

2020 University of Delaware Small Grains Variety Trials

Victor M. Green
302-275-1445
vmgreen@udel.edu

Thank you to all the companies who have supported and participated in the 2019-2020 University of Delaware small grains trials. Appreciation and gratitude is extended to the following cooperators who generously provided land and support for our off-site locations; Craig Murray (Murray Bros. Farm) of Selbyville; Rob Emerson of Emerson Farms in Middletown and Allen Garey at the Kent location.

Thank you to the farm staff at the UD Thurman Adams Research Farm; Brian Hearn (Farm Manager), Ward Harris, Kyle Mitchell, and George Willey. Thank you also, to Gunnar Isaacs, Research Associate, for all of his work in packaging seed, data collection and maintaining the plots. The variety trial program could not be done without any of them.

We evaluated 64 total wheat varieties for the 2020 season. Trials were located in Georgetown (Sussex county), Middletown (New Castle county), Selbyville (Sussex) and Williamsville (Kent county location).

Planting and harvest dates are noted for each location. Weather allowed for a timely harvest and there was insignificant lodging for wheat. All of the trials were planted into a previous crop of corn.

Weather in April and May was cool for Delmarva and marked with several frosts including a mid-May frost. I have provided a separate document to look at the weather data if interested. The Selbyville location was most impacted by the frost. Many of the varieties were affected at this location and the weather data (Dagsboro Gumboro) confirms that this area was colder than the other locations for those dates.

We also conducted two barley trials. Barley 1, and the WMBT (Winter National Malt Barley Trial). Grain samples are being analyzed for malting quality standards and results will be reported when I receive them.

Please feel free to contact me for any questions or comments.

Georgetown Wheat 2020

Plant 10/11/2019
Harvest 6/28/2020

Company/Institution	Variety	Yield bu/A		Moisture (at harvest)	T.W.	Height (in.)	Heading* (Julian)	Head Type**	Gtown Rank x Yield
Mid Atlantic Seed	MAS 136	111.8	a	13.6	61.2	31	124	A	1
AgriPro	SY Viper	111.3	ab	13.7	61.6	35	119	S	2
KWS	KWS242	110.7	abc	13.9	60.9	31	119	A	3
Croplan	CP9606	108.5	a-d	12.8	59.4	33	122	A	4
AgriMAXX	AM 505	108.0	a-e	13.6	63.0	33	124	A	5
Mercer	MBX223	107.9	a-e	13.5	61.1	34	122	A	6
Local	LWX20C	107.3	a-f	13.2	60.4	32	123	A	7
UniSouth Genetics	USG 3316	106.9	a-g	13.4	60.6	32	123	A	8
UniSouth Genetics	USG 3329	106.7	a-g	13.5	61.8	34	124	A	9
Mid Atlantic Seed	MAS 133	106.6	a-g	12.6	59.1	31	124	A	10
Dyna-Gro	9941	105.7	a-h	12.4	59.2	32	124	A	11
UniSouth Genetics	USG 3230	105.7	a-i	12.8	59.8	32	120	A	12
Dyna-Gro	WX20731	105.5	a-i	13.1	59.9	32	123	A	13
MAS	MAS 143	105.4	a-i	13.1	59.9	32	125	A	14
AgriMAXX	AM 473	105.4	a-i	13.2	60.8	34	123	A	15
AgriPro	SY 576	105.1	a-j	12.7	58.7	34	127	A	16
Growmark	FSX745	105.0	a-j	13.7	60.4	32	124	A	17
UniSouth Genetics	USG 3790	104.3	a-k	13.3	60.7	31	124	A	18
Croplan	CP8081	104.3	a-k	13.5	61.3	31	121	A	19
UniSouth Genetics	USG 3118	104.0	a-k	13.6	62.3	30	118	AL	20
AgriMAXX	AM 495	104.0	a-k	13.4	61.5	31	124	A	21
Pioneer	25R25	103.5	a-l	13.2	59.7	32	125	A	22
Mid Atlantic Seed	MAS 130	103.5	a-l	13.6	61.4	31	120	A	23
AgriMAXX	AM 502	102.9	a-m	13.5	60.7	33	122	A	24
Virginia Tech	13VTK429-3	102.8	a-m	13.4	61.3	32	123	A	25
UniSouth Genetics	USG 3571	102.8	a-m	13.4	61.6	32	124	A	26
Mid Atlantic Seed	MAS 35	102.7	a-m	13.4	59.7	31	125	A	27
Virginia Tech	VA16W-202	102.0	a-m	13.3	60.0	31	120	S	28

