | --- | 82.2 | 63.2 | 57.6 - | 4 |
| SY 547 | 73.7 | 83.9 | 63.1 | 57.9 - | 4 |
| 15VDH-FHB-MAS38-01 | --- | 79.7 | 63.0 | 57.7 - | 0 |

Table 26. Summary of performance of entries in the Virginia Tech Wheat Test, Southern Piedmont AREC, Blackstone, VA, 2021 harvest, continued.

| Line | 3-year Av. Yield (Bu/a) | 2-year Av. Yield (Bu/a) | Grain Yield (Bu/a) | Test Weight (Lb/bu) | Barley Yellow Dwarf Virus (0-9) |
|----------------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|---------------------------------------|
| DH15SRW67-151 | --- | --- | 63.0 | 57.8 - | 2 |
| VA19W-89 | --- | --- | 63.0 | 57.5 - | 4 |
| 17VDH-SRW05-170 | --- | --- | 62.9 | 58.2 | 2 |
| SREXP117 | --- | --- | 62.7 | 56.7 - | 0 |
| SH 9310 | --- | --- | 62.6 | 61.0 + | 6 |
| VA19FHB-05 | --- | --- | 62.5 | 59.5 | 0 |
| 16VDH-SRW03-018 | --- | --- | 62.5 | 60.4 + | 2 |
| MAS #106 | 65.9 - | 73.4 - | 62.1 | 58.6 | 4 |
| Dyna-Gro 9151 | --- | 83.5 | 62.0 | 60.2 + | 6 |
| NC12642-81 | --- | --- | 61.9 | 59.8 + | 2 |
| SY Viper | 73.5 | 80.3 | 61.9 | 60.6 + | 0 |
| Massey | 66.0 - | 72.9 - | 61.9 | 59.1 | 4 |
| LW2848 | 69.1 | 78.7 - | 61.8 | 57.7 - | 4 |
| VA19W-24 | --- | --- | 61.5 | 59.8 + | 0 |
| Progeny #BERKELEY | 73.1 | 77.2 - | 61.4 | 59.4 | 4 |
| 16VDH-SRW09-025 | --- | 77.5 - | 61.4 | 58.3 | 2 |
| AgriMAXX 473 | 72.5 | 82.4 | 61.2 | 57.7 - | 8 |
| 13VTK59-55 | 78.1 | 84.5 | 61.2 | 60.1 + | 0 |
| Progeny #BUSTER | 73.9 | 80.6 | 61.2 | 58.4 | 4 |
| Dyna-Gro WX20738 | --- | --- | 60.8 | 57.9 - | 4 |
| KWS340 | --- | --- | 60.3 | 58.1 | 4 |
| GA15VDH-FHB-MAS30-18ESc43F | --- | --- | 60.3 | 58.4 | 4 |
| AgriMAXX 516 | --- | --- | 60.2 | 58.2 | 4 |
| FS 624 | --- | --- | 60.0 | 58.9 | 4 |
| USG 3536 | 69.2 | 77.9 - | 59.9 | 57.8 - | 6 |
| NC12164-97T | --- | --- | 59.5 | 60.0 + | 4 |
| LW2148 | --- | --- | 59.5 | 58.6 | 4 |
| FL14167LDH-158 | --- | 77.2 - | 59.4 | 59.5 | 2 |
| MBX 246 | --- | 77.3 - | 59.3 | 58.5 | 6 |
| LW2068 | --- | 80.3 | 59.0 | 58.3 | 6 |
| VA14HRW-41 | --- | --- | 59.0 | 58.5 | 4 |
| KWS380 | --- | --- | 59.0 | 58.2 | 4 |
| 16VDH-SRW05-205 | --- | 73.1 - | 58.7 | 59.1 | 6 |
| USG 3562 | --- | --- | 58.5 | 58.4 | 4 |
| SH 4400 | 74.2 | 83.1 | 58.3 | 58.7 | 0 |
| MAS #67 | 72.2 | 77.5 - | 58.2 | 56.9 - | 2 |
| SY 007 | 70.7 | 76.6 - | 58.0 | 58.1 | 4 |
| SH 7200 | 69.8 | 77.5 - | 57.8 | 60.5 + | 4 |

Table 26. Summary of performance of entries in the Virginia Tech Wheat Test, Southern Piedmont AREC, Blackstone, VA, 2021 harvest, continued.

| Line | 3-year Av. Yield (Bu/a) | 2-year Av. Yield (Bu/a) | Grain Yield (Bu/a) | Test Weight (Lb/bu) | Barley Yellow Dwarf Virus (0-9) |
|---------------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|---------------------------------------|
| NC12164-200T | --- | --- | 56.7 | 60.9 + | 0 |
| USG 3230 | --- | 76.8 - | 56.7 | 57.7 - | 2 |
| AgriMAXX Exp 2020 HRW | --- | --- | 56.1 | 60.4 + | 6 |
| MBX 242 | --- | --- | 56.0 | 57.8 - | 2 |
| NC11546-14 | --- | 71.4 - | 56.0 | 60.5 + | 2 |
| FS 891 | --- | --- | 55.9 | 58.2 | 8 |
| GA15VDH-FHB-MAS23-18LE43F | --- | --- | 55.6 | 59.2 | 4 |
| 15VDH-SRW02-075 | 73.3 | 78.0 - | 55.0 - | 60.4 + | 2 |
| FLLA10033C-6 | --- | 70.0 - | 54.8 - | 59.2 | 4 |
| SY 576 | 70.3 | 75.5 - | 54.8 - | 55.9 - | 4 |
| FS 878 | --- | --- | 54.7 - | 55.9 - | 4 |
| 15VTK-1-101 | --- | --- | 52.1 - | 58.5 | 0 |
| FLLA11004-7 | --- | --- | 52.1 - | 57.6 - | 2 |
| Average | 73.5 | 82.1 | 64.1 | 58.8 | 3 |
| LSD (0.05) | 5.3 | 7.0 | 8.7 | 0.7 | --- |
| C.V. | 8.7 | 8.5 | 9.4 | 0.9 | --- |

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 27. Summary of performance of entries in the Virginia Tech Wheat Test, planted No-Till at Tidewater AREC, Holland, VA, 2021 harvest.

| Line | Grain Yield (Bu/a) | Test Weight (Lb/bu) |
|-------------------------|--------------------|---------------------|
| Pioneer 26R59 | 82.3 + | 58.5 |
| MAS #86 | 82.0 + | 57.2 - |
| 17VDH-SRW05-170 | 81.5 + | 59.0 |
| PROGENY PGX 20-2 | 80.6 | 60.7 + |
| Dyna-Gro 9120 | 80.5 | 60.2 + |
| Hardy 2519 | 80.2 | 59.8 + |
| USG 3451 | 80.2 | 59.6 |
| MAS1407-056-6-3 | 80.0 | 59.4 |
| MBX 120 | 79.7 | 59.7 + |
| Dyna-Gro WX20734 | 79.7 | 59.8 + |
| AgriMAXX 514 | 79.3 | 57.5 - |
| 16VTK19-201 | 79.1 | 60.1 + |
| CP8045 | 79.0 | 58.9 |
| USG 3316 | 78.9 | 58.1 |
| Featherstone 125 | 78.6 | 60.4 + |
| USG 3472 | 78.4 | 58.4 |
| 16VDH-SRW09-025 | 78.4 | 58.3 |
| Dyna-Gro 9002 | 77.9 | 57.1 - |
| KWS340 | 77.7 | 59.2 |
| 14VDH-HRW02-029 | 77.4 | 59.8 + |
| 17VDH-SRW03-143 | 77.4 | 60.7 + |
| LW2068 | 77.0 | 57.9 |
| AgriMAXX 513 | 76.8 | 58.7 |
| VA19FHB-05 | 76.7 | 58.9 |
| 16VDH-SRW03-018 | 76.7 | 59.6 |
| CPX91221 | 76.7 | 60.1 + |
| KWS263 | 76.5 | 56.7 - |
| SH 9520 | 76.3 | 59.6 + |
| MAS #316 | 76.3 | 58.8 |
| SY 100 | 76.0 | 56.0 - |
| DH16-SRW120-064 | 76.0 | 59.6 |
| AgriMAXX 516 | 76.0 | 58.4 |
| SH 7200 | 75.8 | 59.8 + |
| DH15SRW65-53 | 75.7 | 59.8 + |
| Dyna-Gro 9070 | 75.6 | 57.9 |
| USG 3329 | 75.6 | 58.1 |
| PROGENY 19-10 | 75.5 | 55.5 - |
| SREXP117 | 75.4 | 57.5 - |
| Dyna-Gro Laverne | 75.2 | 58.9 |
| 14VDH-SRW14-150 | 75.2 | 58.3 |

Table 27. Summary of performance of entries in the Virginia Tech Wheat Test, planted No-Till at Tidewater AREC, Holland, VA, 2021 harvest, continued.

| Line | Grain Yield (Bu/a) | Test Weight (Lb/bu) |
|-------------------------|--------------------|---------------------|
| Dyna-Gro WX20738 | 75.1 | 58.1 |
| DH15SRW67-151 | 75.1 | 57.8 - |
| MBX 223 | 74.5 | 57.6 - |
| Progeny #CHAD | 74.2 | 57.0 - |
| AgriMAXX 502 | 73.8 | 57.3 - |
| MAS #143 | 73.7 | 57.8 - |
| MBX 127 | 73.3 | 57.9 |
| Dyna-Gro WX21741 | 73.3 | 58.2 |
| MBX 17-M-245 | 73.3 | 57.3 - |
| SH 9310 | 73.1 | 61.3 + |
| 15VDH-FHB-MAS33-13 | 73.1 | 59.2 |
| LW2848 | 72.7 | 58.2 |
| 16VDH-SRW03-023 | 72.7 | 57.1 - |
| FS 875 | 72.5 | 57.1 - |
| DH13SRW022-23 | 72.5 | 59.2 |
| FS WX21B | 72.4 | 58.7 |
| 15VTK-1-101 | 72.3 | 58.7 |
| 15VDH-FHB-MAS38-01 | 72.3 | 58.9 |
| Hilliard | 72.2 | 58.3 |
| SY Richie | 72.2 | 58.3 |
| Dyna-Gro 9172 | 72.0 | 58.7 |
| SY 007 | 72.0 | 58.1 |
| VA19W-79 | 71.9 | 58.9 |
| Progeny #BULLET | 71.6 | 58.6 |
| USG 3536 | 71.6 | 58.2 |
| FS 624 | 71.1 | 58.3 |
| SY Viper | 71.1 | 59.2 |
| FS 601 | 71.0 | 56.7 - |
| 15VDH-FHB-MAS25-15 | 70.9 | 58.2 |
| Pioneer 26R45 | 70.8 | 58.7 |
| FLLA10033C-6 | 70.6 | 58.8 |
| MAS #67 | 70.5 | 56.2 - |
| MBX 176 | 70.5 | 57.8 - |
| VA19W-24 | 70.4 | 58.4 |
| MAS #133 | 70.4 | 54.8 - |
| Dyna-Gro Shirley | 70.2 | 57.6 - |
| FL14167LDH-158 | 70.1 | 59.2 |
| SH 4400 | 70.1 | 58.0 |
| AgriMAXX Exp 2002 | 69.9 | 58.9 |

Table 27. Summary of performance of entries in the Virginia Tech Wheat Test, planted No-Till at Tidewater AREC, Holland, VA, 2021 harvest, continued.

| Line | Grain Yield (Bu/a) | Test Weight (Lb/bu) |
|----------------------------|--------------------|---------------------|
| NC12164-200T | 69.6 | 60.4 + |
| AgriMAXX Exp 2020 HRW | 69.6 | 61.0 + |
| MAS #106 | 69.6 | 59.3 |
| VA17W-74 | 69.5 | 60.4 + |
| VA19W-29 | 69.3 | 57.9 |
| CP8118 | 69.2 | 57.2 - |
| VA14HRW-41 | 69.2 | 58.5 |
| AgriMAXX 505 | 69.1 | 60.9 + |
| MBX 246 | 69.1 | 59.4 |
| LW2169 | 68.8 | 58.4 |
| Progeny #BUSTER | 68.6 | 58.3 |
| 15VDH-SRW02-075 | 68.2 | 58.8 |
| MAS #2 | 68.0 | 59.4 |
| VA17W-75 | 67.9 | 59.7 + |
| 13VTK59-55 | 67.8 | 60.4 + |
| USG 3562 | 67.8 | 59.4 |
| GA15VDH-FHB-MAS30-18ESc43F | 67.8 | 58.5 |
| LW2958 | 67.5 | 59.7 + |
| VA19W-31 | 67.4 | 60.2 + |
| VA19W-89 | 67.1 | 57.7 - |
| AgriMAXX 473 | 67.0 | 57.3 - |
| 16VDH-SRW05-205 | 66.9 | 59.6 |
| NC11546-14 | 66.8 | 60.0 + |
| DH13SRW022-216 | 66.6 | 59.8 + |
| FLLA11004-7 | 66.3 | 58.3 |
| KWS380 | 66.2 | 59.1 |
| USG 3118 | 66.1 | 60.2 + |
| GA15VDH-FHB-MAS23-18LE43F | 66.0 | 59.5 |
| 13VTK429-3 | 66.0 | 60.0 + |
| AgriMAXX 492 | 65.9 | 60.0 + |
| Dyna-Gro 9151 | 65.7 | 60.2 + |
| MAS #139 | 65.2 | 57.8 - |
| AgriMAXX Exp 2019 HRW | 65.0 | 61.7 + |
| NC12642-81 | 64.8 | 60.2 + |
| Pioneer 26R36 | 64.6 | 58.6 |
| GA10127-18E26 | 64.5 | 60.4 + |
| FS 878 | 64.5 | 56.4 - |
| SY 547 | 64.2 | 58.6 |
| FS 891 | 63.7 | 58.4 |
| USG 3232 | 63.5 | 59.4 |

Table 27. Summary of performance of entries in the Virginia Tech Wheat Test, planted No-Till at Tidewater AREC, Holland, VA, 2021 harvest, continued.

| Line | Grain Yield (Bu/a) | Test Weight (Lb/bu) |
|--------------------------|--------------------|---------------------|
| AgriMAXX 503 | 63.4 | 59.0 |
| MBX 242 | 62.8 | 57.9 |
| LW2148 | 61.7 | 59.4 |
| NC12164-97T | 61.1 - | 60.6 + |
| USG EXP 3000 | 60.3 - | 59.6 |
| SY 576 | 59.3 - | 56.7 - |
| Massey | 59.0 - | 59.4 |
| Progeny #BERKELEY | 58.1 - | 57.5 - |
| Liberty 5658 | 57.5 - | 59.8 + |
| USG 3230 | 54.1 - | 58.0 |
| Average | 71.3 | 58.7 |
| LSD (0.05) | 9.6 | 0.9 |
| C.V. | 9.0 | 1.0 |

Released cultivars are shown in bold print.

