

Revised 2000

SMALL GRAINS IN 2000

The following are the small grain variety recommendations for Virginia in 2000. The recommendations are based on the agronomic performance in barley and wheat variety tests conducted by the Research and Extension Divisions of Virginia Tech in the various agricultural regions of the state.

SMALL GRAIN VARIETIES RECOMMENDED			
Arranged in Order of Maturity			
COASTAL PLAIN	PIEDMONT		WEST OF BLUE RIDGE
	South of James River	North of James River	
<i>Barley</i>			
Callao	Callao	Callao	Callao
Nomini	Nomini	Nomini	Nomini
Starling	Starling	Starling	Starling
<i>Wheat</i>			
FFR 518W	FFR 518W	FFR 518W	FFR 518W
USG 3209	USG 3209	USG 3209	USG 3209
AGS 2000	AGS 2000	AGS 2000	AGS 2000
Pocahontas	Pocahontas	Pocahontas	Pocahontas
Pioneer Brand 26R24	Pioneer Brand 26R24	Pioneer Brand 26R24	Pioneer Brand 26R24
Pioneer Brand 26R46	Pioneer Brand 26R46	Pioneer Brand 26R46	Pioneer Brand 26R46
Pioneer Brand 26R61	Pioneer Brand 26R61	Pioneer Brand 26R61	Pioneer Brand 26R61
Pioneer Brand 2684	Pioneer Brand 2684	Pioneer Brand 2684	Pioneer Brand 2684
Pioneer Brand 2580	Pioneer Brand 2580	Pioneer Brand 2580	Pioneer Brand 2580
Madison	Madison	Madison	Madison
Century II	Century II	Century II	Century II
Pioneer Brand 2643	Pioneer Brand 2643	Pioneer Brand 2643	-----
NK-Coker 9835	NK-Coker 9835	-----	-----
Featherstone 520	Featherstone 520	Featherstone 520	Featherstone 520
USG 3408	USG 3408	USG 3408	USG 3408
Roane	Roane	Roane	Roane
FFR 535	FFR 535	FFR 535	FFR 535
Jackson	Jackson	Jackson	Jackson
		NK Coker 9663	NK Coker 9663

COMMERCIAL BARLEY ENTRIES

Virginia Tech and Virginia Crop Improvement Association, 9142 Atlee Station Road, Mechanicsville, VA 23116 - Callao, Nomini, Starling, and Wysor.

COMMERCIAL AND EXPERIMENTAL WHEAT ENTRIES

AgriBiotech, Inc., 120 Corporate Park Drive, Henderson, NV 89014 - HTW215 and HTW275.
 AGSouth Genetics, PO Box 88823, Dunwoody, GA 30356 - AGS 2000.
 AgriPro Seeds, Inc., PO Box 2962, Shawnee Mission, KS 66201-1362 - AgriPro Mason and AgriPro Patton.
 University of Arkansas, Dept. of Agronomy, 115 Plant Science, Fayetteville, AR 72701 - AR494B-2-2, AR584A-3-1, and AR656-5-1.
 Featherstone Seed Company, 13941 Genito Road, Amelia, VA 23002 - Featherstone 520.
 University of Georgia, GA Station, 1109 Experiment Street, Griffin, GA 30223 - GA90524E35, GA901146E15, and GA88622E51.
 Hoffman Seeds, Inc., 144 Main Street, Landisville, PA 17538 - Hoffman 95 and Century II.
 University of Kentucky, Kentucky Foundation Seed Project, PO Box 11950, Lexington, KY 40579 - KY86C-804-14-2.
 North Carolina State University, 840 Method Rd, Unit 3, Box 7629, Raleigh, NC 27695-7629 - Arcia (triticale).
 Novartis Seeds, Inc., Box 340, Hartsville, SC 29550 - NK Coker 9663, NK Coker 9835, NK Coker 9704, and BL930390.
 Pioneer Hibred International, Inc., Eastern Division, Tipton, IN 47072 - Pioneer Brand 2580, Pioneer Brand 2643, Pioneer Brand 26R46, Pioneer Brand 26R61, Pioneer Brand 2684, Pioneer Brand 26R24, XW681, and XW682.
 Resource Seeds, Inc., 2355 Rice Pike, Union, KY 41091 - Trical 498 (triticale).
 Southern States Cooperative, PO Box 26234, Richmond, VA 23260 - FFR 518W, FFR 522W, FFR 555W, FFR 566W, and FFRXP 2704.
 Uni-South Genetics, 2640-C Nolensville Road, Nashville, TN 37211 - USG 3209 and USG 3408.
 Virginia Tech and Virginia Crop Improvement Association, 9142 Atlee Station Road, Mechanicsville, VA 23111 - Massey, Madison, Jackson, Pocahontas, Roane, and all lines prefixed by VA. Lines prefixed by VAN are joint entries from Virginia and North Carolina.

Appreciation is expressed to Agribiotech, Inc., AgriPro Seeds, Inc., AGSouth Genetics, Featherstone Seed Co., Hoffman Seeds, Inc., Novartis Seeds, Inc., Pioneer Hibred International, Inc., Resource Seeds, Inc., Southern States Cooperative, UniSouth Genetics, Inc., Virginia Crop Improvement Association and the Virginia Small Grains Check-Off Board for their financial support of the small grains variety testing program at Virginia Tech.

Conducted and summarized by the following Virginia Tech employees: Dr. Daniel E. Brann, Extension Agronomist, Grains; Dr. Carl Griffey, Small Grains Breeder; Mr. Harry Behl, Agricultural Supervisor; Ms. Elizabeth Rucker and Mr. Tom Pridgen, Research Associates. Location Supervisors: Mr. Tom Custis (Painter); Mr. Bobby Ashburn (Holland); Mr. Bob Pitman, Mr. Mark Vaughn, and Mr. Charles Sanford (Warsaw); Mr. Bill Wilkinson III and Mr. Bud Wilmouth (Blackstone); Dr. Carl Griffey and Mr. Tom Pridgen (Blacksburg); Mr. Tom Stanley, Mr. Robert A. Clark, and the Mathias Family (Shenandoah Valley); Mr. David Starner and Mr. Denton Dixon (Orange).

INTRODUCTION

The attached tables present results from barley and wheat varietal tests conducted in Virginia in 1998-2000. Yield data are given for individual locations; yield and other performance characteristics are averaged over the number of locations indicated. Performance of a given variety often varies widely over locations and years which makes multiple location-year averages a more valid indication of expected performance than data from a single year or location. All tests in 1999-2000 were grown in seven-inch rows planted at 22 seeds per row foot with the exception of Blacksburg and Warsaw which were grown in six-inch rows at 22 seeds per row foot. The plots were trimmed during the winter to 9 feet in length. Details about management practices for barley and wheat are included in the bulletin. The only herbicide used at most locations was Harmony Extra7.

BARLEY VARIETIES

Virginia has an excellent climate for barley production as shown by multi-year over-location averages of almost 120 bu/a. Two producers in the 2000 Virginia Small Grains Yield Contest had entries over 150 bu/a.

Barley is considered good feed for horses, dairy animals, beef, sheep, and some laying hens. The problem is that these industries in Virginia use only limited quantities of barley. Profitable barley production on more than 50,000 acres in Virginia is going to require revived international market opportunities and/or development of barley varieties that the poultry and swine feeders want to buy. International markets will improve sometime. When the international market does improve, we will need varieties with genetic potential of test weights exceeding 50 lb/bu.. Dr. Carl Griffey, Virginia Tech=s small grains breeder, has developed barley lines that stand better than Callao and have **excellent** test weight. He is also trying to put the poultry and swine industries back in the barley buying mode by developing hullless barley varieties.