Dyna-Gro	WX20737	101.8	a-m	14.0	62.0	31	120	A	29
Mid Atlantic Seed	MAS 121	101.6	a-n	13.5	60.6	32	124	AL	30
Dyna-Gro	Shirley	101.3	a-n	11.9	58.7	30	122	AL	31
Local	LW2068	100.6	a-o	12.4	58.9	32	125	A	32
UniSouth Genetics	USG 3404	100.5	a-o	13.6	60.0	32	125	A	33
MeherrinAg	SH7510	100.3	a-o	14.0	61.1	31	123	A	34
Virginia Tech	Liberty 5658	100.3	a-p	13.3	61.2	32	120	A	35
AgriMAXX	AM EXP 2003	100.2	a-p	12.2	59.4	31	123	A	36
Growmark	FSX746	99.8	b-p	13.3	59.8	34	124	S	37
Mid Atlantic Seed	MAS 128	99.2	c-p	14.4	59.8	30	126	S	38
Mid Atlantic Seed	MAS 316	99.2	c-p	12.7	60.2	33	124	A	39
AgriPro	SY 547	98.5	d-p	13.2	59.4	33	120	S	40
Mid Atlantic Seed	MAS 86	98.1	d-p	13.2	59.5	33	123	A	41
Dyna-Gro	9002	97.8	d-p	13.3	60.0	32	123	A	42
Mercer	MBX246	97.7	d-p	13.6	61.6	32	125	A	43
KWS	KWS333	96.7	d-q	13.7	60.6	33	120	A	44
Mercer	MBX932	96.4	e-q	13.5	59.7	32	124	S	45
MeherrinAg	SH7200	96.2	e-q	13.6	61.7	33	120	A	46
AgriMAXX	AM 496	95.6	f-q	12.9	59.0	30	124	A	47
KWS	KWS207	95.2	g-r	13.1	59.6	28	127	S	48
Dyna-Gro	WX19713	95.0	g-r	13.5	62.1	32	125	A	49
Dyna-Gro	9932	94.7	h-r	13.2	60.7	31	125	A	50
AgriMAXX	AM 503	93.8	i-r	13.4	59.8	35	124	S	51
Local	LW2867	93.5	j-r	13.4	59.7	30	124	S	52
AgriPro	SY 007	92.8	k-r	13.8	60.4	33	118	A	53
Dyna-Gro	9772	91.8	l-r	12.3	57.9	33	122	A	54
Local	LW2958	91.7	l-r	13.5	60.3	33	123	A	55
Dyna-Gro	9070	91.6	m-r	13.4	60.6	32	122	A	56
Mid Atlantic Seed	MAS 140	89.8	n-r	13.7	59.8	34	125	S	57
Mercer	MBX17-M-245	88.9	o-r	13.3	59.5	31	121	S	58
AgriMAXX	AM 463	88.5	pqr	12.7	57.3	30	123	S	59
Public	Louisa	85.3	qr	13.7	61.4	33	120	A	60
AgriPro	SY Richie	85.0	qr	13.3	59.2	30	120	S	61
UniSouth Genetics	USG 3221	84.9	qr	13.6	60.9	32	118	A	62

Pioneer	25R74	83.5	rs	13.6	61.3	33	121	A	63
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LSD P=.05	11.855								
Standard Deviation	8.499								
CV	8.55								
Grand Mean	99.37	13.26	60.23	31.80	122.61				

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

*Heading: Julian date is the numerical calendar date. Example; Jan 1st=1, Dec 31st=365