Varieties are ordered by descending yield averages.

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

Note: Deer feeding at this site was extensive in 2020; 2-year data would not be useful.

Table 28. Summary of performance of entries in the Virginia Tech Wheat Test, Northern Piedmont Center, Orange, VA, 2021 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) |
|-------------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|--------------------------|
| VA19FHB-05 | --- | --- | 106.3 + | 59.8 + | 35 |
| VA19W-29 | --- | --- | 104.8 + | 58.6 | 34 |
| 15VTK-1-101 | --- | --- | 103.2 + | 57.7 | 28 - |
| Dyna-Gro Shirley | 93.2 | 72.5 | 102.0 + | 56.8 - | 31 |
| USG 3472 | --- | --- | 101.7 | 57.6 | 34 |
| MAS #86 | 91.5 | 85.1 | 100.1 | 57.0 - | 36 + |
| 15VDH-FHB-MAS38-01 | --- | 57.1 - | 99.9 | 56.7 - | 30 - |
| SY Viper | 98.8 + | 91.9 + | 98.7 | 59.1 + | 35 |
| MAS1407-056-6-3 | --- | 94.3 + | 98.4 | 59.7 + | 34 |
| 13VTK429-3 | 97.3 + | 87.8 + | 98.0 | 58.7 | 33 |
| Dyna-Gro 9120 | --- | 95.5 + | 98.0 | 60.4 + | 31 |
| Dyna-Gro 9002 | --- | 71.1 | 96.9 | 58.0 | 34 |
| FS 601 | --- | --- | 96.7 | 56.3 - | 33 |
| VA19W-79 | --- | --- | 96.1 | 59.0 | 33 |
| FS 875 | --- | --- | 96.1 | 57.4 | 33 |
| Dyna-Gro 9172 | --- | 94.7 + | 96.0 | 57.2 - | 33 |
| USG 3118 | 88.4 | 75.2 | 95.5 | 58.5 | 31 |
| AgriMAXX 516 | --- | --- | 94.7 | 57.5 | 32 |
| 16VDH-SRW05-205 | --- | 79.0 | 94.6 | 58.0 | 31 |
| SY Richie | 84.3 | 74.8 | 94.1 | 59.0 + | 32 |
| AgriMAXX 502 | --- | 89.4 + | 94.1 | 57.8 | 33 |
| Liberty 5658 | 89.6 | 77.0 | 93.7 | 58.9 | 33 |
| Dyna-Gro 9151 | --- | 83.7 | 93.5 | 59.9 + | 33 |
| AgriMAXX 492 | --- | 60.6 - | 93.4 | 60.5 + | 32 |
| 16VDH-SRW03-023 | --- | 66.2 | 93.3 | 57.9 | 32 |
| PROGENY 19-10 | --- | 83.0 | 93.2 | 57.0 - | 30 |
| Dyna-Gro WX20734 | --- | --- | 93.1 | 57.6 | 32 |
| DH15SRW67-151 | --- | --- | 93.0 | 58.0 | 30 - |
| AgriMAXX 505 | --- | 81.4 | 92.8 | 59.7 + | 34 |
| SH 9520 | --- | --- | 92.7 | 58.4 | 32 |
| 16VTK19-201 | --- | --- | 92.2 | 59.0 | 33 |
| USG EXP 3000 | --- | --- | 92.1 | 58.6 | 32 |
| AgriMAXX 514 | --- | --- | 91.4 | 57.0 - | 34 |
| 16VDH-SRW09-025 | --- | 75.1 | 90.8 | 57.8 | 34 |
| 17VDH-SRW03-143 | --- | --- | 90.6 | 60.5 + | 32 |
| MBX 246 | --- | 86.4 | 90.2 | 57.9 | 34 |
| 14VDH-HRW02-029 | --- | --- | 89.7 | 57.3 - | 33 |
| USG 3329 | 97.4 + | 91.7 + | 89.6 | 57.0 - | 33 |

Table 28. Summary of performance of entries in the Virginia Tech Wheat Test, Northern Piedmont Center, Orange, VA, 2021 harvest, continued.

| Line | 3-year Av. Yield (Bu/a) | 2-year Av. Yield (Bu/a) | Grain Yield (Bu/a) | Test Weight (Lb/bu) | Mature Height (In) |
|--------------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|--------------------------|
| DH13SRW022-216 | --- | --- | 88.8 | 59.0 | 32 |
| CP8045 | --- | --- | 88.7 | 56.8 - | 32 |
| USG 3536 | 87.4 | 79.1 | 88.7 | 57.0 - | 34 |
| AgriMAXX 513 | --- | --- | 88.6 | 58.1 | 32 |
| Dyna-Gro WX21741 | --- | --- | 88.3 | 58.2 | 34 |
| Dyna-Gro WX20738 | --- | --- | 87.9 | 58.1 | 33 |
| DH16-SRW120-064 | --- | --- | 87.8 | 58.4 | 29 - |
| Progeny #BERKELEY | 89.2 | 72.8 | 87.5 | 57.5 | 33 |
| 16VDH-SRW03-018 | --- | --- | 87.3 | 59.5 + | 33 |
| MAS #316 | 94.2 | 90.6 + | 87.3 | 56.9 - | 34 |
| 15VDH-SRW02-075 | 83.8 | 75.2 | 87.2 | 59.7 + | 34 |
| Dyna-Gro Laverne | 80.9 | 65.4 - | 87.2 | 58.5 | 28 - |
| 15VDH-FHB-MAS25-15 | --- | 77.9 | 86.9 | 58.2 | 31 |
| SH 7200 | 84.6 | 66.2 | 86.9 | 60.1 + | 34 |
| Pioneer 26R36 | --- | --- | 86.7 | 58.4 | 31 |
| Progeny #CHAD | --- | 64.7 - | 86.7 | 57.1 - | 29 - |
| USG 3316 | 92.8 | 84.8 | 86.6 | 57.7 | 34 |
| MBX 127 | --- | 90.3 + | 86.6 | 57.1 - | 32 |
| 17VDH-SRW05-170 | --- | --- | 86.5 | 56.9 - | 31 |
| LW2068 | --- | 88.5 + | 86.5 | 57.6 | 34 |
| Progeny #BULLET | 95.7 + | 90.8 + | 86.3 | 57.4 | 34 |
| DH15SRW65-53 | --- | 80.9 | 85.8 | 58.9 | 30 |
| Featherstone 125 | 97.2 + | 85.7 | 85.8 | 59.9 + | 32 |
| SY 547 | 89.9 | 84.4 | 85.6 | 57.2 - | 33 |
| Hardy 2519 | --- | --- | 85.2 | 59.6 + | 35 + |
| USG 3232 | --- | --- | 85.2 | 59.3 + | 33 |
| Hilliard | 82.1 | 69.2 | 85.1 | 58.5 | 33 |
| AgriMAXX 473 | 94.0 | 86.0 | 84.7 | 57.2 - | 32 |
| KWS263 | --- | --- | 84.6 | 57.0 - | 33 |
| Pioneer 26R45 | 87.4 | 80.7 | 84.6 | 58.0 | 32 |
| NC12642-81 | --- | --- | 84.0 | 60.3 + | 35 |
| 14VDH-SRW14-150 | --- | 75.6 | 83.8 | 58.3 | 32 |
| Dyna-Gro 9070 | --- | 80.0 | 83.8 | 57.7 | 32 |
| MAS #2 | --- | --- | 83.8 | 59.5 + | 35 + |
| MBX 176 | --- | 86.2 | 83.5 | 57.5 | 32 |
| Progeny #BUSTER | 90.2 | 83.1 | 83.5 | 58.6 | 32 |
| FS WX21B | --- | --- | 83.3 | 57.4 | 32 |
| SY 576 | 96.7 + | 97.6 + | 83.3 | 56.9 - | 33 |
| MAS #143 | --- | 90.8 + | 82.9 | 57.5 | 32 |
| AgriMAXX Exp 2002 | --- | 56.1 - | 82.8 | 59.7 + | 31 |

Table 28. Summary of performance of entries in the Virginia Tech Wheat Test, Northern Piedmont Center, Orange, VA, 2021 harvest, continued.

| Line | 3-year Av. Yield (Bu/a) | 2-year Av. Yield (Bu/a) | Grain Yield (Bu/a) | Test Weight (Lb/bu) | Mature Height (In) |
|-----------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|--------------------------|
| VA19W-89 | --- | --- | 82.4 | 56.1 - | 33 |
| MBX 242 | --- | --- | 82.2 | 57.9 | 34 |
| MAS #139 | --- | --- | 81.8 | 56.8 - | 30 |
| FLLA10033C-6 | --- | 83.6 | 81.6 | 58.3 | 35 + |
| SH 9310 | --- | --- | 81.6 | 60.4 + | 32 |
| SREXP117 | --- | --- | 81.6 | 55.2 - | 29 - |
| USG 3230 | --- | 71.9 | 81.4 | 56.5 - | 33 |
| MBX 17-M-245 | 85.8 | 68.7 | 81.0 | 57.5 | 31 |
| LW2958 | 94.1 | 84.8 | 81.0 | 57.6 | 33 |
| SY 007 | 85.5 | 70.1 | 81.0 | 57.7 | 33 |
| VA17W-75 | 81.7 | 63.2 - | 80.9 | 59.7 + | 31 |
| CPX91221 | --- | --- | 80.6 | 59.2 + | 33 |
| LW2848 | 93.0 | 88.0 + | 80.6 | 56.9 - | 34 |
| MBX 120 | --- | --- | 80.5 | 58.1 | 32 |
| FS 891 | --- | --- | 80.3 | 57.4 | 33 |
| USG 3562 | --- | --- | 79.8 | 57.5 | 32 |
| SY 100 | --- | --- | 79.7 | 55.5 - | 31 |
| KWS380 | --- | --- | 79.7 | 58.9 | 32 |
| VA14HRW-41 | --- | --- | 79.1 | 58.1 | 33 |
| VA17W-74 | 84.6 | 69.4 | 79.1 | 59.3 + | 33 |
| 15VDH-FHB-MAS33-13 | --- | 78.3 | 78.9 | 58.5 | 33 |
| MAS #133 | --- | 71.6 | 78.8 | 55.5 - | 32 |
| USG 3451 | --- | --- | 78.5 | 59.3 + | 33 |
| NC12164-200T | --- | --- | 78.1 | 60.8 + | 32 |
| LW2169 | --- | 87.4 + | 77.8 | 57.1 - | 30 |
| CP8118 | 81.0 | 65.8 - | 77.7 | 56.2 - | 28 - |
| VA19W-24 | --- | --- | 77.5 | 58.8 | 32 |
| MBX 223 | --- | 83.1 | 77.5 | 57.0 - | 31 |
| Pioneer 26R59 | 83.0 | 65.9 - | 77.1 | 57.9 | 29 - |
| GA10127-18E26 | --- | --- | 76.8 | 59.2 + | 31 |
| PROGENY PGX 20-2 | --- | --- | 76.5 | 60.4 + | 33 |
| Massey | 65.3 - | 49.9 - | 75.8 | 58.4 | 36 + |
| FS 878 | --- | --- | 75.5 | 55.7 - | 31 |
| SH 4400 | 81.7 | 80.8 | 75.1 | 59.1 + | 34 |
| AgriMAXX Exp 2019 HRW | --- | --- | 74.9 | 60.8 + | 29 - |
| MAS #67 | 66.3 - | 46.3 - | 74.7 | 56.3 - | 31 |

Table 28. Summary of performance of entries in the Virginia Tech Wheat Test, Northern Piedmont Center, Orange, VA, 2021 harvest, continued.

| Line | 3-year Av. Yield (Bu/a) | 2-year Av. Yield (Bu/a) | Grain Yield (Bu/a) | Test Weight (Lb/bu) | Mature Height (In) |
|----------------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|--------------------------|
| 13VTK59-55 | 78.6 | 67.5 | 73.6 | 59.5 + | 31 |
| GA15VDH-FHB-MAS30-18ESc43F | --- | --- | 73.1 | 57.5 | 30 |
| VA19W-31 | --- | --- | 71.8 | 58.5 | 32 |
| NC12164-97T | --- | --- | 71.6 | 59.9 + | 34 |
| GA15VDH-FHB-MAS23-18LE43F | --- | --- | 71.4 | 58.3 | 29 - |
| FL14167LDH-158 | --- | 73.0 | 70.8 | 58.6 | 35 |
| DH13SRW022-23 | 72.5 - | 53.7 - | 69.4 | 58.2 | 31 |
| MAS #106 | 71.3 - | 55.5 - | 68.7 | 58.2 | 29 - |
| KWS340 | --- | --- | 68.1 - | 58.9 | 32 |
| AgriMAXX Exp 2020 HRW | --- | --- | 65.0 - | 60.6 + | 30 |
| FS 624 | --- | --- | 64.3 - | 58.4 | 32 |
| NC11546-14 | --- | 48.8 - | 63.2 - | 59.4 + | 32 |
| AgriMAXX 503 | --- | 61.6 - | 62.2 - | 57.7 | 32 |
| FLLA11004-7 | --- | --- | 60.4 - | 58.0 | 35 + |
| LW2148 | --- | --- | 60.0 - | 57.5 | 31 |
| Average | 86.8 | 76.6 | 84.7 | 58.2 | 32 |
| LSD (0.05) | 8.4 | 10.7 | 16.2 | 0.8 | 2 |
| C.V. | 10.9 | 12.6 | 11.8 | 0.9 | 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.

