Penn State **Extension**

2010–2011 Pennsylvania Small Grains Performance Report

Penn State conducts variety performance trials with small grains. These tests are conducted annually to provide interested people with information regarding the performance of small grains grown in Pennsylvania. This report summarizes performance results for the 2010–11 growing season. Winter wheat and winter barley varieties were tested at both the Russell E. Larson Agricultural Research Center at Rock Springs in Centre County and at the Southeast Agricultural Research and Extension Center near Landisville in Lancaster County.

Procedures

Private seed companies and universities provided the entries for these trials. Contact information for each company or university is listed in Table 1. Seed treatments varied and were applied by the entrants; most were Raxil/Thiram or Dividend. A total of 63 wheat and 17 barley (including 7 hulless types, one of which was a two-row barley) were entered. Seeding rates in the wheat and hulled barley plots were 1.6 million seeds per acre, while the hulless barley plots were seeded at 1.9 million seeds per acre.

Winter wheat

The winter wheat trial in Centre County was planted in to a tilled seedbed, in a field following oats, on October 11, 2010. Preplant fertilizer of 200 lb/acre of 10-20-20 was applied according to soil test recommendations. The plots were planted 18 feet in length, with 7 rows, spaced 7 inches apart. On March 16, the trial was topdressed with 50 lb N/acre as UAN. On April 11, a second application of 50 lb N/acre plus 0.5 oz Harmony Extra was applied. Prior to heading, the plots were trimmed to 14 feet. The middle 5 rows of each plot were harvested for yield. The trial was harvested on July 12.

The winter wheat trial in Lancaster County was planted into a tilled seedbed, in a field following soybeans, on November 1, 2010. No preplant fertilizer was applied. The plots were planted 18 feet in length, with 7 rows, spaced 7 inches apart. On March 17, the trial was topdressed with 100 lb N/acre as UAN plus Agrotain, plus 0.5 oz Harmony Extra. Prior to heading, the plots were trimmed to 14 feet. The middle 5 rows of each plot were harvested for yield. The trial was harvested on June 29. The following observations were made for the wheat trial:

Yield was based on 60 lbs per bushel for wheat and adjusted to 12 percent moisture.

Test weight is based on pounds per bushel of grain at the moisture for that particular variety.

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Heading (50 percent of plants in plot headed) dates were recorded.

Height is the average length of plants from the ground to the highest part of the head.

Lodging was rated just prior to harvest as percent of plants leaning significantly or broken.

Spring stand rating (Centre County only) was evaluated using a 1–5 relative scale (1 = best, 5 = worst).

Early season growth (Centre County only) was evaluated using a 1–5 relative scale (1 = best, 5 = worst)

Winter barley

The Centre County barley trial was planted in to a tilled seedbed, in a field following oats, on September 20, 2010. Preplant fertilizer of 200 lb/acre of 10-20-20 was applied according to soil test recommendations. The plots were planted 18 feet in length, with 7 rows, spaced 7 inches apart. On March 15, the trial was topdressed with 60 lb N/acre as UAN and on April 11, 0.5 oz Harmony Extra was applied. Prior to heading, the plots were trimmed to 14 feet. The middle 5 rows of each plot were harvested for yield. The trial was harvested on June 22.

The Lancaster County barley trial was planted in to a tilled seedbed, in a fallow field, on September 23, 2010. No preplant fertilizer was applied. The plots were planted 18 feet in length, with 7 rows, spaced 7 inches apart. On March 17, the trial was topdressed with 60 lb N/acre as UAN plus 0.5 oz Harmony Extra. Prior to heading, the plots were trimmed to 14 feet. The middle 5 rows of each plot were harvested for yield. The trial was harvested on June 20. The following observations were made for the barley trials:

Yield was based on 48 lbs per bushel for all barley varieties (hulled and hulless) and adjusted to 12 percent moisture.

Test weight is based on pounds per bushel of grain.

Heading (50 percent of plants in plot headed) dates were recorded.

Height is the average length of plants from the ground to the highest part of the head.

Lodging was rated just prior to harvest as percent of plants leaning significantly or broken.

S*pring stand rating* (Centre County only) was evaluated using a 1–5 relative scale (1 = best, 5 = worst).