The importance of Virginia's barley breeding program to the state and region is evident in the yield results. Note that the top entries are Virginia Tech lines that have excellent test weight, varying maturity and they generally stand better than Callao. The breeding program is preparing for the time when international and regional markets return.

Nomini and Starling continue to perform well and have good but not excellent test weight. Nomini is earlier than average whereas Starling is later than average. Callao, a short bearded variety, has EXCELLENT test weight with a three-year average above 50 lb/bu. Callao is early, short, and has good barley yellow dwarf tolerance. The major negative characteristic of Callao is its tendency to lodge if fertilized to develop high yields. The use of the plant growth regulator Cerone7 and intensive management should be a part of the decision to grow Callao.

Starling is similar to Nomini in yield, but has less than average test weight. Starling is susceptible to net blotch, but generally has the best disease resistance and "stay green" available in any barley. Starling is about three days later than Nomini, and thus should make an excellent companion barley for those wishing to grow barley for silage. Starling is recommended statewide, but will likely show its maximum benefit in the Piedmont and mountainous areas. Seed of Nomini, Callao, and Starling barley should be available to producers in adequate quantities. One or more of the new barley lines will likely be released in the next year and be available to seedsmen by 2003.

The standability of all released barley varieties is greatly improved with the application of Cerone7. Consideration of Cerone7 application is recommended when all current barley varieties are fertilized to develop in excess of 100 bu/acre yields. Close cooperation between the barley breeding programs in Virginia and North Carolina and greater communication with current and potential barley markets can hopefully develop a bright future for a premium quality feed grain.

SUMMARY OF BARLEY MANAGEMENT PRACTICES FOR THE 2000 HARVEST SEASON

Blacksburg - Planted October 7, 1999. Preplant fertilizer was 25-50-100 October 6, 1999. Site was fertilized with 75-0-0 using 30% UAN solution plus 0.6 oz Harmony Extra7 March 10, 2000. Harvest occurred on June 7, 2000.

Blackstone - Planted October 27, 1999. Preplant fertilizer was 300 lb 10-20-20 October 8, 1999. Site was fertilized with 50 lb N using liquid nitrogen + 0.5 oz Harmony Extra7 + 0.125% X-777 February 24, 2000. Liquid nitrogen was applied at 75 lb March 20, 2000. Lannate LV7 at 1 pt was applied May 5, 2000. Harvest occurred on June 8, 2000.

Painter - Planted November 1, 1999. Preplant fertilizer was 500 lbs/A 5-10-10 October 29, 1999. Fifty lbs N using 30% and 0.5 oz Harmony Extra7 were applied March 2, 2000. Thirty lb N using 30% was applied April 7, 2000. Harvest occurred on June 22, 2000.

Warsaw - Planted October 25, 1999. Preplant fertilizer was 30-80-100 applied October 25, 1999. Fertilization at 25-0-0-3 was applied December 17, 1999 with 0.6 oz Harmony Extra7. Fertilization at 35-0-0-4 was applied February 23, 2000. Fertilization at 50-0-0-6 was applied March 25, 2000. Two oz Warrior T7 was applied April 24, 2000. Harvest occurred June 8-9, 2000.

Orange - Planted October 19, 1999. Sixty lbs N were applied March 29, 2000. Harvest occurred on June 12-20, 2000.

Table 1. Yield performance of entries in the Virginia Tech Barley Test, 2000 harvest.*

Brand/Variety	Blacksburg	Blackstone	Warsaw	Orange	Average
		bu/acre			
NOMINI	135 +	C	133	122 +	130 +
STARLING	132 +	C	132	100	121
VA97B-175	126	111	141	97	119
VA97B-178	124	107	146 +	93	118
VA96-44-304	116	109	137	111	118
VA97B-176	133 +	101	139	95	117
VA96-44-307	120	109	138	100	117
VA97B-389	117	108	127	116	117
VA96B-113	133 +	97	137	103	117
VA97B-398	125	110	132	95	116
VA96-44-321	131	100	131	103	116
VA98B-213	131	95	146 +	94	116
CALLAO	124	109	141	87	115
VA97B-285	124	103	125	110	115
VA98B-21	114 -	105	145 +	93	114
VA97B-188	117	103	130	108	114
VA98B-210	120	102	132	103	114
VA96B-248	121	93	138	101	113
VA92-42-46	121	C	126	92	113
VA98B-112	131	96	141	83	113
VA98B-204	136 +	94	135	83	112
VA98B-178	124	106	133	86	112
WYSOR	124	C	116 -	95	112
VA97B-275	119	98	133	92	111
NC96-2604	129	88	123	105	111
NC97-7613	114 -	95	123	106	110
VA97B-388	128	92	119 -	97	109
VA98B-264	118	101	130	82	108
NC97-7488	106 -	98	118 -	98	105 -
VA98B-258	114 -	91	137	79	105 -
NC97-7493	106 -	87	117 -	80	97 -
Location Average	123	100	132	97	114
L.S.D. (0.05)	9	15	13	22	8
C.V.	5	11	7	16	10
Statewide Average	114				

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

Table 2. Two year average yield performance of entries in the Virginia Tech Barley Tests, 1999 and 2000 harvests.*

Brand/Variety	Blacksburg	Orange bu/acre	Warsaw	Average
VA97B-178	141	109	154 +	135 +
VA97B-176	145 +	102	153 +	133
NOMINI	137	117	141	132
VA96-44-307	137	107	150	131
VA96-44-321	139	109	145	131
VA96-44-304	131	111	148	130
VA96B-248	133	109	146	129
VA97B-388	143	113	129 -	128
STARLING	136	109	139	128
VA97B-398	135	104	144	128
VA97B-389	133	114	137	128
VA97B-275	134	100	148	127
CALLAO	133	98	144	125
WYSOR	133	103	130 -	122 -
Location Average	137	107	143	129
L.S.D. (0.05)	7	12	8	5
C.V.	5	12	5	7
Statewide Average	129			

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

Table 3. Three year average yield performance of entries in the Virginia Tech Barley Tests, 1998, 1999, and 2000 harvests.*

Brand/Variety	Blacksburg	Orange bu/acre	Warsaw	Average
VA97B-178	130 +	97	143 +	123 +
NOMINI	126	107 +	134	122
VA96B-248	124	98	141	121
VA96-44-307	126	96	137	120
VA96-44-321	125	95	141	120
STARLING	126	97	134	119
VA96-44-304	118 -	97	140	118
CALLAO	124	89	138	117
WYSOR	118 -	90	125 -	111 -
Location Average	124	96	137	119
L.S.D. (0.05)	6	9	6	4
C.V.	6	12	5	8
Statewide Average	119			

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

Table 4. Summary of performance of entries in the Virginia Tech Barley Test, 2000 harvest*.