Table 29. Summary of performance of entries in the Virginia Tech Wheat Test, Kentland Farm, Blacksburg, VA, 2021 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) |
|-------------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|----------------------------|--------------------------|---------------------------|
| VA19FHB-05 | --- | --- | 107.7 + | 60.9 | 128 | 35 + | 0.0 |
| Progeny #CHAD | --- | 96.3 + | 106.5 + | 59.4 | 130 | 31 - | 1.8 + |
| CP8045 | --- | --- | 105.8 + | 59.9 | 130 | 34 | 0.0 |
| Dyna-Gro 9002 | --- | 91.0 | 104.9 + | 59.6 | 130 | 33 | 0.0 |
| USG EXP 3000 | --- | --- | 104.5 + | 61.7 + | 129 | 34 | 0.0 |
| USG 3451 | --- | --- | 104.4 + | 60.9 | 128 | 35 + | 0.0 |
| Pioneer 26R36 | --- | --- | 103.7 + | 60.5 | 132 + | 34 | 0.3 |
| CP8118 | 93.3 + | 93.7 | 103.6 + | 59.0 - | 127 - | 31 - | 0.3 |
| PROGENY 19-10 | --- | 98.4 + | 103.5 + | 59.2 - | 132 + | 32 | 0.0 |
| 15VDH-FHB-MAS38-01 | --- | 88.0 | 103.5 + | 59.5 | 124 - | 31 - | 0.8 |
| Dyna-Gro WX20734 | --- | --- | 103.3 | 60.2 | 132 + | 34 | 0.0 |
| LW2169 | --- | 90.3 | 102.6 | 60.0 | 130 | 33 | 0.0 |
| SY 100 | --- | --- | 102.5 | 59.7 | 131 + | 32 | 0.0 |
| MBX 17-M-245 | 93.1 | 91.2 | 102.3 | 59.7 | 128 - | 32 | 0.3 |
| AgriMAXX 473 | 92.9 | 91.7 | 102.2 | 59.7 | 130 | 35 + | 0.0 |
| 15VDH-FHB-MAS33-13 | --- | 96.7 + | 102.1 | 60.5 | 129 | 33 | 0.0 |
| MAS1407-056-6-3 | --- | 91.7 | 101.9 | 60.3 | 131 + | 35 + | 0.0 |
| VA17W-75 | 95.5 + | 97.4 + | 101.9 | 60.8 | 121 - | 33 | 0.8 |
| 13VTK59-55 | 88.0 | 94.6 + | 101.8 | 60.6 | 129 | 33 | 0.0 |
| 14VDH-SRW14-150 | --- | 91.1 | 101.7 | 60.3 | 127 - | 34 | 0.0 |
| 15VDH-FHB-MAS25-15 | --- | 91.5 | 101.5 | 61.0 | 128 - | 32 | 0.0 |
| DH13SRW022-216 | --- | --- | 101.5 | 60.6 | 130 | 34 | 0.0 |
| SY Viper | 98.1 + | 96.3 + | 101.5 | 61.1 | 128 | 37 + | 0.8 |
| MBX 120 | --- | --- | 101.4 | 61.0 | 132 + | 33 | 0.0 |
| NC11546-14 | --- | 83.9 | 101.1 | 61.9 + | 130 | 35 | 0.0 |
| 17VDH-SRW05-170 | --- | --- | 100.6 | 59.6 | 130 | 33 | 0.0 |
| 14VDH-HRW02-029 | --- | --- | 100.4 | 60.6 | 131 + | 34 | 0.0 |
| AgriMAXX 514 | --- | --- | 100.3 | 59.0 - | 130 | 33 | 0.0 |
| USG 3329 | 94.9 + | 93.0 | 100.2 | 59.8 | 129 | 33 | 0.0 |
| Dyna-Gro Laverne | 88.9 | 89.0 | 100.2 | 59.9 | 125 - | 28 - | 0.0 |
| 17VDH-SRW03-143 | --- | --- | 100.1 | 62.3 + | 128 - | 34 | 0.5 |
| DH15SRW65-53 | --- | 93.0 | 100.1 | 62.0 + | 131 | 31 - | 0.0 |
| FS WX21B | --- | --- | 99.9 | 60.1 | 131 | 33 | 0.0 |
| 16VDH-SRW03-018 | --- | --- | 99.8 | 61.9 + | 127 - | 34 | 0.5 |
| VA19W-79 | --- | --- | 99.3 | 60.4 | 127 - | 35 | 0.0 |
| VA19W-29 | --- | --- | 99.1 | 60.2 | 129 | 34 | 0.0 |
| SH 9520 | --- | --- | 99.1 | 61.2 | 133 + | 33 | 0.0 |
| Dyna-Gro Shirley | 91.2 | 91.2 | 98.8 | 59.8 | 130 | 33 | 0.0 |

Table 29. Summary of performance of entries in the Virginia Tech Wheat Test, Kentland Farm, Blacksburg, VA, 2021 harvest, continued.

| 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) |
|-------------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|----------------------------|--------------------------|---------------------------|
| Pioneer 26R45 | 95.0 + | 95.3 + | 98.7 | 59.7 | 129 | 35 | 0.3 |
| Hilliard | 86.4 | 88.2 | 98.7 | 61.0 | 129 | 35 | 0.0 |
| KWS263 | --- | --- | 98.5 | 58.9 - | 130 | 34 | 0.0 |
| 15VTK-1-101 | --- | --- | 98.5 | 61.1 | 131 | 30 - | 1.3 + |
| Pioneer 26R59 | 92.7 | 90.6 | 98.3 | 59.8 | 129 | 28 - | 0.0 |
| VA17W-74 | 92.3 | 95.3 + | 98.3 | 61.4 | 122 - | 33 | 0.3 |
| AgriMAXX 492 | --- | 85.0 | 97.9 | 61.6 | 128 - | 34 | 0.3 |
| Dyna-Gro 9120 | --- | 88.0 | 97.9 | 61.7 + | 127 - | 32 | 0.0 |
| 13VTK429-3 | 95.7 + | 94.3 + | 97.8 | 61.3 | 130 | 35 + | 0.0 |
| DH15SRW67-151 | --- | --- | 97.7 | 59.4 | 132 + | 32 | 0.0 |
| DH13SRW022-23 | 89.6 | 86.9 | 97.4 | 60.9 | 131 | 33 | 0.0 |
| SY Richie | 87.5 | 88.9 | 97.4 | 60.9 | 126 - | 32 | 0.0 |
| AgriMAXX Exp 2020 HRW | --- | --- | 97.3 | 62.2 + | 131 | 31 - | 0.0 |
| VA19W-31 | --- | --- | 97.1 | 60.9 | 129 | 34 | 0.8 |
| 16VDH-SRW03-023 | --- | 94.4 + | 97.1 | 61.0 | 129 | 35 + | 0.0 |
| KWS340 | --- | --- | 97.0 | 61.1 | 130 | 33 | 0.0 |
| MBX 127 | --- | 89.2 | 96.6 | 59.7 | 130 | 34 | 0.0 |
| MBX 176 | --- | 88.8 | 96.4 | 59.3 - | 131 + | 33 | 0.0 |
| 16VDH-SRW09-025 | --- | 86.2 | 96.4 | 60.9 | 129 | 35 + | 0.0 |
| SH 4400 | 87.5 | 85.0 | 96.3 | 61.1 | 132 + | 35 | 0.0 |
| AgriMAXX 505 | --- | 90.6 | 96.2 | 61.9 + | 130 | 33 | 0.0 |
| 16VTK19-201 | --- | --- | 96.0 | 61.3 | 126 - | 33 | 0.0 |
| Dyna-Gro 9172 | --- | 87.4 | 95.8 | 60.3 | 130 | 32 | 0.0 |
| AgriMAXX 503 | --- | 93.5 | 95.8 | 60.5 | 131 + | 34 | 0.3 |
| MAS #86 | 89.8 | 88.1 | 95.6 | 58.9 - | 129 | 34 | 0.8 |
| USG 3316 | 90.7 | 92.1 | 95.6 | 60.7 | 131 + | 34 | 0.0 |
| MAS #143 | --- | 89.7 | 95.5 | 59.9 | 131 | 32 | 0.0 |
| SREXP117 | --- | --- | 95.4 | 58.2 - | 126 - | 28 - | 0.0 |
| DH16-SRW120-064 | --- | --- | 95.4 | 61.5 | 130 | 30 - | 0.0 |
| Featherstone 125 | 93.9 + | 91.0 | 95.0 | 62.1 + | 131 + | 35 + | 0.0 |
| PROGENY PGX 20-2 | --- | --- | 94.8 | 62.8 + | 127 - | 33 | 0.5 |
| SY 007 | 85.1 | 82.9 | 94.8 | 59.7 | 128 - | 35 | 0.8 |
| USG 3232 | --- | --- | 94.7 | 60.3 | 126 - | 31 - | 0.0 |
| SY 547 | 89.3 | 92.1 | 94.6 | 60.3 | 128 - | 35 + | 0.0 |
| Progeny #BULLET | 92.6 | 91.6 | 94.5 | 59.5 | 130 | 34 | 0.0 |
| USG 3472 | --- | --- | 94.5 | 59.9 | 130 | 33 | 0.0 |
| Progeny #BUSTER | 90.9 | 88.6 | 94.5 | 61.0 | 130 | 32 | 0.0 |
| USG 3536 | 86.3 | 88.8 | 94.3 | 60.3 | 130 | 34 | 0.3 |
| CPX91221 | --- | --- | 94.2 | 61.8 + | 130 | 34 | 0.0 |

Table 29. Summary of performance of entries in the Virginia Tech Wheat Test, Kentland Farm, Blacksburg, VA, 2021 harvest, continued.

| 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) |
|-----------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|----------------------------|--------------------------|---------------------------|
| USG 3118 | 81.1 - | 85.2 | 94.0 | 60.8 | 128 | 31 - | 0.0 |
| AgriMAXX Exp 2019 HRW | --- | --- | 93.9 | 62.4 + | 132 + | 30 - | 0.0 |
| FS 601 | --- | --- | 93.7 | 59.7 | 130 | 32 | 0.0 |
| MBX 223 | --- | 90.2 | 93.6 | 59.3 - | 129 | 33 | 0.3 |
| LW2848 | 88.3 | 86.4 | 93.4 | 59.7 | 130 | 35 + | 0.0 |
| AgriMAXX 516 | --- | --- | 93.3 | 60.3 | 131 + | 32 | 0.0 |
| SH 7200 | 77.4 - | 74.7 - | 93.2 | 61.1 | 127 - | 35 + | 0.3 |
| MAS #316 | 90.1 | 89.0 | 93.1 | 60.8 | 131 + | 35 | 0.0 |
| LW2148 | --- | --- | 93.1 | 60.5 | 131 | 36 + | 0.3 |
| GA10127-18E26 | --- | --- | 93.0 | 61.7 + | 132 + | 32 | 0.0 |
| AgriMAXX Exp 2002 | --- | 85.4 | 92.9 | 61.3 | 127 - | 32 | 0.0 |
| AgriMAXX 502 | --- | 88.1 | 92.8 | 60.4 | 129 | 33 | 0.0 |
| LW2068 | --- | 87.6 | 92.7 | 59.4 | 130 | 32 | 0.0 |
| Dyna-Gro 9070 | --- | 85.5 | 92.4 | 60.0 | 129 | 32 | 0.0 |
| FS 624 | --- | --- | 92.0 | 60.6 | 131 + | 35 | 0.0 |
| Dyna-Gro WX21741 | --- | --- | 91.9 | 61.4 | 130 | 35 + | 0.0 |
| Hardy 2519 | --- | --- | 91.8 | 61.1 | 129 | 35 | 0.0 |
| MBX 246 | --- | 85.9 | 91.8 | 60.9 | 131 | 34 | 0.0 |
| FS 875 | --- | --- | 91.8 | 59.6 | 129 | 33 | 0.3 |
| Liberty 5658 | 87.1 | 87.3 | 91.8 | 60.3 | 127 - | 34 | 0.0 |
| Dyna-Gro WX20738 | --- | --- | 91.5 | 59.7 | 130 | 34 | 0.0 |
| 16VDH-SRW05-205 | --- | 84.0 | 91.5 | 61.3 | 130 | 31 - | 0.0 |
| KWS380 | --- | --- | 91.1 | 61.4 | 130 | 32 - | 0.0 |
| VA19W-89 | --- | --- | 90.7 | 59.7 | 128 - | 33 | 0.0 |
| AgriMAXX 513 | --- | --- | 90.5 | 60.0 | 131 | 33 | 0.3 |
| 15VDH-SRW02-075 | 84.3 | 82.9 | 90.4 | 61.6 + | 132 + | 35 + | 0.3 |
| MAS #139 | --- | --- | 90.3 | 59.6 | 131 + | 32 - | 0.0 |
| MBX 242 | --- | --- | 89.8 | 60.4 | 131 | 33 | 0.0 |
| VA14HRW-41 | --- | --- | 89.6 | 60.0 | 131 + | 35 + | 0.0 |
| MAS #67 | 84.1 | 82.4 | 89.5 | 58.9 - | 128 | 31 - | 0.0 |
| Dyna-Gro 9151 | --- | 88.4 | 89.3 | 60.8 | 130 | 33 | 0.0 |
| VA19W-24 | --- | --- | 88.9 | 61.2 | 129 | 32 | 0.0 |
| USG 3562 | --- | --- | 88.9 | 61.0 | 131 | 34 | 0.0 |
| MAS #133 | --- | 85.7 | 88.1 | 57.8 - | 131 | 32 | 0.0 |
| MAS #2 | --- | --- | 87.5 | 60.8 | 130 | 39 + | 5.0 + |
| FS 878 | --- | --- | 87.0 | 58.6 - | 128 | 31 - | 0.0 |
| LW2958 | 87.4 | 84.9 | 85.2 - | 60.9 | 130 | 35 | 0.0 |
| USG 3230 | --- | 82.2 - | 84.6 - | 59.4 | 128 - | 33 | 0.0 |
| FS 891 | --- | --- | 84.6 - | 61.1 | 130 | 32 | 0.0 |