Early season growth (Centre County only) was evaluated using a 1–5 relative scale (1 = best, 5 = worst)

Interpretation of results

Variety performance differences are caused partially by genetic differences and partially by soil variation and other environmental variations which cannot be adequately controlled. Thus, small differences in performance may have no significance. Multiple-year and site averages are a more valid indication of the performance of a specific variety than are data for a single year or site. Statistical procedures have been used for the most important characteristics to allow meaningful comparisons of variety averages at a particular location. A standard least significant difference (LSD) value is provided for comparing varieties. Any difference between two variety averages that exceeds the LSD value is considered significant and not simply a result of uncontrolled environmental variation.

Traditionally, LSD values have been calculated at the 0.05 level, which means that when differences between varieties exceed the LSD, we can be 95 percent confident that the differences are not due to chance. The downside of this approach is that it leads to the conclusion that many varieties in the test have similar yield performance, when there really may be differences in the yield potential. Many universities have switched to a less conservative 0.25 level for the LSD, thus reducing the chance of concluding that varieties are not different, when a true difference exists among the lines. In this report, we present the LSD values at both the 0.05 level and the 0.25 level for your consideration.

The value of coefficient of variation (CV) is a measure of relative variation useful in evaluating the precision achieved in an experiment. In grain and forage trials, for example, the CV value for yield is often between 5 and 15 percent. Confidence in the reliability of the experimental results declines as the CV value increases. Uncontrollable or unmeasurable variations in soil fertility, soil drainage, and other environmental factors contribute to increased CV values.

Results

Wheat yields were up slightly in Centre County, but lower in Lancaster County, when compared to the 2010 trials. In 2011 the Centre County wheat trial averaged 12 bu/A higher than the Lancaster trial. Due to weather constraints, both wheat trials were planted 1–2 weeks later than optimum and although there were good stands going into the winter months, neither trial produced much fall growth and/or tillering. The Lancaster wheat trial had a noticeable amount of head scab infection—considerably more than the Centre County trial.

Both barley trials were planted near their optimum planting date and as a result had some good fall growth and tillering, especially at the Centre County site. The Centre County trial had higher yields than the Lancaster County trial by more than 20 bushels per acre. Some plots in both barley trials had a small amount of head scab, but not enough to be a major factor in influencing yield.

Table 1. Source of Entries for the Wheat and Barley Variety Trials.

Contact Information	2010-11 Entries
Bioplant 800-969-6717	Wheat: Excel 163, Excel 234, Excel 442
Chemgro www.chemgro.com 800-346-4769	Wheat: Mifflin, Paradise, Tribute, X207, X103, X205, X206
Cisco www.ciscoseeds.com	Barley: Valor
Dyna-Gro www.dynagroseed.com	Wheat: Shirley, DG9922, DG9042, DG9012, DG9911
Growmark FS home.growmarkfs.com 800-787-2767	Barley: FS 950, FS 501 Wheat: FS 621, FS 627, FS 801, FS 888
Mid-Atlantic Seeds Inc. mas-office@comcast.net 717-852-8894	Wheat: MAS-2, MAS-4, MAS-, MAS-7, MAS-9, MAS-10, MAS-12, MAS-13, MAS-14
Ohio Seed Improvement Assoc. www.ohseed.org	Wheat: Sunburst, Malabar, Hopewell, Bromfield, Rumor
The Pennsylvania State University	Barley: Pennco, Barsoy
Pioneer Hi-Bred International Inc. www.pioneer.com	Wheat: 25R30, 25R32, 25R34, 25R39, 25R40
Seedway www.seedway.com jdavis@seedway.com	Barley: SB151 Wheat: SW52, SW56, SW85
Steyer Seeds www.steyerseeds.com 800-231-4274	Wheat: Quin-Lee, Ashlyn, Jordan, Kenton, Marion, Crestline
Syngenta Seeds Inc. www.agriprowheat.com 877-Wheat-AP	Wheat: Branson, W1566, Oakes, SY9978, Coker 9553
UniSouth Genetics www.usgseed.com	Wheat: USG 3555, USG 3209, USG 3665, USG 3251, USG 3315, USG 3770, USG 3409, USG 3120
University of Maryland	Barley: MD02B27 Wheat: Chesapeake
Virginia Tech www.virginiacrop.org/vcia.seeds.html	Barley: Thoroughbred, Dan, Eve, Price, VA06H-25, VA05H-147, VA06B-19, VA07H-31WS, VA07H-35WS, VA09H-1102R Wheat: VA05W-258, Merl, Jamestown

Table 2. Winter Wheat Performance in Lancaster County, 2011.