Brand/Variety	Yield (Bu/A) (4)	Test Weight (Lb) (4)	Date Headed (Mar. 31+) (4)	Height (In) (3)	Lodging** (0.2-10) (5)	Leaf Rust (0-9)‡ (2)	Powdery Mildew (2)
NOMINI	130 +	47.6 -	16 -	43 +	1.0 -	5	0
STARLING	121	47.4 -	20 +	42 +	1.3	4 -	1
VA97B-175	119	51.8 +	15 -	35 -	1.7	5	0
VA97B-178	118	51.6 +	17	36 -	2.6	4 -	0
VA96-44-304	118	50.9	12 -	34 -	1.7	4 -	1
VA96B-113	117	49.6 -	17	42 +	1.7	5	0
VA97B-389	117	52.3 +	19 +	39 +	0.9 -	7 +	0
VA97B-176	117	52.6 +	15 -	36 -	1.7	4 -	0
VA96-44-307	117	50.3	13 -	35 -	1.0 -	4 -	0
VA98B-213	116	50.8	17	36 -	1.6	6 +	0
VA97B-398	116	52.1 +	14 -	35 -	2.3	5	0
VA96-44-321	116	51.4 +	17	37	1.0 -	5	0
VA97B-285	115	52.5 +	19 +	38 +	3.0 +	5	0
CALLAO	115	52.0 +	15 -	35 -	4.4 +	5	0
VA98B-210	114	51.7 +	18 +	32 -	0.5 -	5	1
VA97B-188	114	51.6 +	16 -	36 -	1.6	6 +	0
VA98B-21	114	52.0 +	14 -	37	3.4 +	5	0
VA98B-112	113	51.3 +	16 -	37	1.5	5	0
VA96B-248	113	51.6 +	16 -	36 -	1.6	5	0
VA92-42-46	113	49.6 -	17	43 +	1.1 -	0 -	0
VA98B-178	112	50.1	20 +	40 +	2.8 +	5	1
WYSOR	112	48.9 -	20 +	43 +	1.8	7 +	0
VA98B-204	112	50.7	17	37	1.6	5	0
VA97B-275	111	51.9 +	14 -	35 -	3.8 +	5	0
NC96-2604	111	45.5 -	23 +	40 +	2.3	4 -	5 +
NC97-7613	110	46.4 -	19 +	37	2.1	4 -	3 +
VA97B-388	109	50.6	21 +	39 +	1.5	8 +	0
VA98B-264	108	52.2 +	14 -	31 -	2.2	4 -	0
NC97-7488	105 -	50.3	19 +	39 +	2.4	7 +	1
VA98B-258	105 -	52.0 +	15 -	32 -	1.6	4 -	0
NC97-7493	97 -	50.5	19 +	39 +	2.0	6 +	1
Test Average	114	50.6	17	37	1.9	5	1
L.S.D. (0.05)	8	0.7	1	1	0.8	1	1
C.V.	10	1.9	5	3	---	---	---

* Varieties are ordered by descending statewide averages. A plus or minus sign indicates a performance significantly above or below the test average. The number in parentheses below column headings indicates the number of locations on which data are based. There are four replications at each location.

** Belgian Lodging Scale = Area X Intensity X 0.2. Area = 1-10, where 1 is barley unaffected and 10 is entire plot affected and Intensity=1-5, where 1 is barley standing upright and 5 is barley lying totally flat.

‡ The 0-9 ratings indicate relative disease intensity where 0=none and 9=total plant infection.

WHEAT VARIETIES

When considering wheat variety performance, it is necessary to take seed treatment used on the varieties into consideration. Entries in this test have different seed treatments that may greatly impact performance. Seed treatments are indicated by an acronym in parentheses following the name. For example, HTW215(RT) indicates that this entry was treated with raxil and thiram. AA@ is Apron7, AB@ is Baytan7, AC@ is Captan7, AD@ is Dividend7, AR@ is raxil, AT@ is thiram, and AV@ is Vitavax7. Virginia Tech experimental lines and some of the public varieties such as Massey, Pocahontas, and Roane were treated with raxil and thiram.

Virginia=s well-drained soils are highly productive for wheat even with the weather variations we experience. Note that the best varieties of wheat yielded above 90 bu/a at two locations and averaged over 80 bu/a statewide. The major current problem in Virginia-style wheat production continues to be low prices, especially for soft red winter wheat in the Mid-Atlantic region.

Virginia Tech=s small grain variety testing program evaluates varieties statewide from Painter on the Eastern Shore to Blacksburg in southwestern Virginia. The no-till test planted into corn stubble was repeated near Warsaw, Virginia and is planned to be a regular part of the program. Since 1999 we expanded the tests at Blacksburg, Warsaw and Painter to evaluate genetic potential and varietal responses to a common seed treatment of Baytan7, Captan7, and Gaucho7 and application of Tilt7 fungicide compared to seed treatments as generally marketed and no foliar fungicide.

The extreme variation in weather conditions of the past three seasons demonstrates the importance of evaluating a variety over locations and years. Weather variations make it extremely important to evaluate varieties over years and locations. It is also important to evaluate performance of varieties over locations within regions of the state. Varieties that do well on the Eastern Shore and upper Coastal Plain may not do well at Blacksburg and vice versa. Diseases such as powdery mildew are often more severe in eastern Virginia due to climate and the concentration of wheat in the rotations. Leaf rust is often a greater potential yield- and test weight-reducing factor in the Tidewater region than in other areas of the state. The other factor that should be considered is changes in disease susceptibility of varieties over years. For example, Roane wheat was released for its high yield potential and excellent disease resistance characteristics. Roane and Pocahontas had excellent resistance to powdery mildew until this year when a new race of powdery mildew emerged in the Warsaw area that was able to attack them. Use each new year=s results to re-evaluate the best varieties and management practices (e.g. seed and foliar fungicides) for individual farms.

Varieties emerging as yield leaders the past two years are Pioneer Brand 26R24 (with Baytan) and USG 3209. A new variety, Pioneer Brand 26R24 had the highest yield in both regions and highest average yield statewide with 88 bu/a. It is moderately early, has good test weight, is taller than average, but has good standability. With Baytan7 seed treatment it has shown good resistance to powdery mildew. It is susceptible to wheat spindle streak virus. USG 3209 also did well in all areas of the state producing a statewide average of 86 bu/a. It is early, shorter than average, has fair standability and good test weight. USG 3209 is a Uni-South Genetics variety grown by several Virginia seedsmen.

AGS 2000, FFR 518, Century II, Pioneer Brand 26R46, Jackson, Pioneer Brand 26R61, USG 3408, Pioneer Brand 2580 and Roane all averaged 80-85 bu/a statewide over the past two years. All of the above varieties did well in both regions of the state. AGS 2000 is a new variety marketed by AGSouth Genetics.

It is moderately early, of average height, has fair standability and good resistance to powdery mildew and leaf rust. FFR 518 has been one of the top yielders over three years. It is early, has good disease resistance and is shorter than average. Standability of FFR 518 is less than average. It is advisable to consider use of Cerone7 as an anti-lodging agent when this variety is fertilized to achieve its full yield potential. Century II marketed by Hoffman Seeds, Inc. is moderately early, of average height and average standability, and has excellent test weight. It is moderately susceptible to powdery mildew. This variety has been one of the top yielders over three years. Pioneer Brand 26R46 is early, of average height, and has good standability. It has good leaf rust resistance and shows good resistance to powdery mildew when grown with Baytan7 seed treatment. The other new Pioneer line, Pioneer Brand 26R61, is moderately early, has good test weight, and is taller than average with good standability. Pioneer Brand 26R61 has good leaf rust resistance and good resistance to powdery mildew when grown with Baytan7 seed treatment. Pioneer Brand 2580 with Baytan7 continues to be in the top yield group.

Roane, a new Virginia Tech public release, is medium maturity, average height with good standability, excellent test weight, and good yield potential. Roane has been one of the top yielding varieties over three years testing at all locations. It has performed especially well in the Piedmont and Blue Ridge region exceeding all other released varieties by at least five bu/a at Blacksburg over three years.

Roane=s yield performance in 2000 was reduced by powdery mildew at Warsaw and Painter. At Painter where powdery mildew and leaf rust were reduced by seed treatment and Tilt7 application at heading, Roane produced 15 bu/a more

than Roane treated only with raxil and thiram and no spring fungicide. Seed of this new variety will be available to producers this fall.