Table 29. Summary of performance of entries in the Virginia Tech Wheat Test, Kentland Farm, Blacksburg, VA, 2021 harvest, continued.

| 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) |
|----------------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|----------------------------|--------------------------|---------------------------|
| NC12164-200T | --- | --- | 83.7 - | 61.5 | 130 | 34 | 0.8 |
| Progeny #BERKELEY | 77.8 - | 76.6 - | 82.8 - | 60.8 | 128 | 32 | 0.0 |
| SY 576 | 83.4 | 80.9 - | 82.8 - | 60.2 | 133 + | 34 | 0.0 |
| SH 9310 | --- | --- | 81.3 - | 61.2 | 128 - | 32 | 0.3 |
| NC12164-97T | --- | --- | 81.2 - | 61.8 + | 129 | 36 + | 1.0 + |
| GA15VDH-FHB-MAS30-18ESc43F | --- | --- | 78.7 - | 60.4 | 128 | 31 - | 0.0 |
| Massey | 73.7 - | 73.8 - | 78.6 - | 60.8 | 128 | 39 + | 2.3 + |
| MAS #106 | 69.7 - | 65.2 - | 78.5 - | 59.2 - | 121 - | 33 | 1.0 + |
| GA15VDH-FHB-MAS23-18LE43F | --- | --- | 78.2 - | 61.1 | 131 + | 32 - | 0.0 |
| FLLA10033C-6 | --- | 76.8 - | 78.2 - | 59.5 | 130 | 35 | 0.3 |
| FL14167LDH-158 | --- | 78.3 - | 77.3 - | 59.7 | 129 | 34 | 0.3 |
| NC12642-81 | --- | --- | 77.2 - | 61.4 | 127 - | 34 | 0.0 |
| FLLA11004-7 | --- | --- | 70.3 - | 59.3 - | 132 + | 36 + | 0.5 |
| Average | 88.3 | 88.1 | 94.6 | 60.5 | 129 | 33 | 0.2 |
| LSD (0.05) | 4.9 | 5.9 | 8.8 | 1.1 | 1 | 1 | 0.7 |
| C.V. | 6.8 | 6.7 | 6.6 | 1.3 | 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 30. Summary of performance of entries in the Virginia Tech Wheat Test, Shenandoah County, VA, 2021 harvest (thanks to Guy Gochenour and GG Farms.)

| Line | 3-year Av. Yield (Bu/a) | 2-year Av. Yield (Bu/a) | Grain Yield (Bu/a) | Test Weight (Lb/bu) |
|--------------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|
| MAS #133 | --- | 112.6 | 130.0 + | 54.8 - |
| USG 3451 | --- | --- | 128.7 + | 57.7 |
| 16VDH-SRW09-025 | --- | 97.9 | 128.7 + | 56.1 - |
| USG EXP 3000 | --- | --- | 125.4 + | 58.6 + |
| Dyna-Gro 9172 | --- | 108.1 | 123.9 + | 56.7 |
| MAS #143 | --- | 117.2 | 120.7 + | 56.8 |
| USG 3472 | --- | --- | 120.6 + | 57.2 |
| Progeny #BERKELEY | 94.4 | 94.1 | 120.2 + | 55.6 - |
| KWS263 | --- | --- | 119.2 | 55.9 - |
| LW2169 | --- | 101.7 | 119.2 | 57.1 |
| Hilliard | 98.5 | 103.6 | 118.8 | 56.1 - |
| Dyna-Gro 9120 | --- | 89.2 | 118.8 | 58.9 + |
| FS WX21B | --- | --- | 118.5 | 56.9 |
| Dyna-Gro 9151 | --- | 101.6 | 118.0 | 58.0 |
| SY Viper | 103.5 + | 104.4 | 117.7 | 58.1 + |
| AgriMAXX 505 | --- | 100.0 | 117.2 | 58.0 |
| 15VDH-SRW02-075 | 93.9 | 95.5 | 116.9 | 58.4 + |
| KWS340 | --- | --- | 116.8 | 58.4 + |
| AgriMAXX 492 | --- | 86.4 | 116.6 | 58.0 |
| VA19W-79 | --- | --- | 116.6 | 57.5 |
| AgriMAXX 516 | --- | --- | 116.3 | 56.8 |
| DH16-SRW120-064 | --- | --- | 116.1 | 58.1 + |
| PROGENY PGX 20-2 | --- | --- | 115.6 | 59.6 + |
| NC12642-81 | --- | --- | 115.4 | 58.8 + |
| CP8045 | --- | --- | 115.3 | 57.2 |
| LW2068 | --- | 100.0 | 115.3 | 56.4 |
| LW2148 | --- | --- | 115.0 | 57.3 |
| MBX 127 | --- | 106.2 | 114.8 | 56.5 |
| Pioneer 26R45 | 96.8 | 95.3 | 114.6 | 56.7 |
| SH 9310 | --- | --- | 114.2 | 58.8 + |
| AgriMAXX 513 | --- | --- | 114.1 | 56.7 |
| FS 601 | --- | --- | 113.7 | 55.3 - |
| Dyna-Gro Laverne | 96.0 | 95.1 | 113.7 | 57.4 |
| LW2958 | 91.3 | 88.6 | 113.5 | 58.0 + |
| VA19W-29 | --- | --- | 113.5 | 55.5 - |
| AgriMAXX 514 | --- | --- | 113.5 | 55.2 - |
| SY 007 | 99.1 | 103.4 | 113.2 | 57.3 |
| 16VDH-SRW03-023 | --- | 102.5 | 113.1 | 55.1 - |

Table 30. Summary of performance of entries in the Virginia Tech Wheat Test, Shenandoah County, VA, 2021 harvest (thanks to Guy Gochenour and GG Farms), continued.

| Line | 3-year Av. Yield (Bu/a) | 2-year Av. Yield (Bu/a) | Grain Yield (Bu/a) | Test Weight (Lb/bu) |
|-------------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|
| VA19W-89 | --- | --- | 113.0 | 57.0 |
| 16VDH-SRW03-018 | --- | --- | 113.0 | 58.7 + |
| MAS1407-056-6-3 | --- | 93.0 | 112.7 | 58.5 + |
| CPX91221 | --- | --- | 112.5 | 59.0 + |
| MBX 242 | --- | --- | 112.3 | 57.5 |
| 15VDH-FHB-MAS25-15 | --- | 95.2 | 112.2 | 56.8 |
| VA19FHB-05 | --- | --- | 112.2 | 57.5 |
| Pioneer 26R59 | 94.9 | 94.2 | 112.2 | 56.7 |
| 13VTK429-3 | 98.3 | 102.4 | 112.0 | 57.7 |
| VA17W-74 | 94.5 | 95.9 | 111.9 | 58.1 + |
| USG 3536 | 97.4 | 96.3 | 111.9 | 57.4 |
| FS 891 | --- | --- | 111.8 | 56.9 |
| MAS #86 | 98.2 | 98.5 | 111.6 | 55.6 - |
| SH 4400 | 101.1 | 101.9 | 111.4 | 57.9 |
| SY 576 | 94.6 | 97.7 | 110.9 | 56.9 |
| USG 3230 | --- | 87.3 | 110.6 | 57.0 |
| AgriMAXX 502 | --- | 96.2 | 110.6 | 57.0 |
| 14VDH-SRW14-150 | --- | 93.7 | 110.5 | 56.5 |
| AgriMAXX Exp 2020 HRW | --- | --- | 110.4 | 59.3 + |
| Dyna-Gro 9070 | --- | 90.6 | 110.3 | 57.1 |
| USG 3562 | --- | --- | 110.3 | 56.3 |
| MBX 120 | --- | --- | 110.2 | 57.1 |
| Featherstone 125 | 97.3 | 97.0 | 110.1 | 58.9 + |
| 14VDH-HRW02-029 | --- | --- | 110.0 | 58.1 + |
| Dyna-Gro WX20738 | --- | --- | 110.0 | 57.0 |
| MAS #139 | --- | --- | 110.0 | 54.3 - |
| MBX 17-M-245 | 97.2 | 96.0 | 109.9 | 55.7 - |
| MBX 246 | --- | 92.0 | 109.8 | 57.6 |
| SY Richie | 100.5 | 98.4 | 109.7 | 56.6 |
| 13VTK59-55 | 94.6 | 96.4 | 109.6 | 57.8 |
| USG 3329 | 94.2 | 95.1 | 109.4 | 56.7 |
| 16VTK19-201 | --- | --- | 109.3 | 57.2 |
| AgriMAXX 473 | 102.1 + | 104.0 | 109.2 | 56.7 |
| USG 3232 | --- | --- | 108.9 | 58.0 |
| MAS #67 | 96.0 | 98.2 | 108.8 | 55.8 - |
| MAS #316 | 95.7 | 97.0 | 108.4 | 56.6 |
| FL14167LDH-158 | --- | 95.4 | 108.2 | 57.1 |
| 16VDH-SRW05-205 | --- | 90.9 | 107.9 | 57.0 |

Table 30. Summary of performance of entries in the Virginia Tech Wheat Test, Shenandoah County, VA, 2021 harvest (thanks to Guy Gochenour and GG Farms), continued.

| Line | 3-year Av. Yield (Bu/a) | 2-year Av. Yield (Bu/a) | Grain Yield (Bu/a) | Test Weight (Lb/bu) |
|----------------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|
| USG 3118 | 93.2 | 92.5 | 107.5 | 57.4 |
| FS 624 | --- | --- | 106.6 | 57.7 |
| VA19W-31 | --- | --- | 106.5 | 57.6 |
| DH15SRW65-53 | --- | 95.7 | 106.4 | 57.2 |
| Dyna-Gro 9002 | --- | 93.2 | 105.9 | 55.9 - |
| FLLA10033C-6 | --- | 92.9 | 105.8 | 57.3 |
| Progeny #BULLET | 94.8 | 94.0 | 105.8 | 57.3 |
| GA15VDH-FHB-MAS30-18ESc43F | --- | --- | 105.6 | 55.6 - |
| SH 7200 | 91.3 | 90.3 | 105.6 | 58.5 + |
| PROGENY 19-10 | --- | 99.6 | 105.5 | 54.9 - |
| NC12164-200T | --- | --- | 105.5 | 59.5 + |
| SY 100 | --- | --- | 105.3 | 54.8 - |
| VA17W-75 | 97.5 | 99.9 | 105.2 | 58.2 + |
| DH13SRW022-23 | 93.5 | 94.2 | 105.1 | 57.2 |
| Liberty 5658 | 98.2 | 97.5 | 105.1 | 58.8 + |
| FLLA11004-7 | --- | --- | 104.9 | 56.2 |
| MAS #2 | --- | --- | 104.9 | 58.6 + |
| 17VDH-SRW05-170 | --- | --- | 104.8 | 56.2 |
| Pioneer 26R36 | --- | --- | 104.3 | 56.8 |
| MBX 176 | --- | 90.1 | 104.0 | 55.8 - |
| Progeny #BUSTER | 96.2 | 92.3 | 104.0 | 58.0 |
| 17VDH-SRW03-143 | --- | --- | 103.9 | 59.1 + |
| FS 875 | --- | --- | 103.8 | 55.7 - |
| 15VDH-FHB-MAS33-13 | --- | 97.7 | 103.7 | 56.2 |
| AgriMAXX Exp 2019 HRW | --- | --- | 103.6 | 60.4 + |
| Dyna-Gro WX21741 | --- | --- | 103.2 | 56.1 - |
| Dyna-Gro Shirley | 89.4 | 86.1 | 102.9 | 55.5 - |
| SH 9520 | --- | --- | 102.8 | 57.1 |
| DH13SRW022-216 | --- | --- | 102.6 | 57.3 |
| GA15VDH-FHB-MAS23-18LE43F | --- | --- | 102.6 | 57.5 |
| MBX 223 | --- | 92.3 | 102.5 | 55.5 - |
| USG 3316 | 97.2 | 93.8 | 102.4 | 57.1 |
| Dyna-Gro WX20734 | --- | --- | 102.1 | 57.0 |
| CP8118 | 87.6 - | 87.3 | 101.6 | 55.7 - |
| SY 547 | 95.7 | 94.3 | 101.5 | 57.1 |
| 15VTK-1-101 | --- | --- | 101.1 | 56.1 - |
| AgriMAXX 503 | --- | 97.6 | 100.9 | 57.3 |
| KWS380 | --- | --- | 99.9 | 57.2 |