Source	Entry	Yield (bu/A)	Test weight (lb/bu)	Height (in.)	Heading date	Percent lodging	Two-year avg. yield (bu/A)
Mid Atlantic Seeds	MAS-13	80.2	56.7	38	25-May	2	
Pioneer	25R40	79.6	58.5	30	26-May		
Pioneer	25R34	79.0	57.2	36	25-May	3	
Seedway LLC	SW85	78.7	56.8	34	25-May		80.1
Unisouth Genetics	USG 3251	78.6	56.7	34	26-May	1	84.9
Bioplant	Excel 234	78.4	59.0	36	25-May	11	82.6
Unisouth Genetics	USG 3315	78.3	58.6	36	26-May	2	80.6
Mid Atlantic Seeds	MAS-14	77.7	59.3	37	25-May	9	
VA Tech	VA-05W-258	77.5	58.2	30	27-May		79.4
Chemgro	X207	76.5	57.5	37	27-May		
Mid Atlantic Seeds	MAS-2	76.4	60.5	39	26-May	1	81.2
Steyer Seeds	Ashlyn	76.2	58.8	33	25-May		81.5
Pioneer	25R30	75.9	60.0	34	25-May		
Pioneer	25R32	75.7	57.3	34	26-May	3	
Syngenta Seeds, Inc.	W1566	75.6	54.7	39	25-May	4	81.0
Chemgro	Mifflin	75.5	56.6	33	26-May		80.3
Steyer Seeds	Kidwell	75.3	56.2	32	25-May		
Seedway LLC	SW56	75.3	58.4	33	25-May		74.7
Seedway LLC	SW52	75.1	58.7	34	25-May	2	79.4
Dyna-Gro Seed	Shirley	75.0	56.1	33	26-May	1	82.8
Steyer Seeds	Crestline	74.8	59.9	37	25-May	21	
Chemgro	Paradise	74.8	58.7	33	25-May		83.5
Growmark FS	FS 888	74.6	58.9	34	25-May	2	80.0
Steyer Seeds	Jordan	74.3	60.1	37	25-May	14	75.6
Mid Atlantic Seeds	MAS-4	74.2	58.9	33	25-May		82.1
Steyer Seeds	Marion	74.2	55.9	33	26-May		
Syngenta Seeds, Inc.	SY 9978	74.2	56.8	37	25-May		
Chemgro	X206	74.2	60.4	38	24-May	14	
Mid Atlantic Seeds	MAS-9	74.2	60.0	38	24-May	21	75.6
Mid Atlantic Seeds	MAS-10	73.9	57.8	31	26-May		82.0
Syngenta Seeds, Inc.	Branson	73.8	56.5	31	26-May	1	77.2
Dyna-Gro Seed	DG 9911	73.6	60.1	38	24-May	23	
Dyna-Gro Seed	DG 9012	73.1	58.7	34	24-May		
Unisouth Genetics	USG 3665	72.7	57.5	41	25-May	19	76.6

continued

Table 2. Winter Wheat Performance in Lancaster County, 2011.