USG 3408 is of medium maturity, average height and has average standability. It has moderately good resistance to powdery mildew and excellent test weight. It is susceptible to leaf rust. Jackson continues to be one of the top yielding varieties when treated with Baytan7 seed treatment.

Other varieties yielding above 70 bu/a statewide in 2000 and over two years include Pioneer Brand 2684 with Baytan7, Pocahontas, Coker 9835, Featherstone 520 with Baytan7, Madison, Coker 9704, Pioneer Brand 2643 with Baytan7, AgriPro Patton with Baytan7, FFR 522 with Baytan7, and FFR 566. Refer to Table 8 for additional characteristics about these varieties and Table 7 for three-year yield data by location.

Note that seven of the top 10 entries are lines from Virginia Tech's breeding program. All of these lines have excellent resistance to powdery mildew, good standability, and all but one have good test weight. The future for adapted, highly productive varieties looks good!

Low price, due partially to marketing challenges, is the major problem for wheat producers in Virginia. World markets generally prefer white wheat. VA 96W-403WS is a white seeded soft wheat. It has produced average yields in our tests the past two years. Maybe one day we will be producing white wheat for specific higher value markets.

SUMMARY OF WHEAT MANAGEMENT PRACTICES FOR THE 1999 HARVEST SEASON

Blacksburg - Planted October 8, 1999. Preplant fertilizer was 25-50-100 applied October 6, 1999. Harmony Extra7 was applied at 0.6 oz on March 10, 2000 with 75-0-0 using 30% UAN solution. Harvest occurred on June 26 - July 1, 2000..

Warsaw - Planted October 26, 1999. Preplant fertilizer was 30-80-100. 25-0-0-3 was applied December 17, 1999 with 0.6 oz Harmony Extra7. 35-0-0-4 was applied February 23, 2000. 60-0-0-7 was applied March 25, 2000. Two oz of Warrior T7 were applied April 24, 2000. Harvest occurred June 21, 2000.

Blackstone - Planted October 27, 1999. Preplant fertilizer was 300 lb 10-20-20 October 8, 1999. Site was fertilized with 50 lb N using liquid nitrogen + 0.5 oz Harmony Extra7 + 0.125% X-777 February 24, 2000. Liquid nitrogen was applied at 75 lb March 20, 2000. Lannate LV7 at 1 pt was applied May 5, 2000. Harvest occurred on June 23, 2000.

Painter - Planted November 1, 1999. Preplant fertilizer was 500 lbs/A 5-10-10 October 29, 1999. Fifty lb N using 30% and 0.5 oz Harmony Extra7 were applied March 2, 2000. Fifty lb N using 30% were applied April 7, 2000. Harvest occurred on June 21, 2000.

Holland -Planted November 2, 1999. Preplant fertilizer was 600 lbs 5-15-20 October 29, 1999. On February 9, 2000 40 units of N + 0.33 oz Harmony Extra7 was applied. Eighty units N were applied March 8, 2000. Harvest occurred June 9, 2000.

Orange -Planted October 19, 1999. Sixty lbs N were applied March 29, 2000. Harvest occurred on June 23, 2000.

Shenandoah - Planted October 25, 1999. Forty lbs N + 0.5 oz Harmony Extra7 were applied February 9, 2000. Sixty lbs N were applied with 0.5 pt 2,4-D March 31, 2000. Harvest occurred June 27, 2000.

Warsaw No-Till - Planted October 15, 1999. Preplant fertilizer was 30-80-100. Roundup Ultra7 was applied October 8 at a rate of 2 qt. 25-0-0-3 plus 0.6 oz Harmony Extra7 was applied December 17, 1999. 40-0-0-5 was applied February 25, 2000. 65-0-0-8 was applied March 25, 2000. Two oz Warrior t7 was applied April 24, 2000. Wheat was harvested June 21, 2000.

Table 5. Yield performance of entries in the Virginia Tech Wheat Test, 2000 harvest.*

Brand/Variety	Coastal Plain Region				Piedmont and Blue Ridge Region				Average	Statewide Average
	Holland	Painter	Warsaw	Average	Blackstone	Blacksburg	Orange	Shenandoah		
TRICAL 498er	80+	87	96 +	87+	64	82	92	89+	83	85+
USG 3209	75+	85	96 +	84+	69+	91	86	81+	82	83+
PIONEER 26R24(B)	71+	86	86	80	68	96+	93 +	80+	85+	83+
VA97W-377	63	88	97 +	81	70+	86	94 +	83+	84+	83+
VA98W-591	72+	81	93	81	72+	88	94 +	74	82	82+
VAN98W-128	69	86	86	79	71+	82	101+	79	84+	82+
VA96W-250	69	87	100+	84+	68	94+	82	80+	81	82+
VA96W-348	72+	90+	94 +	84+	71+	88	80	76	79	81+
VA97W-414	68	85	90	80	70+	90	90	75	81	81+
AGS 2000	72+	88	78	77	69+	95+	82	86+	83	81+
VA96W-247	70	87	91	82+	64	93+	81	75	78	80+
VA98W-593	72+	87	92	82+	70+	80	88	74	78	80+
PIONEER XW681	69	81	83	77	62	91	96 +	78	82	80+
PIONEER 26R61(B)	69	82	87	78	64	89	94 +	79	82	80+
VAN97W-386	67	91+	97 +	83+	62	90	81	79	78	80+
VA97W-206	72+	79	97 +	82+	60	98+	80	76	78	80+
VA97W-375	69	87	90	80	62	86	85	77	78	79+
VA96W-158	64	94+	94 +	81	64	93+	82	73	78	79+
CENTURY II(D)	70	87	96 +	81	59	86	91	75	78	79+
VA98W-415	73+	85	80	79	62	92	84	76	79	79+
VA98W-68	68	80	88	77	73+	80	87	78	80	79+
PIONEER XW682(B)	69	84	80	77	64	80	94 +	77	80	78+
VA98W-749	63	80	97 +	78	57	79	95 +	76	78	78+
VA98W-692	73+	77	87	78	62	92	77	80+	78	78+
FFR 518(R)	71+	82	85	79	74+	80	82	75	78	78+
VA97W-24	68	84	94 +	80	65	93+	74	68	74	77
VA98W-586	67	79	80	75	62	91	82	75	78	77
VA97W-213	69	73	92	77	58	89	76	77	75	76
PIONEER 2580(B)	63	73	76	70	62	89	86	79	80	76
VA96W-375	62	73	75	69	58	96+	91	72	80	75
VA98W-77	65	79	85	75	63	81	75	78	75	75
VA98W-411	65	78	84	75	61	89	78	73	75	75
VA98W-769	61	80	83	73	63	86	81	77	77	75
PIONEER 2684(B)	68	75	80	74	59	84	83	75	76	75
VA96-54-326	62	81	87	75	66	85	80	71	76	75
PIONEER 2643(B)	69	70	88	76	62	91	79	69	75	75
VA96W-270	64	81	88	76	65	75 -	91	61 -	74	75
JACKSON(B)	67	69	75	70	55	92	87	71	77	74
VA97W-533	62	74	81	71	64	81	82	73	75	74
VA97W-469	61	79	80	72	62	86	79	73	75	74
VAN98W-346	62	78	91	75	61	78	78	74	73	74
FEATHERSTONE 520(B)	65	81	78	74	58	81	84	70	74	74
PIONEER 26R46(B)	65	77	72	70	66	84	87	69	76	74
ROANE	69	68	69 -	69	63	94+	80	78	79	74
USG 3408	72+	81	71	74	59	85	84	69	75	74
POCAHONTAS	66	78	69 -	70	63	82	87	73	77	74
FFR 535	66	70	79	71	64	81	78	72	74	73
AGRIPRO PATTON(B)	54 -	78	91	72	57	74 -	84	73	73	73
GA88622E51	59	83	80	73	53 -	82	86	70	74	73
AR494B-2-2(R)	63	67 -	77	68	58	97+	80	70	76	73
ARCIAer	66	84	77	74	67	71 -	76	75	72	73
COKER BL930390(DA)	53 -	75	85	68	57	91	79	67	74	72 -
VA98W-663	65	74	78	72	64	72 -	73 -	76	72	72 -
COKER 9704(DA)	59	72	78	69	56	87	81	68	73	71 -
MADISON(B)	59	77	86	72	55	79	83	64 -	71	71 -
FFR 522(B)	64	81	77	73	53 -	77	78	68	70	71 -
FFR 566(R)	55 -	71	75	66 -	60	74 -	87	72	74	71 -
VA96W-403WS	58	76	81	70	61	73 -	75	68	70	70 -
COKER 9835(DA)	65	72	81	72	59	79	76	62 -	69	70 -
AR584A-3-1(R)	54 -	73	71	65 -	55	85	83	71	74	70 -
HTW215(RT)	58	73	71	66 -	55	77	82	67	71	69 -
MASSEY	59	68	82	69	59	75 -	78	63 -	69	69 -
KY89C-804-14-2(R)	56 -	66 -	73	64 -	51 -	85	84	62 -	71	68 -
AGRIPRO MASON(B)	59	71	66 -	65 -	55	81	79	67	71	68 -