Table 30. Summary of performance of entries in the Virginia Tech Wheat Test, Shenandoah County, VA, 2021 harvest (thanks to Guy Gochenour and GG Farms), continued.

| Line | 3-year Av. Yield (Bu/a) | 2-year Av. Yield (Bu/a) | Grain Yield (Bu/a) | Test Weight (Lb/bu) |
|----------------------|-------------------------------|-------------------------------|--------------------------|---------------------------|
| FS 878 | --- | --- | 99.5 | 55.7 - |
| VA19W-24 | --- | --- | 99.4 | 56.8 |
| SREXP117 | --- | --- | 99.3 | 56.4 |
| AgriMAXX Exp 2002 | --- | 98.8 | 99.3 | 58.2 + |
| Progeny #CHAD | --- | 87.4 | 98.6 | 56.0 - |
| GA10127-18E26 | --- | --- | 98.1 | 57.9 |
| 15VDH-FHB-MAS38-01 | --- | 93.5 | 98.0 | 55.2 - |
| Hardy 2519 | --- | --- | 95.0 - | 57.9 |
| DH15SRW67-151 | --- | --- | 94.1 - | 56.2 |
| MAS #106 | 90.1 | 86.2 | 93.9 - | 57.3 |
| LW2848 | 93.8 | 93.2 | 93.0 - | 56.3 |
| NC11546-14 | --- | 81.1 | 90.1 - | 57.2 |
| Massey | 81.2 - | 81.7 | 89.9 - | 58.3 + |
| VA14HRW-41 | --- | --- | 88.6 - | 56.4 |
| NC12164-97T | --- | --- | 81.9 - | 58.4 + |
| Average | 95.4 | | 108.9 | 57.1 |
| LSD (0.05) | 6.4 | | 11.0 | 0.9 |
| C.V. | 8.1 | | 6.9 | 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.

Section 4: Milling and Baking Quality

Grain samples from all 130 entries in Virginia’s 2020 State Wheat Test grown at Blackstone, VA were submitted to the USDA-ARS Soft Wheat Quality Lab in Wooster, OH for advanced milling and baking quality evaluations. Wheat cultivars and experimental lines (collectively referred to as “varieties” herein) are listed in Table 29 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 2019) | | |
|--|-----------------------|----------------|
| Grade | Range | Percent |
| A | >70.69 | 15 |
| B | 69.52 to 70.69 | 20 |
| C | 68.02 to 69.52 | 30 |
| D | 66.60 to 68.02 | 20 |
| F | <66.60 | 15 |
| | | |
| Cookie Diameter (Based on Samples Between 2009 and 2019) | | |
| Grade | Range | Percent |
| A | >19.30 | 15 |
| B | 18.86 to 19.30 | 20 |
| C | 18.35 to 18.86 | 30 |
| D | 17.90 to 18.35 | 20 |
| F | <17.90 | 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 130 varieties ranged from 65.8% to 72.6%, and 18 varieties had flour yields and grades (A-C) that were similar to or higher than that of Shirley (70.7%) the quality standard check (Table 31).

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 130 varieties had softness equivalence scores that varied from 39.9% to 63.7% with 2 varieties having values of 63.0% or higher. Softness equivalence scores of 94 varieties were numerically higher than that of Shirley (52.3%).

Flour protein concentration of the 130 varieties varied from 6.4% to 9.4% and Shirley had a value of 7.5%. 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 52 varieties including Shirley (81.3%) were less than 100%, while the remaining 78 varieties had values ranging from 100% to 145.6% with a test average of 103.5%. Five varieties had higher Lactic acid SRC values (130.7 to 145.6%) and flour protein concentrations (8.0 to 9.0%), 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 15.2 to 19.9 cm with a test average of 18.5 cm. Twenty-three varieties had cookie spread diameters (19.3 cm or higher) that were rated as grade A. Forty-four varieties had overall quality T-scores (0.0 to 1.1) that were higher than that of Shirley.

Table 31. Milling and baking quality of entries in the Virginia Tech Official Variety Test based on evaluation of the 2020 Blackstone harvest.

| Entry | Test Weight (lb/bu) | Adjusted Flour Yield (%) | Adjusted Flour Yield % Grade | Softness Equivalent (%) | Flour Protein (at 14%) | Lactic Acid SRC (%) | Cookie Diameter (cm) | Cookie Diameter Grade | Total T-Score* |
|-------------------------|---------------------|--------------------------|------------------------------|-------------------------|------------------------|---------------------|----------------------|-----------------------|----------------|
| USG 3316 | 60.7 | 72.6 + | A | 63.7 + | 7.0 | 100.0 | 19.9 + | A | 1.1 |
| USG 3329 | 61.7 | 71.8 + | A | 60.3 | 7.8 | 113.6 | 19.1 | B | 0.9 |
| CROPLAN CP9606 | 60.9 | 72.2 + | A | 56.8 | 6.9 | 80.3 | 19.9 + | A | 0.9 |
| Progeny #BLAZE | 60.8 | 71.6 + | A | 60.8 | 7.3 | 101.7 | 19.5 + | A | 0.8 |
| TX15D9579 | 61.6 | 71.3 + | A | 55.7 | 7.8 | 101.4 | 19.5 + | A | 0.7 |
| MBX 223 | 60.7 | 71.5 + | A | 60.2 | 7.5 | 103.3 | 19.4 + | A | 0.7 |
| MAS #106 | 61.4 | 71.8 + | A | 58.8 | 7.7 | 120.7 | 18.3 | D | 0.6 |
| MAS #86 | 60.0 | 70.6 | B | 60.9 | 6.5 | 89.7 | 19.2 | B | 0.6 |
| Progeny 19-12 | 59.5 | 71.2 + | A | 63.5 + | 6.9 | 104.0 | 19.0 | B | 0.6 |
| MAS #143 | 60.7 | 70.6 | B | 61.2 | 6.5 | 97.0 | 19.5 + | A | 0.6 |
| Dyna-Gro 9932 | 61.8 | 70.8 + | A | 55.9 | 7.6 | 105.5 | 19.3 + | A | 0.5 |
| GA10407-17E8 | 62.8 | 71.3 + | A | 53.1 | 8.8 | 116.3 | 18.6 | C | 0.5 |
| Dyna-Gro 9172 | 60.7 | 70.3 | B | 60.8 | 7.6 | 95.1 | 19.9 + | A | 0.4 |
| Dyna-Gro 9002 | 60.8 | 69.8 | B | 57.5 | 7.2 | 100.6 | 19.6 + | A | 0.4 |
| USG 3458 | 60.9 | 71.3 + | A | 56.5 | 7.3 | 90.5 | 18.6 | C | 0.4 |
| AgriMAXX 495 | 62.5 | 70.5 | B | 56.3 | 7.9 | 109.7 | 19.6 + | A | 0.4 |
| MAS #133 | 58.1 | 71.0 + | A | 62.8 | 6.7 | 91.3 | 19.6 + | A | 0.4 |
| USG 3895 | 60.3 | 70.4 | B | 60.9 | 7.0 | 86.2 | 19.5 + | A | 0.4 |
| Progeny 19-11 | 60.7 | 70.3 | B | 60.1 | 6.9 | 102.9 | 19.3 | B | 0.4 |
| MBX 17-M-245 | 60.7 | 71.2 + | A | 55.5 | 7.1 | 89.6 | 18.4 | C | 0.3 |
| 15VDH-FHB-MAS33-13 | 62.0 | 69.9 | B | 56.4 | 7.5 | 115.9 | 18.4 | C | 0.2 |
| MAS #136 | 59.7 | 71.0 + | A | 60.4 | 7.5 | 115.9 | 18.9 | C | 0.2 |
| LWX20C | 60.7 | 69.6 | B | 60.5 | 6.4 | 93.2 | 19.5 + | A | 0.2 |
| DH15SRW65-53 | 62.5 | 69.9 | B | 53.8 | 7.5 | 95.0 | 19.3 | B | 0.2 |
| AgriMAXX 415 | 62.6 | 70.2 | B | 51.3 | 8.3 | 100.0 | 19.6 + | A | 0.2 |
| MAS #130 | 60.3 | 70.2 | B | 62.7 | 6.6 | 104.4 | 19.5 + | A | 0.2 |
| Featherstone 125 | 63.0 + | 70.3 | B | 52.4 | 7.5 | 95.5 | 18.0 | D | 0.2 |
| LW2958 | 62.5 | 69.3 | C | 57.3 | 7.9 | 110.1 | 19.9 + | A | 0.2 |

Table 31. Milling and baking quality of entries in the Virginia Tech Official Variety Test based on evaluation of the 2020 Blackstone harvest, continued.

| Entry | Test Weight (lb/bu) | Adjusted Flour Yield (%) | Adjusted Flour Yield % Grade | Softness Equivalent (%) | Flour Protein (at 14%) | Lactic Acid SRC (%) | Cookie Diameter (cm) | Cookie Diameter Grade | Total T-Score* |
|------------------------|---------------------|--------------------------|------------------------------|-------------------------|------------------------|---------------------|----------------------|-----------------------|----------------|
| KWS242 | 60.5 | 70.2 | B | 60.8 | 7.0 | 100.6 | 18.8 | C | 0.2 |
| LCS 11719 | 62.0 | 69.5 | B | 56.1 | 7.6 | 104.9 | 19.2 | B | 0.1 |
| MBX 127 | 59.6 | 70.0 | B | 59.7 | 6.7 | 98.4 | 19.4 + | A | 0.1 |
| Pioneer 26R10 | 61.2 | 69.4 | C | 61.1 | 7.2 | 97.9 | 19.2 | B | 0.1 |
| Pioneer 26R45 | 60.4 | 69.7 | B | 54.6 | 7.4 | 80.1 | 19.3 + | A | 0.1 |
| 15VDH-FHB-MAS34-18 | 64.3 + | 69.5 | C | 54.2 | 7.9 | 104.5 | 18.8 | C | 0.1 |
| MAS #128 | 61.3 | 70.6 | B | 58.0 | 7.2 | 85.7 | 19.4 + | A | 0.1 |
| Progeny PGX 19-3 | 62.2 | 70.2 | B | 53.1 | 7.4 | 91.7 | 19.3 | B | 0.1 |
| MAS #140 | 61.4 | 69.9 | B | 54.7 | 7.4 | 96.7 | 19.6 + | A | 0.1 |
| Progeny PGX 18-8 | 61.4 | 69.4 | C | 57.0 | 7.0 | 99.3 | 18.6 | C | 0.1 |
| MBX 246 | 62.1 | 69.1 | C | 58.6 | 7.6 | 108.9 | 19.6 + | A | 0.1 |
| 16VDH-SRW07-067 | 61.5 | 70.5 | B | 53.8 | 7.9 | 110.5 | 18.1 | D | 0.0 |
| GA11656-17E11 | 63.9 + | 69.6 | B | 51.7 | 8.2 | 106.1 | 18.4 | C | 0.0 |
| AgriMAXX 503 | 62.2 | 69.4 | C | 54.4 | 7.4 | 95.8 | 19.0 | B | 0.0 |
| AgriMAXX 496 | 61.5 | 69.1 | C | 58.4 | 7.2 | 100.7 | 19.3 | B | 0.0 |
| SH 4400 | 62.1 | 70.0 | B | 56.6 | 7.2 | 104.9 | 18.6 | C | 0.0 |
| Shirley (Check) | 60.5 | 70.7 + | A | 52.3 | 7.5 | 81.3 | 18.9 | B | 0.0 |
| USG 3790 | 61.0 | 69.2 | C | 58.2 | 7.0 | 101.6 | 19.5 + | A | 0.0 |
| Progeny 19-10 | 60.9 | 68.9 | C | 58.0 | 7.1 | 100.6 | 18.5 | C | -0.1 |
| MAS1407-056-6-3 | 62.9 | 69.0 | C | 56.1 | 7.5 | 100.4 | 17.5 - | F | -0.1 |
| Dyna-Gro 9120 | 62.8 | 68.2 | C | 59.9 | 6.9 | 114.5 | 18.9 | B | -0.1 |
| MBX 176 | 60.5 | 69.5 | C | 52.2 | 7.3 | 85.8 | 18.7 | C | -0.1 |
| MBX 969 | 61.4 | 69.7 | B | 50.0 | 8.4 | 90.8 | 18.6 | C | -0.1 |
| SY 100 | 56.2 | 70.7 | B | 60.2 | 7.7 | 104.1 | 19.0 | B | -0.1 |
| Dyna-Gro 9070 | 60.7 | 69.1 | C | 55.4 | 7.6 | 108.8 | 19.1 | B | -0.1 |
| TX15D9253 | 58.8 | 70.9 + | A | 57.7 | 7.8 | 106.3 | 18.5 | C | -0.1 |
| Pioneer 26R59 | 61.6 | 68.7 | C | 59.0 | 6.7 | 89.1 | 19.1 | B | -0.1 |
| Massey | 62.1 | 69.9 | B | 51.8 | 8.8 | 119.1 | 17.9 | D | -0.1 |

Table 31. Milling and baking quality of entries in the Virginia Tech Official Variety Test based on evaluation of the 2020 Blackstone harvest, continued.