**Head Type: A=Awne, AL=Awnelett (small awne), S=Smooth (no awn)

Middletown Wheat 2020

Plant
Harvest

10/25/2019
6/30/2020

Company/Institution	Variety	Yield bu/A		Moisture (harvest)	T.W.	Mtown Rank x Yield
Growmark	FSX745	148.4	a	14.2	60.3	1
Local	LWX20C	141.8	ab	14.1	59.7	2
Virginia Tech	VA16W-202	138.4	abc	14.1	60.1	3
Mid Atlantic Seed	MAS 143	137.7	a-d	14.1	60.6	4
Dyna-Gro	WX20731	135.7	a-e	14.1	60.2	5
Dyna-Gro	9772	135.5	a-e	13.9	59.5	6
AgriPro	SY Viper	134.7	a-f	14.3	61.3	7
Mid Atlantic Seed	MAS 136	133.4	b-g	14.0	58.9	8
Dyna-Gro	9941	132.6	b-g	13.8	59.4	9
AgriPro	SY 547	132.1	b-h	14.1	59.4	10
AgriMAXX	AM 505	131.5	b-i	14.2	61.6	11
AgriMAXX	AM 503	131.5	b-i	14.1	61.5	12
Mid Atlantic Seed	MAS 133	131.4	b-i	13.7	56.8	13
Local	LW2068	131.1	b-i	13.9	58.5	14
AgriPro	SY 007	131.0	b-i	14.2	58.4	15
UniSouth Genetics	USG 3790	129.9	b-j	14.2	59.6	16
AgriMAXX	AM 495	129.7	b-j	14.1	59.5	17
UniSouth Genetics	USG 3221	129.7	b-j	14.3	60.3	18
UniSouth Genetics	USG 3329	129.0	b-j	13.9	58.8	19
Mid Atlantic Seed	MAS 130	129.0	b-j	14.0	58.3	20
Croplan	CP8081	128.6	b-j	14.1	59.3	21
KWS	KWS242	128.4	b-j	14.0	58.9	22
Mid Atlantic Seed	MAS 121	127.8	b-j	14.0	59.1	23
Mid Atlantic Seed	MAS 35	127.7	b-j	14.1	59.9	24
Mid Atlantic Seed	MAS 140	127.5	c-j	14.2	61.0	25
UniSouth Genetics	USG 3404	127.3	c-j	14.0	58.1	26
UniSouth Genetics	USG 3230	127.2	c-j	14.0	60.2	27
Growmark	FSX746	126.9	c-j	14.1	60.8	28

UniSouth Genetics	USG 3118	126.5	c-j	14.3	62.3	29
Mercer	MBX932	126.1	c-j	14.1	60.4	30
Mercer	MBX223	125.9	c-j	14.0	59.2	31
Mercer	MBX17-M-245	125.8	c-j	14.0	59.0	32
UniSouth Genetics	USG 3571	125.4	c-j	14.2	60.5	33
AgriMAXX	AM EXP 2003	125.4	c-j	13.9	58.5	34
Mid Atlantic Seed	MAS 316	125.2	c-j	13.8	59.3	35
KWS	KWS333	124.9	c-j	14.0	60.8	36
Dyna-Gro	WX19713	124.5	c-k	14.1	61.4	37
Dyna-Gro	WX20737	124.5	c-k	14.4	62.0	38
Virginia Tech	13VTK429-3	124.1	d-l	14.1	60.7	39
UniSouth Genetics	USG 3316	123.9	d-l	14.0	58.6	40
Dyna-Gro	9070	123.8	d-l	14.1	59.6	41
Croplan	CP9606	123.6	d-l	14.0	57.9	42
Dyna-Gro	Shirley	123.6	e-l	13.8	58.0	43
Local	LW2958	123.5	e-l	14.2	61.0	44
Public	Louisa	123.1	e-l	14.2	61.6	45
Mid Atlantic Seed	MAS 86	123.0	e-l	14.1	59.4	46
AgriPro	SY 576	122.5	e-l	13.8	57.8	47
Mercer	MBX246	122.1	e-m	14.1	60.5	48
Dyna-Gro	9932	122.1	e-m	14.1	60.7	49
MeherrinAg	SH7510	121.2	f-m	14.0	59.4	50
AgriMAXX	AM 463	121.1	f-m	13.9	57.7	51
Virginia Tech	Liberty 5658	120.9	f-m	14.2	60.1	52
AgriMAXX	502	120.7	f-m	14.1	59.8	53
Pioneer	25R25	119.8	g-m	14.1	58.7	54
MeherrinAg	SH7200	119.6	g-m	14.2	60.1	55
AgriPro	SY Richie	118.3	h-m	14.1	58.3	56
AgriMAXX	AM 473	118.2	h-m	14.1	60.1	57
Pioneer	25R74	117.9	i-m	14.2	62.2	58
KWS	KWS207	116.5	j-m	13.2	56.7	59
AgriMAXX	AM 496	110.8	klm	13.9	58.7	60
Mid Atlantic Seed	MAS 128	110.1	lm	13.5	56.8	61
Dyna-Gro	9002	110.0	lm	14.1	58.6	62

Local	LW2867	108.0	m	14.1	61.0	63
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LSD P=.05	14.12	0.34	1.45
Standard Deviation	10.13	0.25	1.04
CV	8.10	1.76	1.75
Grand Mean	124.96	14.02	59.42