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

er Wheat/rye cross (triticale), not a wheat line.

Table 7. Three year average yield performance of entries in the Virginia Tech Wheat Tests, 1998, 1999, and 2000 harvests.*

Brand/Variety	Coastal Plain Region				Piedmont and Blue Ridge Region				Statewide Average
	Holland	Painter	Warsaw	Average	Blacksburg bu/a	Orange	Shenandoah	Average	
VA96W-250	63 +	93 +	84 +	81 +	97 +	82	81 +	87 +	84 +
VA96W-247	60	90 +	82 +	78	96 +	83	77	86 +	82 +
VA97W-375	59	90 +	79	76	90 +	84	78	84	80 +
VA96W-348	65 +	87 +	85 +	79 +	84	75	76	78	79 +
ROANE	61	82	74	73	94 +	81	78	85	79 +
PIONEER 2580	59	84	78	74	89	84	78	84	79 +
FFR 518	61	88 +	84 +	78	85	81	73	80	79 +
CENTURY II	58	91 +	82 +	78	86	85	72	81	79 +
JACKSON	60	85	78	75	88	83	76	82	79 +
TRICAL 498 <i>er</i>	61	78 -	78	72	91 +	72 -	93 +	85	79 +
POCAHONTAS	55	90 +	75	74	88	83	75	82	78 +
PIONEER 26R46	54	86	80 +	74	87	85	73	82	78 +
USG 3209	59	85	82 +	76	86	79	77	81	78 +
VA97W-533	60	83	76	73	87	81	76	82	77
USG 3408	59	91 +	78	76	86	80	66 -	78	77
AGRIPRO PATTON	49 -	84	74	70	87	84	76	83	76
VA96-54-326	58	87 +	77	75	84	77	72	78	76
MADISON	52 -	78 -	76	69	86	80	75	81	75
PIONEER 26R61	54	84	73	71	78 -	80	79 +	79	75
PIONEER 2684	55	83	75	71	83	79	75	79	75
PIONEER 2643	57	80	75	71	89	77	73	80	75
COKER 9835	57	79 -	75	70	83	78	70	77	74 -
AGRIPRO MASON	54	83	70 -	70	87	76	74	79	74 -
FFR 522	56	81	71	70	82	78	72	78	74 -
COKER 9663	55	75 -	68 -	66	88	80	72	80	73 -
FFR 566	50 -	80	68 -	66	77 -	78	72	76	71 -
FEATHERSTONE 520	54	77 -	71	68	75 -	78	69 -	74 -	71 -
COKER 9704	53	78 -	72	68	78 -	76	68 -	74 -	71 -
FFR 555W	50 -	69 -	64 -	62 -	84	81	68 -	78	70 -
MASSEY	54	75 -	69 -	66	73 -	76	64 -	71 -	69 -
HOFFMAN 95	50 -	74 -	62 -	63 -	75 -	79	71	75	69 -
Location Average	57	83	75	72	85	80	74	80	76
L.S.D. (0.05)	5	4	5	7	5	6	5	6	2
C.V.	10	6	9	21	8	9	9	16	10
Statewide Average	76								

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

er Wheat/rye cross (triticale), not a wheat line.

Table 8. Summary of performance of entries in the Virginia Tech Wheat Test, 2000 harvest.*

Barley

Brand/Variety	Yield (Bu/A) (7)	Test Weight (Lb) (6)	Date Headed (Mar 31+) (4)	Height (In) (3)	Lodging** (0.2-10) (5)	Powdery	Leaf	Yellow
						Mildew (2)	Rust (0-9) <	Dwarf (2)
TRICAL 498er	85 +	48.0 -	17 -	46	0.6	0 -	2	2
USG 3209	83 +	57.3	27 -	36	1.8 +	0 -	5 +	2
PIONEER 26R24(B)	83 +	57.4 +	29 -	40	0.8	0 -	3	2
VA97W-377	83 +	57.2	31 +	35	0.6	0 -	5 +	2
VA98W-591	82 +	59.0 +	31 +	36	0.6	0 -	1 -	2
VAN98W-128	82 +	57.4 +	29 -	38	0.5	1	1 -	2
VA96W-250	82 +	57.7 +	29 -	36	1.1	0 -	7 +	2
VA96W-348	81 +	55.3 -	29 -	37	1.8 +	0 -	3	2
VA97W-414	81 +	58.8 +	25 -	39	0.9	0 -	3	2
AGS 2000	81 +	57.8 +	28 -	39	1.5	0 -	0 -	2
VA96W-247	80 +	57.4 +	31 +	37	1.4	0 -	6 +	2
VA98W-593	80 +	58.9 +	30	37	1.0	0 -	0 -	2
PIONEER XW681	80 +	56.2 -	30	36	0.2 -	0 -	5 +	2
PIONEER 26R61(B)	80 +	59.1 +	29 -	41	0.3 -	0 -	2	2
VAN97W-386	80 +	57.2	33 +	37	0.9	0 -	7 +	2
VA97W-206	80 +	57.3	32 +	37	1.0	0 -	3	2
VA97W-375	79 +	56.7	30	36	0.9	0 -	0 -	2
VA96W-158	79 +	56.8	26 -	40	0.9	1	2	2
CENTURY II(D)	79 +	58.2 +	29 -	39	1.4	3 +	3	2
VA98W-415	79 +	58.3 +	31 +	35	0.3 -	3 +	3	2
VA98W-68	79 +	56.8	29 -	35	1.1	0 -	1 -	2
PIONEER XW682(B)	78 +	57.2	29 -	42	0.7	0 -	4	2
VA98W-749	78 +	56.8	32 +	37	1.1	0 -	0 -	2
VA98W-692	78 +	57.4 +	30	35	1.1	1	3	2
FFR 518(R)	78 +	56.3 -	25 -	36	2.2 +	0 -	0 -	2
VA97W-24	77	56.6	33 +	40	0.7	0 -	4	2
VA98W-586	77	57.5 +	30	37	0.5	0 -	1 -	2
VA97W-213	76	56.0 -	33 +	36	0.4	1	6 +	2
PIONEER 2580(B)	76	56.1 -	28 -	38	0.3 -	0 -	3	2
VA96W-375	75	56.5	31 +	38	0.4	2 +	5 +	2
VA98W-77	75	56.9	29 -	37	1.2	0 -	1 -	2
VA98W-411	75	58.3 +	33 +	37	1.2	1	1 -	2
VA98W-769	75	56.0 -	31 +	36	0.3 -	1	0 -	3 +
PIONEER 2684(B)	75	58.6 +	27 -	37	1.0	1	4	2
VA96-54-326	75	58.2 +	29 -	39	0.8	0 -	4	2
PIONEER 2643(B)	75	57.0	29 -	34	0.2 -	0 -	3	2
VA96W-270	75	57.5 +	28 -	40	0.4	1	6 +	2
JACKSON(B)	74	57.7 +	32 +	39	1.7 +	1	5 +	2
VA97W-533	74	57.9 +	31 +	37	0.9	0 -	4	3 +
VA97W-469	74	56.2 -	30	39	1.3	0 -	4	2
VAN98W-346	74	58.0 +	31 +	37	1.3	1	3	3 +
FEATHERSTONE 520(B)	74	58.2 +	30	39	2.4 +	1	4	2
PIONEER 26R46(B)	74	57.1	28 -	39	0.2 -	0 -	1 -	2
ROANE	74	58.8 +	33 +	37	0.7	2 +	3	2
USG 3408	74	57.7 +	32 +	38	0.8	1	5 +	2
POCAHONTAS	74	56.5	29 -	38	1.0	2 +	5 +	2
FFR 535	73	58.7 +	32 +	37	1.5	0 -	3	2
AGRIPRO PATTON(B)	73	56.5	31 +	42	0.5	0 -	1 -	3 +
GA88622E51	73	56.0 -	32 +	37	1.0	1	0 -	2
AR494B-2-2(R)	73	57.2	31 +	41	2.1 +	1	5 +	2
ARCIAer	73	51.3 -	19 -	48	1.0	0 -	0 -	2
COKER BL930390(DA)	72 -	56.2 -	34 +	39	2.5 +	2 +	0 -	2
VA98W-663	72 -	56.6	29 -	37	0.3 -	2 +	1 -	3 +