Source	Entry	Yield (bu/A)	Test weight (lb/bu)	Height (in.)	Heading date	Percent lodging	Two-year avg. yield (bu/A)
Chemgro	X205	72.5	59.1	37	25-May	10	
Unisouth Genetics	USG 3555	72.5	56.1	32	26-May		78.3
Ohio Seed Improvement Assoc.	Sunburst	72.4	59.1	30	26-May		80.2
Bioplant	Excel 163	72.4	59.1	36	21-May	6	
Growmark FS	FS 621	72.0	56.1	34	25-May	3	79.2
Pioneer	25R39	72.0	56.2	34	26-May	1	78.5
Mid Atlantic Seeds	MAS-5	71.8	54.3	34	27-May	1	80.7
Growmark FS	FS 801	71.3	56.6	37	25-May	2	77.5
Mid Atlantic Seeds	MAS-7	71.0	55.4	33	25-May		81.4
Ohio Seed Improvement Assoc.	Hopewell	70.7	57.7	38	25-May	2	72.9
Unisouth Genetics	USG 3409	70.7	57.2	36	26-May	3	
Dyna-Gro Seed	DG 9042	70.6	56.0	33	26-May	2	77.4
MD	Chesapeake	70.5	57.3	33	25-May	2	76.3
VA Tech	Jamestown	69.3	57.0	36	26-May	1	74.7
Unisouth Genetics	USG 3120	69.3	57.5	35	25-May		
Growmark FS	FS 627	69.0	55.4	37	25-May	2	72.5
Syngenta Seeds, Inc.	Coker 9553	68.9	58.2	36	25-May		76.6
Dyna-Gro Seed	DG 9922	68.8	56.7	34	25-May	2	75.0
Unisouth Genetics	USG 3770	68.5	58.1	37	25-May	23	
Ohio Seed Improvement Assoc.	Malabar	68.0	57.5	37	27-May	3	69.2
Mid Atlantic Seeds	MAS-12	67.5	56.1	33	27-May	8	
Steyer Seeds	Kenton	67.2	58.5	39	25-May	22	
Ohio Seed Improvement Assoc.	Bromfield	66.6	57.7	36	28-May	7	
VA Tech	Merl	66.5	57.5	33	25-May		75.8
Chemgro	Tribute	66.1	60.2	33	26-May	1	73.4
Bioplant	Excel 442	66.1	57.0	39	26-May		
Ohio Seed Improvement Assoc.	Rumor	65.9	53.6	35	26-May	11	
Syngenta Seeds, Inc.	OAKES	63.0	58.6	33	26-May	3	73.8
Unisouth Genetics	USG 3209	62.4	55.4	32	25-May	2	70.4
Mean		72.7	57.6	35	25-May	4	78.1
LSD (0.05)		**5.7**	**2.9**				
LSD (0.25)		**3.3**					
CV %		**5.6**	**4.2**				

Table 3. Winter Wheat Performance in Centre County, 2011.

Source	Entry	Yield (bu/A)	Test weight (lb/bu)	Height (in)	Heading date	Percent lodging	Spring stand (1–5, 1=worst)	Early season growth (1–5, 1=worst)	Two-year avg yield (bu/A)	Three-year avg yield (bu/A)
Unisouth Genetics	USG 3251	100.0	60.8	35	29-May	0	5.0	3.5	95.1	
Chemgro	X207	96.5	59.5	37	30-May	0	3.5	3.5		
Mid Atlantic Seeds	MAS-13	94.4	60.5	40	28-May	0	5.0	3.8		
Pioneer	25R40	92.2	61.4	31	28-May	0	5.0	3.3		
Steyer Seeds	Ashlyn	92.0	62.3	35	29-May	0	5.0	3.3	90.4	
VA Tech	VA-05W-258	91.4	61.2	36	28-May	0	5.0	3.8	85.9	
Steyer Seeds	Kenton	91.1	60.8	40	29-May	0	5.0	3.3		
Pioneer	25R30	90.0	63.0	35	27-May	0	4.0	4.0		
Growmark FS	FS 801	89.7	61.3	35	28-May	0	5.0	3.5	87.7	89.7
Syngenta Seeds, Inc.	Branson	89.2	60.4	34	28-May	0	3.0	3.0	86.6	89.2
Steyer Seeds	Marion	89.1	60.5	33	28-May	0	5.0	3.5		
Unisouth Genetics	USG 3315	88.8	62.1	36	29-May	0	4.5	4.3	88.7	
Pioneer	25R39	88.5	60.9	35	29-May	0	4.0	3.3	85.5	88.5
Dyna-Gro Seed	DG 9922	88.3	61.3	38	27-May	0	4.0	4.0	86.0	
Mid Atlantic Seeds	MAS-7	88.1	60.4	34	27-May	0	3.5	3.5	90.5	
Seedway LLC	SW56	88.0	62.3	34	29-May	0	3.0	3.0		
Unisouth Genetics	USG 3770	88.0	61.3	38	28-May	0	4.0	3.3		
Dyna-Gro Seed	Shirley	87.9	59.5	32	29-May	0	4.0	3.3	87.7	
Pioneer	25R32	87.9	62.2	34	28-May	0	3.0	3.0		
Chemgro	Mifflin	87.5	60.5	33	28-May	0	4.5	4.0	89.3	
Dyna-Gro Seed	DG 9042	87.2	60.3	33	28-May	0	5.0	3.5	88.2	
Ohio Seed Improvement Assoc.	Sunburst	86.9	63.0	31	29-May	0	5.0	3.5	85.9	86.9
Ohio Seed Improvement Assoc.	Malabar	86.3	60.6	40	29-May	0	4.0	3.5	85.6	86.3
Seedway LLC	SW52	86.2	62.3	36	29-May	0	4.5	3.8	86.3	
Mid Atlantic Seeds	MAS-2	85.7	62.9	40	28-May	0	4.0	4.0	85.5	
VA Tech	Merl	85.5	61.7	35	28-May	0	5.0	4.0	82.3	85.5
Chemgro	Paradise	85.5	61.9	34	29-May	0	5.0	3.0	86.0	
Ohio Seed Improvement Assoc.	Hopewell	85.2	60.7	38	28-May	0	4.5	3.8	83.7	85.2
Unisouth Genetics	USG 3409	84.7	61.1	37	28-May	0	5.0	3.5		
Steyer Seeds	Kidwell	84.0	60.2	34	27-May	0	4.0	3.5		
Unisouth Genetics	USG 3555	83.9	60.6	32	29-May	0	4.0	3.3	84.2	83.9
Mid Atlantic Seeds	MAS-14	83.4	62.3	37	28-May	0	3.0	3.0		
Unisouth Genetics	USG 3209	83.3	59.9	35	29-May	0	4.0	3.0	82.8	83.3