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Kent Wheat 2020

Plant 10/10/2019
Harvest 6/27/2020

Company/Institution	Variety	Yield bu/A		Moisture (at harvest)	T.W.	Kent Rank x Yield
Mid Atlantic Seed	MAS 143	116.6	a	13.8	61.7	1
Dyna-Gro	WX20737	112.0	ab	14.1	63.0	2
UniSouth Genetics	USG 3329	110.2	abc	13.8	60.9	3
Mid Atlantic Seed	MAS 316	110.1	abc	13.4	60.5	4
Mid Atlantic Seed	MAS 136	110.1	abc	13.9	80.5	5
Mercer	MBX223	109.8	a-d	13.9	61.1	6
Growmark	FSX745	109.4	a-d	13.8	61.2	7
Local	LWX20C	108.7	a-d	13.7	60.7	8
Dyna-Gro	WX20731	108.4	a-e	13.8	61.0	9
Mid Atlantic Seed	MAS 133	107.7	a-f	13.8	59.1	10
Virginia Tech	13VTK429-3	107.5	a-g	14.1	61.8	11
Local	LW2068	107.1	a-h	13.6	59.2	12
Mid Atlantic Seed	MAS 128	106.9	a-h	13.8	60.6	13
Dyna-Gro	WX19713	106.3	a-i	13.9	63.2	14
Dyna-Gro	9772	102.6	b-j	13.7	60.2	15
Mid Atlantic Seed	MAS 130	102.4	b-j	13.9	60.9	16
AgriMAXX	AM 505	101.8	b-k	13.9	63.0	17
MeherrinAg	SH7510	101.5	b-k	13.9	62.0	18
AgriMAXX	AM EXP 2003	101.2	b-l	13.5	60.1	19
KWS	KWS242	101.1	b-l	13.9	61.3	20
UniSouth Genetics	USG 3316	101.1	b-l	14.0	60.9	21
AgriMAXX	AM 496	100.7	b-m	13.9	59.7	22
AgriPro	SY 576	99.3	b-n	13.7	59.2	23
KWS	KWS207	98.7	b-o	13.7	58.8	24
Dyna-Gro	Shirley	98.6	b-o	13.8	58.4	25
Mid Atlantic Seed	MAS 35	97.8	c-o	13.8	61.3	26
AgriMAXX	AM 473	97.7	c-o	13.9	60.4	27

Dyna-Gro	9941	97.5	c-o	12.5	57.4	28
AgriMAXX	AM 502	96.9	c-o	13.8	60.2	29
Growmark	FSX746	96.0	d-o	13.7	59.5	30
Mid Atlantic Seed	MAS 86	94.7	e-p	14.0	56.8	31
Virginia Tech	Liberty 5658	94.7	e-p	13.9	60.9	32
Mid Atlantic Seed	MAS 121	94.0	f-p	14.1	60.4	33
UniSouth Genetics	USG 3790	93.7	f-q	14.0	60.4	34
UniSouth Genetics	USG 3404	93.7	g-q	13.9	77.8	35
Pioneer	25R25	93.2	h-q	14.1	58.8	36
AgriPro	SY 007	92.3	i-r	13.7	60.0	37
AgriPro	SY 547	92.3	i-r	13.9	59.0	38
AgriMAXX	AM 495	92.3	j-r	14.0	60.7	39
UniSouth Genetics	USG 3221	92.1	j-r	14.4	59.3	40
Croplan	CP9606	92.0	j-r	13.9	57.8	41
Pioneer	25R74	91.5	j-r	15.9	45.7	42
AgriPro	SY Viper	90.7	j-r	14.0	60.4	43
Virginia Tech	VA16W-202	90.5	j-r	13.7	59.3	44
Dyna-Gro	9070	89.9	j-r	13.8	59.7	45
AgriMAXX	AM 463	89.7	j-s	13.3	56.4	46
Local	LW2958	89.5	j-s	13.8	61.3	47
Mercer	MBX932	89.3	j-s	13.9	60.5	48
Mercer	MBX246	88.8	j-s	13.9	60.8	49
Croplan	CP8081	87.9	k-s	13.8	77.1	50
Dyna-Gro	9002	87.5	l-s	13.8	59.2	51
AgriPro	SY Richie	87.0	m-s	13.9	60.9	52
Local	LW2867	87.0	m-s	13.6	79.4	53
Dyna-Gro	9932	87.0	m-s	13.8	60.2	54
MeherrinAg	SH7200	86.2	n-t	14.0	58.9	55
UniSouth Genetics	USG 3118	86.2	n-t	14.2	58.8	56
Mid Atlantic Seed	MAS 140	85.4	n-t	13.5	59.5	57
UniSouth Genetics	USG 3571	84.8	o-u	13.8	60.7	58
AgriMAXX	AM 503	81.0	p-u	13.7	58.0	59
UniSouth Genetics	USG 3230	79.9	q-u	13.5	57.8	60
Mercer	MBX17-M-245	75.7	stu	13.9	55.8	61