COKER 9704(DA)	71 -	58.5 +	30	37	1.4	3 +	1 -	2
MADISON(B)	71 -	55.5 -	29 -	40	1.2	1	5 +	2
FFR 522(B)	71 -	58.2 +	29 -	38	1.3	3 +	0 -	3 +
FFR 566(R)	71 -	57.9 +	33 +	40	0.3 -	0 -	1 -	3 +
VA96W-403WS	70 -	55.2 -	34 +	41	0.8	1	3	2
COKER 9835(DA)	70 -	56.2 -	30	35	0.4	1	4	2
AR584A-3-1(R)	70 -	56.8	31 +	43	2.3 +	2 +	0 -	2
HTW215(RT)	69 -	56.0 -	29 -	38	1.2	3 +	7 +	2
MASSEY	69 -	57.4 +	29 -	42	2.6 +	1	9 +	2
KY89C-804-14-2(R)	68 -	55.0 -	32 +	39	1.8 +	1	6 +	2
AGRIPRO MASON(B)	68 -	56.4 -	28 -	39	0.8	3 +	0 -	3 +
COKER 9663(DA)	68 -	57.7 +	29 -	43	1.6	3 +	0 -	2
GA90524E35(D)	67 -	54.4 -	27 -	34	2.1 +	1	0 -	2
GA901146E15(D)	65 -	57.8 +	33 +	39	0.3 -	2 +	2	3 +
AR656-5-1(R)	65 -	56.7	34 +	39	0.4	2 +	4	3 +
HOFFMAN 95(D)	65 -	58.2 +	34 +	39	0.3 -	1	3	4 +
HTW275(RT)	64 -	56.3 -	30	37	0.6	3 +	2	2
FFR 555W(B)	63 -	55.3 -	33 +	38	0.3 -	5 +	6 +	4 +
Test Average	75	56.9	30	38	1.0	1	3	2
L.S.D. (0.05)	3	0.5	1	C	0.7	1	2	1
C.V.	8	1.5	3	3	---	---	---	---

* Varieties are ordered by descending statewide averages. A plus or minus sign indicates a performance significantly above or below the test average. The number in parentheses below column headings indicates the number of locations on which data are based.

** Belgian Lodging Scale = Area X Intensity X 0.2. Area = 1-10, where 1 is wheat unaffected and 10 is entire plot affected and Intensity=1-5, where 1 is wheat standing upright and 5 is wheat lying totally flat.

∞ The 0-9 ratings indicate relative disease intensity where 0=none and 9=total plant infection.

eT Wheat/rye cross (triticale), not a wheat line.

WHEAT PLANTED NO-TILL INTO CORN STUBBLE

Wheat was planted no-till into corn stubble on a field adjacent to the Eastern Virginia AREC near Warsaw. Cooperator, Charles Sanford, harvested his no-till corn and shredded the stalks. The soil is a Suffolk sandy loam. Seventy-one varieties/lines of wheat were planted into corn stubble with a Hege plot drill at 30 seeds/row foot on October 15, 1999. Fall fertilization of 30-80-100 was applied pre-plant followed by Roundup7 at 2qt/a. Harmony Extra7 was applied at 0.6 oz/a on December 17, 1999. Top-dressed fertilizer was applied at 25-0-0-3 on December 17, 1999, at 40-0-0-5 on February 25, 2000, and at 65-0-0-8 on March 25, 2000. Warrior T7 at 2 oz/a was applied April 24, 2000. Powdery mildew ratings were low on all varieties except FFR 555 and Pocahontas. Wheat spindle streak virus was very evident in the spring making the included ratings by Dr. Erik Stromberg possible. An excellent stand was obtained and the wheat grew well all season.

The best varieties for conventional tillage also tended to be near the top yielders when planted no-till into corn. The top-yielding released varieties when planted no-till into corn in 2000 were Agripro Patton (with Baytan7), USG 3209, Pioneer Brand 26R24 (with Baytan7), Century II, and Pioneer Brand 2684 (with Baytan7). Two-year yields show Pioneer Brand 26R61 (with Baytan7), USG 3209, Pioneer Brand 26R24 (with Baytan7), Madison, Massey, Pioneer Brand 2643 (with Baytan7), Pioneer Brand 2684 (with Baytan7) and Featherstone 520 (with Baytan7) to be among the top. When planting no-till into corn grain stubble, fusarium scab is a concern. Results from one year=s research by Dr. Carl Griffey=s group at Virginia Tech are shown in Table 11. The major two columns to evaluate are scab severity and scabby seeds. Top-yielding no-till varieties showing reduced infection from scab include USG 3209, Agripro Patton (B), and Massey. Pioneer Brand 26R24 is a top yielder, but scab infection levels were average. Pioneer Brand 2643 may not be a good variety to no-till into corn residue due to its short height, which generally increases incidence and possibly severity of scab. Roane has produced less than average yields in the no-till tests, but its resistance to severe scab infection may make it a good variety to grow when planting no-till into corn residue.

Wheat varieties that have excellent yield potential but may not be a good choice when no-tilling into corn residue include Jackson, Coker 9835, Pocahontas, USG 3408, Pioneer Brand 2580 and FFR 518. The wheat scab data in Table 11 are for only one year, but other experiments support the scab resistance ratings. Results may change as more information becomes available. Scab probability is not increased when no-tilling into soybean or cotton residue. However selection of varieties with good seedling vigor and preferably with resistance to wheat spindle streak virus (WSSV) could be important because no-till tends to make soils wetter during the winter which favors development of WSSV.