continued

Table 3. Winter Wheat Performance in Centre County, 2011, continued.

Source	Entry	Yield (bu/A)	Test weight (lb/bu)	Height (in)	Heading date	Percent lodging	Spring stand (1–5, 1=worst)	Early season growth (1–5, 1=worst)	Two-year avg yield (bu/A)	Three-year avg yield (bu/A)
Growmark FS	FS 621	82.9	59.8	39	27-May	0	5.0	3.5	85.3	
Pioneer	25R34	82.8	60.4	37	29-May	0	4.0	3.0		
Mid Atlantic Seeds	MAS-5	82.7	58.5	34	29-May	0	4.5	3.8	85.6	
Mid Atlantic Seeds	MAS-10	82.3	60.9	31	30-May	0	4.0	2.8	84.2	
Bioplant	Excel 163	82.1	62.2	37	26-May	0	5.0	3.5		
Bioplant	Excel 234	82.0	62.0	39	28-May	0	4.0	3.3	85.3	82.0
Seedway LLC	SW85	81.1	60.7	36	28-May	0	4.0	3.5	83.0	
Chemgro	X205	80.7	62.0	39	28-May	0	5.0	3.5		
Growmark FS	FS 627	80.5	60.8	36	28-May	0	5.0	3.5	81.3	80.5
Chemgro	X206	80.5	63.3	37	27-May	0	4.0	3.3		
Unisouth Genetics	USG 3665	80.5	60.5	41	28-May	0	4.5	3.8	84.6	80.5
Syngenta Seeds, Inc.	W1566	80.5	59.7	40	29-May	0	4.0	4.0	82.4	
Mid Atlantic Seeds	MAS-4	80.2	62.5	33	27-May	0	5.0	3.5	80.7	
Ohio Seed Improvement Assoc.	Bromfield	80.2	61.4	38	28-May	0	5.0	3.5		
Steyer Seeds	Jordan	79.6	63.6	38	27-May	0	4.5	3.8	80.1	79.6
Syngenta Seeds, Inc.	SY 9978	79.1	59.5	39	28-May	0	3.5	3.5	80.8	
MD	Chesapeake	79.0	61.7	34	28-May	0	4.0	3.3	84.5	79.0
Growmark FS	FS 888	78.8	61.5	35	29-May	0	4.5	3.8	85.1	
Unisouth Genetics	USG 3120	78.0	61.4	35	28-May	0	5.0	3.5		
Mid Atlantic Seeds	MAS-9	77.8	63.3	39	27-May	0	5.0	3.5	78.4	
Dyna-Gro Seed	DG 9012	77.8	62.3	34	28-May	0	4.5	3.5		
VA Tech	Jamestown	77.8	61.1	39	29-May	0	5.0	4.0	82.3	
Mid Atlantic Seeds	MAS-12	77.6	59.7	36	29-May	0	4.5	3.8		
Steyer Seeds	Crestline	77.4	63.5	37	28-May	0	5.0	3.3		
Bioplant	Excel 442	77.2	60.5	41	28-May	0	5.0	3.3		
Ohio Seed Improvement Assoc.	Rumor	76.8	57.4	35	29-May	0	5.0	3.5		
Dyna-Gro Seed	DG 9911	76.0	63.3	38	27-May	0	5.0	3.5		
Syngenta Seeds, Inc.	OAKES	75.9	60.9	33	31-May	0	2.5	1.8	81.7	
Chemgro	Tribute	74.8	63.7	34	28-May	0	5.0	3.3	77.8	74.8
Syngenta Seeds, Inc.	Coker 9553	73.6	61.6	36	28-May	0	3.0	3.0	78.2	73.6
Mean		84.0	61.2	36	28-May	0	4.4	3.4	84.7	83.0
LSD (0.05)		**7.3**	**1.4**							
LSD (0.25)		**4.3**								
CV %		**6.2**	**1.8**							