| Entry | Test Weight (lb/bu) | Adjusted Flour Yield (%) | Adjusted Flour Yield % Grade | Softness Equivalent (%) | Flour Protein (at 14%) | Lactic Acid SRC (%) | Cookie Diameter (cm) | Cookie Diameter Grade | Total T-Score* |
|-------------------------|---------------------|--------------------------|------------------------------|-------------------------|------------------------|---------------------|----------------------|-----------------------|----------------|
| AgriMAXX Exp 2003 | 61.0 | 69.4 | C | 49.8 - | 8.1 | 85.4 | 19.5 + | A | -0.2 |
| FL14078LDH-28 | 63.0 + | 69.2 | C | 56.0 | 8.3 | 135.1 | 18.3 | D | -0.2 |
| Dyna-Gro 9941 | 60.9 | 69.2 | C | 51.0 | 8.1 | 87.4 | 18.7 | C | -0.2 |
| SH 7200 | 61.9 | 70.7 + | A | 52.6 | 7.9 | 105.1 | 17.9 | D | -0.2 |
| 13VTK429-3 | 62.5 | 69.8 | B | 55.6 | 7.5 | 113.1 | 18.1 | D | -0.2 |
| GA10268-17LE16 | 61.0 | 69.6 | B | 55.1 | 7.6 | 111.6 | 18.8 | C | -0.2 |
| Liberty 5658 | 61.7 | 69.0 | C | 56.4 | 7.6 | 123.7 | 18.0 | D | -0.2 |
| TX15D9597 | 62.8 | 69.3 | C | 52.3 | 7.6 | 112.3 | 17.9 | D | -0.2 |
| 16VDH-SRW03-023 | 60.8 | 69.7 | B | 54.8 | 7.3 | 94.7 | 18.8 | C | -0.2 |
| LW2848 | 61.2 | 69.9 | B | 54.4 | 7.5 | 87.3 | 18.8 | C | -0.2 |
| AgriMAXX 473 | 62.3 | 69.8 | B | 49.9 - | 8.5 | 91.1 | 18.7 | C | -0.3 |
| 15VTK-12-21 | 62.7 | 68.9 | C | 51.2 | 8.1 | 109.3 | 18.7 | C | -0.3 |
| Progeny #BULLET | 61.2 | 70.0 | B | 54.2 | 7.8 | 95.5 | 18.7 | C | -0.3 |
| 16VDH-SRW04-028 | 63.2 + | 68.3 | C | 54.5 | 7.9 | 120.3 | 18.2 | D | -0.3 |
| AgriMAXX 502 | 60.9 | 68.4 | C | 55.7 | 7.8 | 112.2 | 19.1 | B | -0.3 |
| USG 3536 | 60.9 | 69.7 | B | 55.5 | 7.4 | 98.7 | 19.0 | B | -0.3 |
| Progeny PGX 18-9 | 60.1 | 69.3 | C | 51.3 | 7.5 | 87.2 | 19.1 | B | -0.3 |
| LW2068 | 60.1 | 68.8 | C | 52.0 | 7.2 | 86.6 | 19.1 | B | -0.3 |
| 14VDH-SRW14-150 | 61.1 | 68.8 | C | 54.7 | 8.3 | 102.6 | 18.6 | C | -0.3 |
| 15VDH-FHB-MAS38-01 | 60.5 | 68.4 | C | 52.3 | 7.0 | 86.7 | 18.5 | C | -0.3 |
| MAS #35 | 61.1 | 71.9 + | A | 48.3 - | 7.7 | 91.0 | 17.3 - | F | -0.4 |
| 16VDH-SRW06-131 | 62.1 | 69.2 | C | 51.9 | 8.3 | 117.1 | 17.9 | D | -0.4 |
| Progeny # BUSTER | 61.7 | 68.2 | C | 55.3 | 7.9 | 111.9 | 18.4 | C | -0.4 |
| 12VTK4-118 | 63.1 + | 70.3 | B | 53.0 | 7.6 | 118.2 | 18.8 | C | -0.4 |
| SH 7510 | 62.3 | 68.1 | C | 54.1 | 7.7 | 96.0 | 18.3 | D | -0.4 |
| 16VDH-SRW09-025 | 61.5 | 68.0 | D | 57.1 | 7.3 | 111.5 | 18.8 | C | -0.5 |
| FL14167LDH-158 | 62.4 | 67.9 | D | 55.4 | 7.5 | 96.7 | 18.6 | C | -0.5 |

Table 31. Milling and baking quality of entries in the Virginia Tech Official Variety Test based on evaluation of the 2020 Blackstone harvest, continued.

| Entry | Test Weight (lb/bu) | Adjusted Flour Yield (%) | Adjusted Flour Yield % Grade | Softness Equivalent (%) | Flour Protein (at 14%) | Lactic Acid SRC (%) | Cookie Diameter (cm) | Cookie Diameter Grade | Total T-Score* |
|------------------------|---------------------|--------------------------|------------------------------|-------------------------|------------------------|---------------------|----------------------|-----------------------|----------------|
| VA17W-176 | 62.0 | 68.4 | C | 52.7 | 7.7 | 98.7 | 18.3 | D | -0.5 |
| NC11546-14 | 63.7 + | 68.2 | C | 53.8 | 8.2 | 116.2 | 18.2 | D | -0.5 |
| Laverne | 62.0 | 68.8 | C | 48.5 - | 6.5 | 89.7 | 18.3 | D | -0.5 |
| AgriMAXX Exp 2002 | 63.4 + | 67.8 | D | 53.1 | 8.4 | 116.0 | 18.6 | C | -0.5 |
| 15VDH-FHB-MAS22-15 | 62.9 | 69.5 | C | 49.5 - | 7.9 | 88.2 | 18.1 | D | -0.5 |
| USG 3221 | 62.7 | 67.7 | D | 54.0 | 8.0 | 109.2 | 18.0 | D | -0.6 |
| SY Richie | 61.7 | 68.2 | C | 53.5 | 8.4 | 107.2 | 18.1 | D | -0.6 |
| SY 547 | 62.0 | 68.3 | C | 51.2 | 7.6 | 91.2 | 18.3 | D | -0.6 |
| NC15-21835 | 63.6 + | 67.8 | D | 49.6 - | 8.5 | 119.4 | 18.2 | D | -0.6 |
| 15VDH-FHB-MAS25-08 | 62.8 | 68.7 | C | 50.1 | 8.2 | 105.4 | 17.5 - | F | -0.6 |
| Hilliard | 61.6 | 67.4 | D | 56.4 | 7.6 | 107.8 | 17.7 - | F | -0.7 |
| CROPLAN CP8081 | 61.4 | 67.9 | D | 56.1 | 7.9 | 115.2 | 18.8 | C | -0.7 |
| Featherstone 31 | 61.2 | 67.4 | D | 54.0 | 7.5 | 109.4 | 18.5 | C | -0.7 |
| VA15W-86 | 61.0 | 67.8 | D | 53.1 | 7.6 | 111.6 | 18.1 | D | -0.7 |
| SY 007 | 61.3 | 67.6 | D | 57.4 | 7.9 | 101.1 | 17.6 - | F | -0.7 |
| 15VDH-SRW02-075 | 62.5 | 66.6 - | F | 56.3 | 7.6 | 98.6 | 18.4 | C | -0.7 |
| Progeny PGX 18-11 | 62.4 | 67.2 | D | 51.8 | 8.3 | 92.4 | 18.0 | D | -0.8 |
| Progeny 19-15 | 62.0 | 66.9 | D | 56.2 | 7.1 | 114.3 | 18.5 | C | -0.8 |
| 13VTK59-55 | 63.0 + | 68.0 | D | 50.0 | 7.8 | 100.1 | 18.2 | D | -0.8 |
| 15VDH-FHB-MAS33-30 | 63.4 + | 67.5 | D | 51.9 | 8.4 | 114.6 | 17.8 - | F | -0.8 |
| NC15-21834 | 63.1 + | 67.9 | D | 49.7 - | 8.1 | 115.4 | 18.3 | D | -0.8 |
| KWS333 | 61.1 | 67.4 | D | 57.4 | 7.1 | 111.9 | 18.4 | C | -0.8 |
| Progeny #CHAD | 60.7 | 67.4 | D | 59.4 | 6.7 | 108.1 | 18.4 | C | -0.8 |
| AgriMAXX 492 | 62.2 | 67.7 | D | 52.8 | 7.8 | 95.2 | 17.8 - | F | -0.8 |
| SY 576 | 61.7 | 68.2 | C | 51.5 | 7.5 | 89.8 | 18.4 | C | -0.9 |
| FL15105-LDH110 | 63.9 + | 67.5 | D | 45.0 - | 9.4 | 98.7 | 17.4 - | F | -0.9 |

Table 31. Milling and baking quality of entries in the Virginia Tech Official Variety Test based on evaluation of the 2020 Blackstone harvest, continued.

| Entry | Test Weight (lb/bu) | Adjusted Flour Yield (%) | Adjusted Flour Yield % Grade | Softness Equivalent (%) | Flour Protein (at 14%) | Lactic Acid SRC (%) | Cookie Diameter (cm) | Cookie Diameter Grade | Total T-Score* |
|--------------------------|---------------------|--------------------------|------------------------------|-------------------------|------------------------|---------------------|----------------------|-----------------------|----------------|
| MAS #67 | 60.1 | 66.8 | D | 55.1 | 7.1 | 89.4 | 18.8 | C | -0.9 |
| VA17W-75 | 63.3 + | 67.7 | D | 51.1 | 7.9 | 114.4 | 17.6 - | F | -0.9 |
| AgriMAXX 505 | 62.8 | 66.8 | D | 55.5 | 8.0 | 133.5 | 18.8 | C | -0.9 |
| MAS #316 | 61.0 | 71.4 + | A | 44.4 - | 8.5 | 83.2 | 16.2 - | F | -0.9 |
| FL15105-LDH145 | 63.8 + | 67.0 | D | 45.9 - | 8.7 | 97.9 | 17.7 - | F | -1.0 |
| 13VTK59-148 | 63.0 + | 66.7 | D | 53.9 | 7.2 | 92.6 | 18.4 | C | -1.0 |
| Progeny #BERKELEY | 61.2 | 66.8 | D | 52.6 | 8.1 | 91.8 | 18.6 | C | -1.0 |
| USG 3230 | 60.8 | 67.0 | D | 57.0 | 8.4 | 116.1 | 17.8 - | F | -1.0 |
| DH13SRW022-23 | 62.0 | 67.1 | D | 53.1 | 7.8 | 112.4 | 18.0 | D | -1.1 |
| FLLA10033C-6 | 61.0 | 66.4 - | F | 57.3 | 8.5 | 130.7 | 17.3 - | F | -1.1 |
| Dyna-Gro 9151 | 62.7 | 65.8 - | F | 55.6 | 8.1 | 133.9 | 18.5 | C | -1.1 |
| VA17W-74 | 62.9 | 67.1 | D | 50.7 | 7.7 | 112.2 | 17.1 - | F | -1.1 |
| SY Viper | 62.5 | 67.1 | D | 51.8 | 8.1 | 102.5 | 18.2 | D | -1.1 |
| Progeny PGX 18-2 | 61.3 | 67.2 | D | 51.9 | 8.1 | 101.9 | 17.1 - | F | -1.2 |
| 16VDH-SRW05-205 | 62.0 | 66.1 - | F | 49.1 - | 8.6 | 98.6 | 18.0 | D | -1.3 |
| 15VDH-FHB-MAS25-15 | 62.1 | 66.1 - | F | 54.6 | 7.4 | 123.2 | 18.1 | D | -1.3 |
| USG 3118 | 62.9 | 67.3 | D | 47.0 - | 8.3 | 108.0 | 18.4 | C | -1.3 |
| VA16W-202 | 60.9 | 67.0 | D | 53.7 | 8.1 | 109.1 | 17.5 - | F | -1.3 |
| Dyna-Gro 9772 | 57.8 | 66.3 - | F | 55.5 | 7.2 | 106.1 | 18.4 | C | -1.5 |
| L11919 | 62.2 | 69.5 | B | 44.3 - | 8.2 | 122.3 | 15.2 - | F | -1.8 |
| VA14HRW-25 | 62.4 | 67.3 | D | 39.9 - | 9.0 | 145.6 | 15.6 - | F | -2.5 |
| Average | 61.6 | 69.1 | | 54.7 | 7.7 | 103.5 | 18.5 | | |
| Standard Deviation | 1.2 | 1.5 | | 4.1 | 0.6 | 12.3 | 0.8 | | |

A plus sign indicates a favorable quality trait value; a negative sign indicates a marginal quality trait value. Released varieties are displayed in bold print.

There were 16 entries that exhibited test weight of 63 lb/bu or greater with 15VDH-FHB-MAS34-18 generating 64.3% lb/bu.

USG 3316 exhibited the highest flour yield of 72.6% and also favorable softness equivalence and cookie diameter.

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 5: Wheat Scab Research

One of the primary research objectives of the Virginia Tech wheat breeding program is to identify and develop cultivars possessing resistance to Fusarium Head Blight (FHB) or scab. In 2021, all wheat entries in Virginia's Official State Variety Trials were evaluated for FHB resistance in an inoculated, irrigated nursery at Eastern Virginia AREC. Data from this test for the current crop year and two- and three-year averages for FHB Index are included in the following tables in this bulletin to aid producers in selection of cultivars on the basis of FHB resistance. Cultivars possessing complete resistance or immunity to FHB have not been identified and resistance levels in currently available cultivars vary from moderately resistant to highly susceptible.