Table 9. Summary of performance of entries in the Virginia Tech No-Till Wheat Test at Warsaw, 1998, 1999, and 2000 harvests.*

Brand/Variety	3-year	2-year	1-year	Test	Date			Wheat
	Average Yield			Weight	Headed	Height	Lodging**	Spindle
	(Bu/A)			(Lb)	(Mar 31+)	(In)	(0.2-10)	Streak☉
VA98W-591	---	---	97 +	60.5 +	32 +	34 -	0.8	R
VA97W-24	C	81 +	97 +	57.9	28	39 +	0.3	R
VA97W-206	---	---	96 +	57.6	27	37	0.4	MS
VAN98W-128	C	---	96 +	57.8	21 -	36	0.3	R
VA97W-213	C	78 +	95 +	57.2 -	29 +	35 -	0.2	MS
VA96W-348	69 +	82 +	95 +	56.2 -	23	36	4.8 +	R
VA96W-247	66 +	80 +	94 +	58.9 +	27	37	2.2	R
VA96W-158	C	77 +	94 +	56.1 -	19 -	41 +	3.1	MS
PIONEER XW681	---	---	93 +	57.5	23	34 -	0.2	S
VA96W-270	---	78 +	93 +	58.0	22	40 +	1.4	R
AGRIPRO PATTON(B)	62 +	69	92 +	57.8	26	40 +	0.5	R
VA96W-250	66 +	78 +	92 +	58.8 +	23	35 -	2.2	R
VAN97W-386	C	C	92 +	59.3 +	28	36	1.2	R
VAN98W-346	C	---	91 +	59.1 +	26	37	1.6	R
VA96W-403WS	C	70	90	58.3	30 +	41 +	0.4	R
VA98W-663	---	---	89	57.5	23	36	0.2	R
PIONEER 26R24(B)	C	72	89	58.4	24	37	0.6	S
VA98W-68	C	---	88	58.0	25	33 -	1.8	R
VA97W-375	---	73	88	58.2	25	34 -	0.5	R
USG 3209	62 +	74	86	58.6 +	24	36	0.9	R

VA98W-77	---	---	86	58.0	23	37	2.0	R
VA98W-593	---	---	86	59.6 +	30 +	34 -	0.8	R
VA97W-414	C	---	85	59.5 +	21 -	36	1.0	R
VA98W-769	C	---	85	57.3 -	27	34 -	0.2	R
CENTURY II(D)	56	67	84	59.0 +	25	35 -	1.4	S
PIONEER 2684(B)	56	71	84	59.0 +	20 -	37	1.6	MR
AR494B-2-2(R)	C	---	84	58.0	27	42 +	4.9 +	R
VA97W-377	---	---	84	58.4	26	33 -	1.8	R
TRICAL 498 ^{er}	68 +	76 +	83	49.3 -	10 -	43 +	0.3	R
MADISON(B)	61	72	83	56.1 -	21 -	39 +	1.6	R
COKER 9663(DA)	59	69	83	58.4	22	41 +	3.4	MR
VA98W-749	---	---	83	58.0	27	37	1.3	MR
FFR 555W(B)	57	72	82	56.4 -	27	39 +	0.2	R
VA97W-533	C	73	81	58.8 +	26	35 -	1.8	VS
FFR 535	C	67	81	59.5 +	28	37	1.8	R
AR656-5-1(R)	C	---	81	57.8	32 +	38	0.2	MS
PIONEER 2580(B)	54 -	65	81	57.2 -	25	37	2.3	VS
PIONEER 26R46(B)	52 -	68	81	57.8	22	38	0.9	VS
VA98W-415	C	---	81	59.3 +	28	34 -	1.8	R
PIONEER 2643(B)	62 +	72	81	58.3	25	32 -	0.2	MS
VA96-54-326	62 +	71	80	59.3 +	23	37	1.0	R
MASSEY	60	72	79	58.0	21 -	43 +	3.3	R
VA98W-411	---	---	79	59.3 +	28	35 -	1.7	R
HTW215(RT)	---	63 -	78	57.0 -	27	37	0.3	R
VA98W-692	C	---	78	58.9 +	31 +	34 -	1.2	MR
PIONEER XW682(B)	---	---	78	57.7	24	40 +	0.2	VS
FFR 522(B)	56	63 -	78	58.4	27	37	6.2 +	S
GA88622E51	C	---	77	57.0 -	28	36	0.4	R
VA97W-469	C	---	77	57.5	26	37	1.0	R
COKER 9704(DA)	59	69	76	59.8 +	25	36	1.2	R
VA98W-586	C	---	75	58.6 +	30 +	34 -	0.4	S
PIONEER 26R61(B)	63 +	76 +	75	59.7 +	24	41 +	0.2	R
FEATHERSTONE 520(B)	59	70	74	59.2	27	38	4.2 +	MS
VA96W-375	---	---	74	57.5	29 +	36	0.3	S
AGS 2000	C	63 -	74	58.4	21 -	34 -	3.2	VS
ROANE	52 -	63 -	73	60.0 +	30 +	35 -	1.0	S
HOFFMAN 95(D)	51 -	60 -	73	59.4 +	29 +	41 +	0.2	R
GA901146E15(D)	---	---	73	58.8 +	29 +	40 +	0.3	R
GA90524E35(D)	---	---	73	54.8 -	22	32 -	2.6	S
JACKSON(B)	55	66	73	58.9 +	30 +	39 +	3.0	MS
COKER BL930390(DA)	---	---	72	56.8 -	28	38	7.0 +	R
HTW275(RT)	C	---	72	57.1 -	32 +	36	0.7	R
ARCIA ^{er}	C	68	70 -	52.3 -	14 -	47 +	0.2	R
USG 3408	52 -	60 -	70 -	58.7 +	29 +	37	0.2	S
KY89C-804-14-2(R)	---	---	70 -	56.5 -	26	38	4.3 +	R
FFR 566(R)	52 -	62 -	70 -	58.9 +	30 +	40 +	0.2	MS
COKER 9835(DA)	54 -	67	70 -	56.8 -	25	34 -	2.4	MR
FFR 518(R)	57	65	70 -	55.9 -	18 -	35 -	4.8 +	S
POCAHONTAS	51 -	55 -	69 -	57.3 -	25	36	0.8	VS
AR584A-3-1(R)	---	---	67 -	56.2 -	24	42 +	7.2 +	S
AGRIPRO MASON(B)	53 -	59 -	62 -	57.0 -	21 -	39 +	0.8	S
Test Average	58	70	81	57.9	25	37	1.	
L.S.D. (0.05)	4	6	10	0.6	4	2	1.9	
C.V.	8	7	6	0.6	8	2	---	

* Varieties are ordered by descending statewide one-year averages. A plus or minus sign indicates a performance significantly above or below the test average. The number in parentheses below column headings indicates the number of locations on which data are based. There are four replications at each location.

** Belgian Lodging Scale = Area X Intensity X 0.2. Area = 1-10, where 1 is barley unaffected and 10 is entire plot affected and Intensity=1-5, where 1 is barley standing upright and 5 is barley lying totally flat.

^{er} Wheat/rye cross (triticale), not a wheat line.

Ⓢ Wheat spindle streak virus ratings are R=resistant, MR=moderately resistant, MS=moderately susceptible, S=susceptible, and VS=very susceptible. Ratings performed by Dr. Erik Stromberg, Extension Plant Pathologist at VA Tech.