Table 4. Winter Wheat Performance Combined Across Centre and Lancaster Counties, 2011.

Source	Entry	Yield (bu/A)	Test weight (lbs/bu)	Height (in.)	Percent lodging
Unisouth Genetics	USC 3251	89.3	58.7	35	0
Mid Atlantic Seeds	MAS-13	87.3	58.6	39	1
Chemgro	X207	86.5	58.5	37	0
Pioneer	25R40	85.9	60.0	31	0
VA Tech	VA-05W-258	84.5	59.7	33	0
Steyer Seeds	Ashlyn	84.1	60.6	34	0
Unisouth Genetics	USG 3315	83.6	60.3	36	1
Pioneer	25R30	82.9	61.5	34	0
Pioneer	25R32	81.8	59.8	34	1
Steyer Seeds	Marion	81.7	58.2	33	0
Seedway LLC	SW56	81.7	60.3	33	0
Chemgro	Mifflin	81.5	58.5	33	0
Syngenta Seeds, Inc.	Branson	81.5	58.5	33	0
Dyna-Gro Seed	Shirley	81.5	57.8	32	1
Mid Atlantic Seeds	MAS-2	81.1	61.7	40	1
Pioneer	25R34	80.9	58.8	36	1
Seedway LLC	SW52	80.6	60.5	35	1
Mid Atlantic Seeds	MAS-14	80.6	60.8	37	4
Growmark FS	FS 801	80.5	58.9	36	1
Pioneer	25R39	80.2	58.6	34	0
Bioplant	Excel 234	80.2	60.5	37	5
Chemgro	Paradise	80.1	60.3	34	0
Seedway LLC	SW85	79.9	58.7	35	0
Steyer Seeds	Kidwell	79.7	58.2	33	0
Ohio Seed Improvement Assoc.	Sunburst	79.7	61.0	31	0
Mid Atlantic Seeds	MAS-7	79.6	57.9	33	0
Steyer Seeds	Kenton	79.1	59.7	39	11
Dyna-Gro Seed	DG 9042	78.9	58.2	33	1
Dyna-Gro Seed	DG 9922	78.5	59.0	36	1
Unisouth Genetics	USG 3770	78.2	59.7	37	11
Unisouth Genetics	USG 3555	78.2	58.3	32	0
Mid Atlantic Seeds	MAS-10	78.1	59.3	31	0
Syngenta Seeds, Inc.	W1566	78.0	57.2	39	2
Ohio Seed Improvement Assoc.	Hopewell	77.9	59.2	38	1

continued

Table 4. Winter Wheat Performance Combined Across Centre and Lancaster Counties, 2011, continued.