A major goal of the breeding program is to identify and incorporate unique and complementary types of FHB resistance into cultivars to enhance the overall level of resistance. Genes controlling FHB resistance have been identified on more than six chromosomes in wheat and some of these genes are complementary in nature and effect different disease resistance components such as FHB incidence, severity, and DON toxin content. Incorporating such multiple resistance genes having additive effects on FHB resistance into cultivars will enhance the overall level of resistance. Because the individual resistance genes are located on different wheat chromosomes and each gene confers only partial resistance to FHB, identifying wheat lines having multiple resistance genes is difficult using traditional breeding techniques. To overcome this limitation, our program is currently identifying and using DNA markers located close to these resistance genes on the same chromosome as "tags" for selecting wheat lines possessing different combinations of these complementary resistance genes in a process called Marker-Assisted Selection (MAS). In 2021, several lines within the Virginia State test, developed through our MAS program, have shown significantly improved levels of FHB resistance and good overall quality. These include 15VDH-FHB-MAS33-13, 15VDH-FHB-MAS38-01 and 15VDH-FHB-MAS25-15. Released lines exhibiting excellent resistance to FHB include MAS#316, MAS#86, LW2958 and MBX 175.

In 2021, entries were inoculated by spreading scabby corn kernels (50g/4-rows) in plots at the booting stage. Overall, the wheat lines exhibited limited infection and distribution of FHB related traits in the misted nursery. Among 129 lines and varieties tested in 2021, the FHB index varied from 0.5 to 6.5 with Fusarium damaged kernels (FDK %) ranging from 4% to 55%. Seventy-five of the tested lines and varieties had FHB index values lower than the mean (<2.7) and expressed moderate resistant to FHB in 2021. Based on two-year mean data for 2020 and 2021, 41 total entries (14 lines and 27 released varieties) had FHB index values lower than the test mean (<2.7).

Table 32. Summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab), 2021 harvest.

| Line | FHB Index ¹ (0-9) | Flowering Date (Julian) | FDK ² (%) | ISK Index ³ (%) |
|-------------------------|---------------------------------|-------------------------|----------------------|-------------------------------|
| Massey | 0.5 - | 126.5 | 7.5 | 3.0 - |
| MAS #316 | 0.5 - | 131.0 + | 13.5 | 3.1 - |
| Pioneer 26R36 | 1.0 | 128.0 | 11.0 | 6.0 |
| USG 3316 | 1.0 | 128.0 | 11.5 | 6.1 |
| MAS #86 | 1.0 | 126.5 | 15.0 | 6.1 |
| 15VDH-FHB-MAS33-13 | 1.0 | 126.0 | 4.0 - | 6.0 |
| FL14167LDH-158 | 1.0 | 128.5 | 30.0 | 6.1 |
| LW2068 | 1.0 | 127.0 | 10.0 | 6.1 |
| LW2169 | 1.0 | 130.0 + | 20.0 | 6.1 |
| MBX 176 | 1.0 | 128.5 | 17.5 | 6.1 |
| 17VDH-SRW03-143 | 1.0 | 124.5 | 17.5 | 6.1 |
| 16VTK19-201 | 1.0 | 126.0 | 9.0 | 6.0 |
| AgriMAXX 514 | 1.0 | 126.0 | 13.5 | 6.1 |
| AgriMAXX 516 | 1.0 | 130.0 + | 10.0 | 6.1 |
| CP8045 | 1.0 | 126.0 | 17.5 | 6.1 |
| Dyna-Gro WX21741 | 1.0 | 126.0 | 25.0 | 6.1 |
| USG 3472 | 1.0 | 126.5 | 14.0 | 6.1 |
| Featherstone 125 | 1.5 | 128.0 | 17.5 | 9.1 |
| VA17W-75 | 1.5 | 125.0 | 17.5 | 9.1 |
| LW2958 | 1.5 | 128.5 | 17.5 | 9.1 |
| SY 576 | 1.5 | 132.5 + | 55.0 + | 9.2 |
| 15VDH-FHB-MAS25-15 | 1.5 | 124.5 | 11.0 | 9.0 |
| MAS1407-056-6-3 | 1.5 | 127.0 | 16.0 | 9.1 |
| 15VDH-FHB-MAS38-01 | 1.5 | 123.5 - | 5.0 - | 9.0 |
| Dyna-Gro 9172 | 1.5 | 126.5 | 11.0 | 9.0 |
| Dyna-Gro 9070 | 1.5 | 126.0 | 6.5 - | 9.0 |
| MBX 127 | 1.5 | 130.0 + | 10.0 | 9.1 |
| MBX 246 | 1.5 | 128.5 | 17.5 | 9.1 |
| PROGENY 19-10 | 1.5 | 128.0 | 17.5 | 9.1 |
| DH15SRW67-151 | 1.5 | 130.0 + | 16.0 | 9.1 |
| VA19FHB-05 | 1.5 | 124.5 | 5.0 - | 9.0 |
| AgriMAXX 513 | 1.5 | 126.5 | 25.0 | 9.1 |
| FS 875 | 1.5 | 126.5 | 17.5 | 9.1 |
| MBX 242 | 1.5 | 126.5 | 20.0 | 9.1 |
| MAS #2 | 1.5 | 128.0 | 42.5 + | 9.2 |
| VA14HRW-41 | 1.5 | 126.5 | 25.0 | 9.1 |
| 14VDH-HRW02-029 | 1.5 | 126.0 | 17.5 | 9.1 |
| SY 007 | 2.0 | 123.5 - | 17.5 | 12.1 |

Table 32. Summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab), 2021 harvest, continued.

| Line | FHB Index ¹ (0-9) | Flowering Date (Julian) | FDK ² (%) | ISK Index ³ (%) |
|----------------------------|---------------------------------|-------------------------|----------------------|----------------------------|
| SY 547 | 2.0 | 130.0 + | 17.5 | 12.1 |
| Progeny #BULLET | 2.0 | 126.5 | 15.0 | 12.1 |
| 13VTK429-3 | 2.0 | 126.5 | 13.5 | 12.1 |
| USG 3329 | 2.0 | 126.0 | 11.5 | 12.1 |
| VA17W-74 | 2.0 | 125.0 | 9.0 | 12.0 |
| Progeny #BUSTER | 2.0 | 128.0 | 27.5 | 12.1 |
| FLLA10033C-6 | 2.0 | 128.5 | 50.0 + | 12.2 |
| NC11546-14 | 2.0 | 126.5 | 20.0 | 12.1 |
| AgriMAXX 502 | 2.0 | 126.0 | 10.0 | 18.0 |
| AgriMAXX 503 | 2.0 | 128.5 | 4.0 - | 12.0 |
| AgriMAXX 505 | 2.0 | 127.0 | 12.5 | 12.1 |
| Dyna-Gro 9151 | 2.0 | 126.0 | 5.5 - | 12.0 |
| Dyna-Gro 9002 | 2.0 | 126.0 | 4.0 - | 12.0 |
| MBX 223 | 2.0 | 125.0 | 22.5 | 12.1 |
| MAS #143 | 2.0 | 129.0 | 22.5 | 12.1 |
| DH13SRW022-216 | 2.0 | 126.5 | 15.0 | 12.1 |
| 16VDH-SRW03-018 | 2.0 | 125.0 | 18.5 | 12.1 |
| VA19W-89 | 2.0 | 128.0 | 10.0 | 12.0 |
| FS WX21B | 2.0 | 128.0 | 11.0 | 12.0 |
| GA10127-18E26 | 2.0 | 130.5 + | 32.5 + | 12.1 |
| KWS380 | 2.0 | 127.0 | 15.0 | 12.1 |
| KWS340 | 2.0 | 130.0 + | 13.5 | 12.1 |
| MBX 120 | 2.0 | 126.0 | 21.5 | 12.1 |
| USG 3232 | 2.0 | 123.5 - | 6.5 - | 12.0 |
| USG 3562 | 2.0 | 126.5 | 10.0 | 12.0 |
| USG EXP 3000 | 2.0 | 128.5 | 27.5 | 12.1 |
| Hilliard | 2.5 | 126.5 | 17.5 | 15.1 |
| SH 4400 | 2.5 | 126.5 | 15.0 | 15.1 |
| AgriMAXX 473 | 2.5 | 128.5 | 5.0 - | 15.0 |
| 15VDH-SRW02-075 | 2.5 | 125.0 | 27.5 | 15.1 |
| DH13SRW022-23 | 2.5 | 128.0 | 15.0 | 15.1 |
| 15VTK-1-101 | 2.5 | 126.5 | 22.5 | 15.1 |
| 17VDH-SRW05-170 | 2.5 | 126.5 | 11.0 | 15.0 |
| GA15VDH-FHB-MAS23-18LE43F | 2.5 | 130.0 + | 25.0 | 15.1 |
| GA15VDH-FHB-MAS30-18ESc43F | 2.5 | 126.0 | 22.5 | 15.1 |
| KWS263 | 2.5 | 128.0 | 22.5 | 15.1 |
| MAS #139 | 2.5 | 126.5 | 42.5 + | 15.2 |
| MAS #67 | 3.0 | 124.5 | 15.0 | 18.1 |

Table 32. Summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab), 2021 harvest, continued.

| Line | FHB Index ¹ (0-9) | Flowering Date (Julian) | FDK ² (%) | ISK Index ³ (%) |
|--------------------------|---------------------------------|-------------------------|----------------------|----------------------------|
| Liberty 5658 | 3.0 | 126.5 | 11.5 | 18.1 |
| LW2848 | 3.0 | 129.5 | 27.5 | 18.1 |
| 16VDH-SRW05-205 | 3.0 | 128.0 | 16.0 | 18.1 |
| AgriMAXX Exp 2002 | 3.0 | 124.0 | 17.5 | 18.1 |
| Dyna-Gro 9120 | 3.0 | 124.5 | 12.5 | 18.1 |
| MAS #133 | 3.0 | 126.5 | 12.5 | 18.1 |
| VA19W-29 | 3.0 | 128.0 | 35.0 + | 18.2 |
| Dyna-Gro WX20738 | 3.0 | 128.0 | 17.5 | 18.1 |
| FS 624 | 3.0 | 127.0 | 7.5 | 18.0 |
| USG 3118 | 3.5 | 125.0 | 17.5 | 21.1 |
| 13VTK59-55 | 3.5 | 124.5 | 10.0 | 21.0 |
| 16VDH-SRW09-025 | 3.5 | 125.0 | 15.0 | 21.1 |
| AgriMAXX 492 | 3.5 | 125.0 | 13.5 | 21.1 |
| Dyna-Gro WX20734 | 3.5 | 127.0 | 13.5 | 21.1 |
| USG 3230 | 3.5 | 128.0 | 40.0 + | 21.2 |
| VA19W-24 | 3.5 | 126.0 | 25.0 | 21.1 |
| FS 601 | 3.5 | 126.0 | 11.0 | 21.0 |
| SH 9520 | 3.5 | 128.0 | 24.0 | 21.1 |
| Hardy 2519 | 3.5 | 124.0 | 13.5 | 21.1 |
| Pioneer 26R45 | 4.0 | 126.5 | 15.0 | 24.1 |
| MBX 17-M-245 | 4.0 | 126.0 | 32.5 + | 24.1 |
| USG 3536 | 4.0 | 133.0 + | 17.5 | 24.1 |
| MAS #106 | 4.0 | 123.5 - | 15.0 | 24.1 |
| 16VDH-SRW03-023 | 4.0 | 126.0 | 25.0 | 24.1 |
| DH15SRW65-53 | 4.0 | 126.0 | 37.5 + | 24.2 |
| Progeny #CHAD | 4.0 | 123.0 - | 11.0 | 24.0 |
| VA19W-79 | 4.0 | 126.0 | 35.0 + | 24.2 |
| DH16-SRW120-064 | 4.0 | 127.0 | 22.5 | 24.1 |
| FS 878 | 4.0 | 126.0 | 22.5 | 24.1 |
| FS 891 | 4.0 | 127.0 | 25.0 | 24.1 |
| LW2148 | 4.0 | 127.0 | 11.5 | 24.1 |
| FLLA11004-7 | 4.0 | 134.0 + | 30.0 | 24.2 |
| Progeny #BERKELEY | 4.5 | 123.5 - | 13.5 | 27.1 |
| SY Viper | 4.5 | 126.0 | 8.0 | 27.0 |
| CP8118 | 4.5 | 124.0 | 11.0 | 27.0 |
| 14VDH-SRW14-150 | 4.5 | 124.5 | 17.5 | 27.1 |
| CPX91221 | 4.5 | 128.0 | 25.0 | 27.1 |
| NC12642-81 | 4.5 | 124.5 | 16.0 | 27.1 |

Table 32. Summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab), 2021 harvest, continued.

| Line | FHB Index ¹ (0-9) | Flowering Date (Julian) | FDK ² (%) | ISK Index ³ (%) |
|-------------------------|---------------------------------|-------------------------|----------------------|-------------------------------|
| NC12164-200T | 4.5 | 125.5 | 30.0 | 27.1 |
| PROGENY PGX 20-2 | 4.5 | 123.5 - | 11.5 | 27.1 |
| SY 100 | 5.0 + | 130.0 + | 30.0 | 30.1 + |
| SREXP117 | 5.0 + | 130.0 + | 8.0 | 30.0 + |
| NC12164-97T | 5.0 + | 126.0 | 18.5 | 30.1 + |
| SH 9310 | 5.0 + | 123.0 - | 27.5 | 30.1 + |
| USG 3451 | 5.0 + | 125.0 | 25.0 | 30.1 + |
| AgriMAXX Exp 2019 HRW | 5.0 + | 126.0 | 30.0 | 30.2 + |
| AgriMAXX Exp 2020 HRW | 5.0 + | 126.5 | 25.0 | 30.1 + |
| SH 7200 | 5.5 + | 126.5 | 42.5 + | 33.2 + |
| VA19W-31 | 5.5 + | 126.0 | 22.5 | 33.1 + |
| Dyna-Gro Shirley | 6.0 + | 130.0 + | 27.5 | 36.1 + |
| Dyna-Gro Laverne | 6.0 + | 123.5 - | 35.0 + | 36.2 + |
| SY Richie | 6.0 + | 123.0 - | 25.0 | 36.1 + |
| Pioneer 26R59 | 6.5 + | 126.0 | 17.5 | 39.1 + |
| Average | 2.7 | 126.7 | 18.7 | 16.4 |
| LSD (0.05) | 1.8 | 3.1 | 12.2 | 11.0 |
| C.V. | --- | 1.3 | --- | --- |

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

¹ FHB Index is an overall indicator of scab resistance/susceptibility level and takes into account both incidence and severity where 0 = highly resistant and 9 = highly susceptible.