EVALUATION OF FUNGICIDE/VARIETY INTERACTIONS

The response of wheat varieties to foliar fungicides at heading varies based on the level of disease present. One of the primary factors affecting disease levels is genetic resistance to diseases such as powdery mildew, leaf rust, tan spot, septoria, etc. These trials were initiated in 1999 to evaluate the genetic yield potential of current wheat varieties when foliar diseases are uncontrolled compared to fungicide treatment at heading. In 1999 (data not shown), yield changes over locations related to Tilt7 application ranged from no difference to 12 bu/acre depending on variety. In 1999, the response to Tilt7 application over varieties averaged a high of 11 bu/acre at Warsaw, 4 bu/acre at Blacksburg, and no yield change at Painter.

In contrast, the wetter spring of 2000 resulted in higher yields on all released varieties when seed treatments and fungicide were applied. The yield response to Baytan7 and Gaucho7 and Tilt7 at heading increased yields over varieties by 16 bu/a at Blacksburg, 13 bu/a at Painter and 9 bu/a at Warsaw. Individual varietal responses to treatments was as low as 4 bu/a for HTW275 to over 15 bu/a increases for Pioneer Brand 26R24, Pioneer Brand 26R46, Pioneer Brand 2580, USG 3408, Coker 9835, FFR 522 FFR 535, Pocahontas and FFR 555.

Benefits of Baytan7 seed treatment for powdery mildew control and Gaucho7 seed treatment for aphid B BYD control are well documented. Varieties such as FFR 555 that are susceptible to powdery mildew and BYD can benefit greatly by seed treatment as shown by a 19 bu/a increase. At high yield potential any variety that has powdery mildew on the upper two leaves is likely to produce higher yields when appropriate fungicides are applied.

In general, the top-yielding varieties were the same when fungicides and Gaucho7 seed treatment were applied as in the normal state test.

Table 10. Yield performance of entries in the Virginia Tech Wheat Test, 2000 harvest (bu/acre), treated versus untreated plots.*

Brand/Variety	Blacksburg		Warsaw		Painter		Statewide Average	
	Treated**	Standard	Treated	Standard	Treated	Standard	Treated	Standard
bu/acre								
VA96W-250	111 +	94 +	104 +	100 +	109 +	87	108 +	94 +
VA97W-377	111 +	86	104 +	97 +	105 +	88	107 +	90 +
TRICAL 498er	97	82	115 +	96 +	102	87	105 +	88
PIONEER 26R24(B)	111 +	96 +	98	86	106 +	86	105 +	89 +
VAN98W-128	109 +	82	108 +	86	97	86	105 +	85
VA97W-24	104	93 +	110 +	94 +	100	84	105 +	91 +
VA97W-206	109 +	98 +	104 +	97 +	97	79	103 +	91 +
VA97W-213	117 +	89	100 +	92	90	73	103 +	85
VAN97W-386	109 +	90	98	97 +	101	91 +	103 +	93 +
VA96W-247	106	93 +	98	91	102	87	102 +	91 +
PIONEER XW681	108 +	91	96	83	98	81	101	85
VA96W-158	102	93 +	102 +	94 +	98	94 +	101	94 +
USG 3209	108 +	91	97	96 +	94	85	100	91 +
PIONEER 26R46(B)	108 +	84	97	72	95	77	100	77
VA97W-414	103	90	92	90	101	85	99	88
VA96W-348	103	88	98	94 +	97	90 +	99	91 +
PIONEER XW682(B)	102	80	88	80	101	84	97	81
CENTURY II(D)	101	86	94	96 +	96	87	97	88
VA98W-593	96	80	101 +	92	92	87	97	86
AGS 2000	107	95 +	94	78	90	88	97	87
VA98W-749	99	79	98	97 +	90	80	96	85
GA901146E15(D)	106	65 -	91	71	90	73	96	70 -
VA98W-769	94	86	97	83	94	80	95	83
PIONEER 2580(B)	108 +	89	86	76	91	73	95	80
VA98W-692	107	92	88	87	91	77	95	86

FFR 518(R)	99	80	84	85	100	82	95	82
VA96-54-326	100	85	89	87	96	81	95	85
GA88622E51	103	82	91	80	92	83	95	82
AGRIPRO PATTON(B)	96	74 -	92	91	93	78	94	81
VA97W-533	95	81	100 +	81	87	74	94	78
USG 3408	98	85	87	71	98	81	94	79
VA98W-586	103	91	87	80	93	79	94	84
VA98W-415	106	92	88	80	87	85	94	86
VA98W-68	93	80	98	88	92	80	94	83
FEATHERSTONE 520(B)	98	81	96	78	89	81	94	80
COKER 9835(DA)	105	79	86	81	91	72	94	78
VA97W-375	98	86	97	90	86	87	93	88
FFR 522(B)	98	77	88	77	93	81	93	78
PIONEER 2684(B)	103	84	89	80	84	75	93	80
COKER BL930390(DA)	105	91	89	85	87	75	93	85
FFR 535	95	81	91	79	92	70	93	77
ARCIA <i>et</i>	89 -	71 -	92	77	98	84	93	77
VAN98W-346	94	78	93	91	92	78	93	82
PIONEER 2643(B)	102	91	90	88	87	70	93	85
PIONEER 26R61(B)	92 -	89	95	87	91	82	92	86
VA98W-663	96	72 -	93	78	89	74	92	75 -
VA96W-375	103	96 +	86	75	87	73	92	81
VA96W-403WS	98	73 -	92	81	86	76	92	77
AR494B-2-2(R)	101	97 +	86	77	88	67 -	92	81
POCAHONTAS	97	82	85	69 -	95	78	92	76
MADISON(B)	93	79	92	86	86	77	91	81
COKER 9663(DA)	97	85	87	72	90	76	91	78
GA90524E35(D)	97	71 -	84	77	92	77	91	75 -
VA98W-591	95	88	92	93	80	81	90	88
COKER 9704(DA)	100	87	88	78	83	72	90	79
VA98W-77	92 -	81	89	85	88	79	90	82
VA96W-270	89 -	75 -	96	88	84	81	90	81
KY89C-804-14-2(R)	95	85	90	73	86	66 -	90	74 -
JACKSON(B)	101	92	84	75	80	69	89	79
AR656-5-1(R)	104	81	86	74	78 -	65 -	89	73 -
VA97W-469	94	86	81 -	80	93	79	89	82
VA98W-411	105	89	80 -	84	83	78	89	84
AR584A-3-1(R)	98	85	78 -	71	87	73	88	77
FFR 555W(B)	92 -	76	84	64 -	86	66 -	88	69-
ROANE	100	94 +	76 -	69 -	83	68	87	77
AGRIPRO MASON(B)	95	81	81 -	66 -	83	71	86 -	73 -
MASSEY	88 -	75 -	84	82	85	68	86 -	75 -
FFR 566(R)	97	74 -	83	75	75 -	71	85 -	73 -
HTW215(RT)	96	77	71 -	71	83	73	82 -	73 -
HOFFMAN 95(D)	92 -	72 -	78 -	65 -	71 -	68	81 -	68 -
HTW275(RT)	71 -	69 -	69 -	65 -	74 -	68	71 -	67 -
Location Average	100	84	91	82	91	78	94	82
L.S.D (0.05)	8	9	9	12	13	11	8	7
C.V.	5	7	6	9	8	9	9	10

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

** Treatment was Baytan7 and Gaucho7 seed treatment, plus Tilt7 at heading. Standard had seed treatment recommended and applied by seed companies and the specific seed treatment applied to each line is indicated in parentheses following the variety name. All Virginia experimental lines and public releases were treated with (RT) except where indicated otherwise.

et Wheat/rye cross (triticale), not a wheat line.