Source	Entry	Yield (bu/A)	Test weight (lbs/bu)	Height (in.)	Percent lodging
Unisouth Genetics	USG 3409	77.7	59.1	37	1
Growmark FS	FS 621	77.5	57.9	36	1
Chemgro	X206	77.3	61.8	37	7
Bioplant	Excel 163	77.3	60.6	36	3
Mid Atlantic Seeds	MAS-5	77.2	56.4	34	0
Mid Atlantic Seeds	MAS-4	77.2	60.7	33	0
Ohio Seed Improvement Assoc.	Malabar	77.2	59.0	38	2
Steyer Seeds	Jordan	76.9	61.8	37	7
Growmark FS	FS 888	76.7	60.2	34	1
Syngenta Seeds, Inc	SY 9978	76.7	58.1	38	0
Chemgro	X205	76.6	60.5	38	5
Unisouth Genetics	USC 3665	76.6	59.0	41	9
Steyer Seeds	Crestline	76.1	61.7	37	10
VA Tech	Merl	76.0	59.6	34	0
Mid Atlantic Seeds	MAS-9	76.0	61.6	38	11
Dyna-Gro Seeds	DG 9012	75.4	60.5	34	0
Dyna-Gro Seeds	DG 9911	74.8	61.7	38	12
Growmark FS	FS 627	74.7	58.1	37	1
MD	Chesapeake	74.7	59.5	34	1
Unisouth Genetics	USG 3120	73.6	59.4	35	0
VA Tech	Jamestown	73.6	59.0	37	0
Ohio Seed Improvement Assoc.	Bromfield	73.4	59.5	37	3
Unisouth Genetics	USG 3209	72.9	57.6	33	1
Mid Atlantic Seeds	MAS-12	72.6	57.9	35	4
Bioplant	Excel 442	71.6	58.7	40	0
Ohio Seed Improvement Assoc.	Rumor	71.4	55.5	35	5
Syngenta Seeds, Inc.	Coker 9553	71.3	59.9	36	0
Chemgro	Tribute	70.4	62.0	34	0
Syngenta Seeds, Inc.	OAKES	69.4	59.8	33	1
Mean		**78.4**	**59.4**	**35**	**2**

Table 5. Winter Barley Performance in Lancaster County, 2011.

Source	Entry	Yield (bu/A)	Test weight (lb/bu)	Height (in.)	Heading date	Percent lodging	Two-year avg. yield (bu/A)	Three-year avg. yield (bu/A)
VA Tech	VA06B-19	78.1	47.8	31	7-May	2		
Growmark FS	950	69.4	47.6	38	10-May	25	71.3	87.0
VA Tech	Thoroughbred	69.2	48.0	33	12-May	13	70.4	83.3
VA Tech	Dan*	63.7	57.8	33	9-May	3	59.8	74.4
VA Tech	Eve*	63.2	58.4	33	7-May	55	58.3	69.9
PSU	Pennco	63.0	44.0	39	9-May	20	64.7	75.3
VA Tech	VA05H-147*	62.8	58.1	35	6-May	8	56.5	
VA Tech	VA07H-31WS*	60.3	58.0	34	10-May	3		
Cisco	VALOR (157)	59.8	45.2	38	8-May	11	63.7	
VA Tech	VA09H-1102R*	59.6	59.2	35	11-May	36		
VA Tech	Price	59.2	46.3	32	10-May	31		
Seedway	SB151	59.0	43.9	41	10-May	14	62.7	78.1
VA Tech	VA07H-35WS*	58.1	57.9	34	12-May	4		
Growmark FS	501	57.2	44.6	41	10-May	5	62.1	77.0
VA Tech	VA06H-25*	57.0	58.0	35	13-May	5	57.4	
PSU	Barsoy	56.9	48.9	33	5-May	24	54.5	65.3
University of MD	MD02B27	55.4	48.0	34	8-May	82		
Mean		**61.9**	**51.3**	**35**	**9-May**	**20**	**61.9**	**76.3**
LSD (0.05)		**7.9**						
LSD (0.25)		**4.6**						
CV %		**8.1**						

*Hulless line

Table 6. Winter Barley Performance in Centre County, 2011.

Source	Entry	Yield (bu/a)	Test weight (lb/bu)	Height (in.)	Heading date	Percent lodging	Winter injury (1–5, 1=worst)	Spring stand (1–5, 1=worst)	Early season growth (1–5, 1=worst)	Two-year avg. yield (bu/A)	Three-year avg. yield (bu/A)
Growmark FS	950	110.7	51.0	41	18-May	0	4.1	3.8	3.5	92.0	97.9
VA Tech	VA06B-19	92.7	50.7	35	13-May	10	4.3	4.3	3.8		
VA Tech	Thoroughbred	90.6	50.4	38	19-May	19	4.4	4.0	3.5	81.1	91.6
Cisco	VALOR (157)	89.1	48.5	45	17-May	80	4.3	4.5	3.3	78.4	
Seedway LLC	SB151	88.2	48.7	44	18-May	48	4.4	4.3	3.8	77.3	87.8
Penn State	Pennco	84.8	46.6	43	17-May	68	4.1	3.8	2.8	75.6	86.9
VA Tech	VA07H-35WS*	84.2	60.8	37	19-May	25	4.4	4.3	4.0		
VA Tech	VA09H-1102R*	81.7	61.8	41	20-May	39	4.5	4.5	4.3		
Growmark FS	501	81.5	47.5	44	18-May	39	4.3	4.5	3.3	74.2	83.3

continued

Table 6. Winter Barley Performance in Centre County, 2011, continued.