² FDK (%): Fusarium damaged kernels, visual assessment of the percent of infected kernels.

³ ISK Index takes into account both incidence and severity and is a composite of head and kernel traits; 0 = highly resistant and 100 = highly susceptible.

Table 33. Two-year summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab), 2020 and 2021 harvests.

| Line | FHB Index ¹ (0-9) | Flowering Date (Julian) | FDK ² (%) | ISK Index ³ (%) |
|-------------------------|---------------------------------|-------------------------|----------------------|-------------------------------|
| 15VDH-FHB-MAS33-13 | 0.6 - | 123.5 | 4.8 - | 7.5 - |
| MAS #316 | 0.7 - | 127.8 + | 10.8 | 11.3 |
| Massey | 0.7 - | 125.0 | 14.5 | 10.9 - |
| 15VDH-FHB-MAS38-01 | 0.8 - | 118.5 - | 5.0 - | 7.5 - |
| MBX 176 | 0.8 - | 126.3 + | 13.3 | 11.3 |
| MAS #86 | 0.9 - | 125.3 | 10.8 | 10.5 - |
| LW2068 | 0.9 | 125.5 | 8.3 - | 11.3 |
| VA17W-75 | 0.9 | 123.3 | 13.3 | 10.6 - |
| LW2169 | 1.0 | 127.5 + | 13.8 | 13.6 |
| 15VDH-FHB-MAS25-15 | 1.0 | 122.3 | 11.0 | 11.3 |
| MBX 127 | 1.0 | 127.0 + | 9.5 | 11.3 |
| MBX 246 | 1.0 | 126.3 + | 13.8 | 10.6 - |
| PROGENY 19-10 | 1.0 | 126.0 | 18.3 | 12.8 |
| FL14167LDH-158 | 1.1 | 124.8 | 26.3 + | 13.6 |
| Dyna-Gro 9172 | 1.1 | 125.3 | 8.8 - | 14.3 |
| Featherstone 125 | 1.2 | 124.0 | 13.8 | 13.5 |
| Dyna-Gro 9070 | 1.2 | 123.5 | 11.5 | 14.3 |
| LW2958 | 1.2 | 126.0 | 13.8 | 14.3 |
| NC11546-14 | 1.3 | 123.5 | 13.8 | 12.8 |
| AgriMAXX 503 | 1.3 | 126.3 + | 8.3 - | 12.8 |
| AgriMAXX 505 | 1.3 | 125.0 | 11.3 | 13.5 |
| SY 007 | 1.3 | 122.8 | 13.8 | 12.8 |
| VA17W-74 | 1.5 | 122.8 | 11.3 | 15.8 |
| MAS #143 | 1.5 | 126.5 + | 14.5 | 15.1 |
| USG 3316 | 1.5 | 126.0 | 13.3 | 17.3 |
| AgriMAXX 502 | 1.5 | 124.0 | 14.3 | 20.0 |
| AgriMAXX Exp 2002 | 1.6 | 120.0 - | 12.5 | 13.2 |
| USG 3329 | 1.6 | 124.5 | 13.3 | 17.3 |
| Dyna-Gro 9151 | 1.6 | 124.8 | 8.5 - | 17.3 |
| MBX 223 | 1.6 | 123.8 | 18.8 | 17.3 |
| Progeny #BULLET | 1.7 | 125.5 | 14.0 | 18.1 |
| Hilliard | 1.7 | 123.8 | 17.0 | 16.6 |
| Liberty 5658 | 1.7 | 123.8 | 12.5 | 15.1 |
| MAS #67 | 1.8 | 123.3 | 9.0 - | 17.3 |
| Dyna-Gro 9120 | 1.8 | 123.0 | 12.5 | 16.6 |
| MAS1407-056-6-3 | 1.9 | 125.5 | 14.8 | 18.8 |
| Dyna-Gro 9002 | 1.9 | 124.3 | 11.0 | 18.8 |
| DH13SRW022-23 | 2.0 | 124.8 | 15.0 | 18.8 |
| SY 576 | 2.0 | 130.0 + | 36.3 + | 20.4 |

Table 33. Two-year summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab), 2020 and 2021 harvests, continued.

| Line | FHB Index ¹ (0-9) | Flowering Date (Julian) | FDK ² (%) | ISK Index ³ (%) |
|--------------------------|---------------------------------|-------------------------|----------------------|-------------------------------|
| AgriMAXX 492 | 2.0 | 120.3 - | 12.3 | 17.3 |
| MAS #106 | 2.0 | 121.3 - | 9.0 - | 15.1 |
| AgriMAXX 473 | 2.1 | 126.3 + | 5.3 - | 21.0 |
| SY 547 | 2.3 | 125.8 | 18.8 | 20.3 |
| MAS #133 | 2.3 | 125.3 | 11.8 | 21.8 |
| USG 3118 | 2.3 | 120.5 - | 13.8 | 21.1 |
| 15VDH-SRW02-075 | 2.3 | 124.3 | 21.3 | 21.8 |
| USG 3536 | 2.4 | 128.8 + | 12.8 | 21.0 |
| Progeny #BUSTER | 2.4 | 125.5 | 27.5 + | 22.6 |
| LW2848 | 2.4 | 127.0 + | 15.8 | 23.3 |
| Progeny #BERKELEY | 2.6 | 119.3 - | 15.5 | 21.8 |
| Progeny #CHAD | 2.7 | 119.3 - | 18.0 | 24.1 |
| SY Viper | 2.7 | 120.5 - | 10.3 | 23.3 |
| FLLA10033C-6 | 2.8 | 126.0 | 45.0 + | 24.9 |
| 13VTK59-55 | 2.9 | 123.3 | 11.3 | 25.5 |
| 14VDH-SRW14-150 | 2.9 | 121.3 - | 20.0 | 24.8 |
| 13VTK429-3 | 2.9 | 125.3 | 21.3 | 25.6 |
| 16VDH-SRW09-025 | 2.9 | 123.3 | 18.3 | 25.6 |
| CP8118 | 3.1 | 119.8 - | 11.3 | 26.3 |
| 16VDH-SRW05-205 | 3.1 | 125.0 | 23.0 | 27.1 |
| USG 3230 | 3.1 | 125.5 | 31.3 + | 27.1 |
| SH 4400 | 3.2 | 125.3 | 22.5 | 27.1 |
| Pioneer 26R45 | 3.4 + | 125.3 | 11.3 | 28.5 + |
| SH 7200 | 3.4 + | 121.0 - | 36.3 + | 27.9 + |
| MBX 17-M-245 | 3.6 + | 124.0 | 24.5 + | 29.3 + |
| DH15SRW65-53 | 3.6 + | 124.0 | 31.3 + | 30.1 + |
| 16VDH-SRW03-023 | 3.7 + | 124.5 | 20.8 | 30.8 + |
| SY Richie | 3.9 + | 119.5 - | 22.5 | 31.6 + |
| Dyna-Gro Laverne | 4.1 + | 120.3 - | 30.0 + | 33.1 + |
| Pioneer 26R59 | 5.3 + | 124.0 | 27.5 + | 39.9 + |
| Dyna-Gro Shirley | 5.5 + | 127.0 + | 33.8 + | 40.6 + |
| Average | 2.1 | 124.1 | 16.4 | 19.4 |
| LSD (0.05) | 1.2 | 2.1 | 7.3 | 8.3 |
| C.V. | --- | 1.2 | --- | --- |

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 Warsaw, VA in 2021 and at Mt. Holly, VA in 2020 and were inoculated at booting stage with scabby corn kernels (50g/4-rows).

Table 33. Two-year summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab), 2020 and 2021 harvests, continued.

¹ FHB Index is an overall indicator of scab resistance/susceptibility level and takes into account both incidence and severity where 0 = highly resistant and 9 = highly susceptible.

² FDK (%): Fusarium damaged kernels, visual assessment of the percent of infected kernels.

³ ISK Index takes into account both incidence and severity and is a composite of head and kernel traits; 0 = highly resistant and 100 = highly susceptible.

Table 34. Three-year summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab), 2019, 2020 and 2021 harvests.

| Line | FHB Index ¹ (0-9) | Flowering Date (Julian) | FDK ² (%) | ISK Index ³ (%) |
|--------------------------|---------------------------------|-------------------------|----------------------|-------------------------------|
| MAS #316 | 0.7 - | 126.3 + | 13.8 - | 13.8 - |
| MAS #86 | 0.7 - | 124.0 | 14.5 - | 10.5 - |
| VA17W-75 | 0.8 - | 121.9 | 15.5 | 12.0 - |
| Massey | 1.1 - | 123.2 | 17.0 | 16.8 |
| LW2958 | 1.2 - | 124.7 + | 15.2 | 16.6 |
| MAS #67 | 1.2 | 122.3 | 7.7 - | 13.2 - |
| Progeny #BULLET | 1.3 | 124.8 + | 16.0 | 17.1 |
| MAS #106 | 1.4 | 119.3 - | 8.7 - | 11.8 - |
| VA17W-74 | 1.5 | 121.1 - | 17.5 | 18.6 |
| USG 3316 | 1.5 | 125.0 + | 15.5 | 19.0 |
| Liberty 5658 | 1.5 | 122.2 | 12.3 - | 17.0 |
| SY 576 | 1.5 | 128.0 + | 32.5 + | 19.1 |
| DH13SRW022-23 | 1.5 | 123.2 | 18.3 | 18.3 |
| SY 007 | 1.6 | 122.2 | 12.5 - | 18.3 |
| Hilliard | 1.6 | 122.3 | 20.3 | 18.9 |
| AgriMAXX 473 | 1.7 | 125.0 + | 8.5 - | 20.6 |
| LW2848 | 1.7 | 125.1 + | 13.8 - | 20.0 |
| USG 3536 | 1.7 | 126.6 + | 11.8 - | 18.8 |
| USG 3329 | 1.9 | 123.7 | 14.8 - | 22.1 |
| SY 547 | 2.0 | 124.3 | 25.8 + | 21.9 |
| USG 3118 | 2.1 | 119.4 - | 17.5 | 22.6 |
| Featherstone 125 | 2.1 | 122.4 | 22.5 | 22.2 |
| SY Viper | 2.3 | 120.3 - | 12.8 - | 22.6 |
| 15VDH-SRW02-075 | 2.3 | 123.7 | 24.8 + | 24.7 |
| Progeny #BUSTER | 2.3 | 124.3 | 28.3 + | 25.0 |
| Pioneer 26R45 | 2.4 | 124.4 | 14.2 - | 23.5 |
| 13VTK429-3 | 2.7 | 124.5 | 25.8 + | 27.1 |
| CP8118 | 2.7 | 119.1 - | 15.8 | 27.0 |
| 13VTK59-55 | 2.8 | 122.2 | 15.8 | 27.8 |
| Progeny #BERKELEY | 2.8 | 118.5 - | 27.0 + | 27.2 |
| SH 4400 | 2.9 | 124.6 + | 25.0 + | 28.4 |
| Dyna-Gro Laverne | 3.2 + | 119.5 - | 22.7 | 29.3 + |
| MBX 17-M-245 | 3.3 + | 123.2 | 31.3 + | 30.5 + |
| SY Richie | 3.6 + | 119.1 - | 28.3 + | 32.7 + |
| SH 7200 | 4.2 + | 120.8 - | 44.2 + | 34.7 + |
| Pioneer 26R59 | 4.6 + | 122.3 | 28.3 + | 38.7 + |
| Dyna-Gro Shirley | 4.8 + | 125.7 + | 37.5 + | 39.8 + |

Table 34. Three-year summary of reaction of entries in the Virginia Tech State Wheat Test to Fusarium head blight (scab), 2019, 2020 and 2021 harvests, continued.

| Line | FHB Index ¹ (0-9) | Flowering Date (Julian) | FDK ² (%) | ISK Index ³ (%) |
|------------|---------------------------------|-------------------------|----------------------|-------------------------------|
| Average | 2.1 | 122.9 | 19.8 | 22.4 |
| LSD (0.05) | 0.9 | 1.6 | 4.8 | 6.3 |
| C.V. | --- | 1.1 | --- | --- |

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 Warsaw, VA in 2021 and at Mt. Holly, VA in 2020 and 2019 and were inoculated at booting stage with scabby corn kernels (50g/4-rows).

¹ FHB Index is an overall indicator of scab resistance/susceptibility level and takes into account both incidence and severity where 0 = highly resistant and 9 = highly susceptible.

² FDK (%): Fusarium damaged kernels, visual assessment of the percent of infected kernels.

³ ISK Index takes into account both incidence and severity and is a composite of head and kernel traits; 0 = highly resistant and 100 = highly susceptible.

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