Source	Entry	Yield (bu/a)	Test weight (lb/bu)	Height (in.)	Heading date	Percent lodging	Winter injury (1–5, 1=worst)	Spring stand (1–5, 1=worst)	Early season growth (1–5, 1=worst)	Two-year avg. yield (bu/A)	Three-year avg. yield (bu/A)
VA Tech	VA06H-25*	81.1	61.2	37	19-May	19	4.1	4.0	3.3	69.4	
VA Tech	Price	79.3	49.0	37	16-May	29	4.0	4.0	3.3		
MD	MD02B27	78.9	50.0	40	15-May	80	4.4	4.5	4.3		
VA Tech	VA07H-31WS*	78.7	60.6	38	19-May	6	4.3	4.8	4.3		
VA Tech	VA05H-147*	75.7	60.7	39	15-May	14	4.5	3.5	2.8	62.9	
VA Tech	Dan*	75.5	62.1	36	18-May	28	4.3	4.0	2.8	65.7	71.1
Penn State	Barsoy	65.1	47.9	41	13-May	21	4.5	4.3	3.8	58.6	69.9
VA Tech	Eve*	59.2	60.4	35	18-May	10	2.9	3.0	2.8	56.3	64.5
Mean		**82.2**	**54.0**	**39**	**17-May**	**31**	**4.2**	**4.1**		**72.0**	**81.6**
LSD (0.05)		**7.1**	**1.4**								
LSD (0.25)		**4.1**	**0.8**								
CV %		**6.2**	**1.8**								

*Hulless line

Table 7. Winter Barley Performance Combined across Centre and Lancaster Counties, 2011.

Source	Entry	Yield (bu/A)	Test weight (lb/bu)	Height (in.)	Percent lodging
Growmark FS	950	90.0	49.3	39	12
VA Tech	VA06B-19	85.4	49.2	33	6
VA Tech	Thoroughbred	79.9	49.2	35	16
Cisco	VALOR	74.5	46.8	42	45
Penn State	Pennco	73.9	45.3	41	44
Seedway LLC	SB151	73.6	46.3	43	31
VA Tech	VA07H-35WS	71.2	59.3	35	14
VA Tech	VA09H-1102R	70.7	60.5	38	38
VA Tech	Dan	69.6	59.9	35	16
VA Tech	VA07H-31WS	69.5	59.3	36	5
Growmark FS	501	69.4	46.0	43	22
VA Tech	VA05H-147	69.3	59.4	37	11
VA Tech	Price	69.2	47.6	34	30
VA Tech	VA06H-25	69.1	59.6	36	12
MD	MD02B27	67.2	49.0	37	81
VA Tech	Eve	61.2	59.4	34	32
Penn State	Barsoy	61.0	48.4	37	23
Mean		72.0	52.6	37	26

*Hulless line

Production Details: Penn State 2011 Winter Barley Performance Trials

Site:	Lancaster County (Landisville)	Centre County (Rock Springs)
Previous Crop	Fallow	Oats
Planting Date	23-Sep	20-Sep
Seeding Rate	Hulled Barley Seeding Rate: 1.64 million seeds/A (both locations)	
	Hulless Barley Seeding Rate: 1.94 million seeds/A (both locations)	
Fall Fertilizer	none	200# 10-20-20
Herbicides	0.5 oz Harmony Extra	0.5 oz Harmony Extra
Spring N fertilizer		
N material	UAN	UAN
N rate	60 lb/A	60 lb/A
N application date	17-Mar	15-Mar
Harvest Date:	20-Jun	22-Jun
Other:		

Production Details: Penn State 2011 Winter Wheat Performance Trial

Site: Lancaster County (Landisville)		Centre County (Rock Springs)
Previous Crop	Soybeans	Oats
Planting Date	1-Nov	11-Oct
Seeding Rate	1.64 million seeds/A (both locations)	
Fall Fertilizer	none	200# 10-20-20
Herbicides	0.5 oz Harmony Extra	0.5 oz Harmony Extra
Spring N fertilizer		
N material	UAN	UAN
N rate	100 units	50 units x 2 (split application)
N application date	17-Mar	16-Mar
Harvest Date:	7-Jul	12-Jul
Other:		

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