Public	Louisa	72.6	tu	13.9	58.0	62
KWS	KWS333	70.8	u	13.8	55.8	63

LSD P=.05	13.99	0.756	15.13
Standard Deviation	10.03	0.542	10.85
CV	10.51	3.92	17.85
Grand Mean	95.44	13.82	60.77

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Selbyville Wheat 2020

Plant 10/30/2019
Harvest 6/29/2020

Please note that many varieties at this location were damaged by frost. I reported ranking, but not actual yield for the bottom quartile. There was a correlation between frost damage and earlier maturity varieties as can be observed using the heading dates from Georgetown. Also,

Company/Institution	Variety	Yield bu/A		Moisture (at harvest)	T.W.	Selby rank x yield	Georgetown** Heading (Julian)
Mid Atlantic Seed	MAS 136	108.8	a	13.7	60.4	1	124
KWS	KWS207	105.4	ab	13.5	58.1	2	127
AgriPro	SY 576	104.3	abc	13.6	59.0	3	127
Mid Atlantic Seed	MAS 128	100.7	a-d	13.5	58.3	4	126
Local	LWX20C	99.4	a-e	13.8	59.6	5	123
Mid Atlantic Seed	MAS 143	98.7	a-f	13.8	60.7	6	125
Mid Atlantic Seed	MAS 133	96.3	a-g	13.6	58.8	7	124
Mercer	MBX223	94.9	a-h	13.8	59.2	8	122
AgriMAXX	AM EXP 2003	92.2	b-i	13.6	58.9	9	123
Dyna-Gro	WX20731	91.9	b-j	13.8	59.4	10	123
Mid Atlantic Seed	MAS 316	91.8	b-j	13.6	58.7	11	124
Growmark	FSX745	91.0	b-k	13.9	59.7	12	124
AgriMAXX	AM 473	89.6	c-l	13.9	58.9	13	123
Dyna-Gro	9941	88.1	d-m	13.4	56.5	14	124
Mercer	MBX246	86.8	d-n	13.8	60.1	15	125
AgriMAXX	AM 505	86.7	d-n	13.9	59.9	16	124
Virginia Tech	13VTK429-3	86.3	d-n	13.9	61.0	17	123
Dyna-Gro	WX19713	86.0	d-n	13.8	60.8	18	125
UniSouth Genetics	USG 3329	84.9	e-o	13.6	60.4	19	124
UniSouth Genetics	USG 3316	84.2	f-o	13.7	59.1	20	123
Local	LW2958	83.4	g-p	13.8	58.8	21	123
Mid Atlantic Seed	MAS 35	83.0	g-p	13.8	59.6	22	125
Dyna-Gro	9932	82.4	g-p	13.6	58.6	23	125
AgriPro	SY 547	80.0	h-q	13.6	57.5	24	120

Pioneer	25R25	79.6	i-q	13.7	58.1	25	125
AgriMAXX	AM 495	78.9	i-q	13.9	57.9	26	124
UniSouth Genetics	USG 3571	78.7	i-q	13.7	58.6	27	124
Local	LW2867	78.0	i-r	13.4	56.8	28	124
UniSouth Genetics	USG 3790	76.9	j-s	13.6	59.2	29	124
Dyna-Gro	WX20737	76.5	k-s	13.8	59.4	30	120
Dyna-Gro	Shirley	74.6	l-s	13.3	54.8	31	122
AgriMAXX	AM 496	73.8	m-s	13.5	55.2	32	124
AgriPro	SY Viper	73.0	m-s	13.9	57.6	33	119
Local	LW2068	72.4	n-t	13.6	56.0	34	125
Mercer	MBX932	70.6	o-u	13.2	54.5	35	124
AgriMAXX	AM 502	70.2	o-u	13.7	56.2	36	122
Dyna-Gro	9772	68.4	p-v	12.1	55.1	37	122
Croplan	CP9606	67.3	q-v	13.0	52.1	38	122
Dyna-Gro	9070	66.7	q-v	13.9	55.2	39	122
UniSouth Genetics	USG 3404	66.6	q-v	12.8	52.3	40	125
Growmark	FSX746	63.4	r-w	12.9	49.6	41	124
Croplan	CP8081	63.0	r-w	12.8	49.9	42	121
MeherrinAg	SH7510	62.9	s-w	13.7	52.3	43	123
Mid Atlantic Seed	MAS 86	62.8	s-w	13.6	51.2	44	123
Dyna-Gro	9002	----		----	----	45	123
Mid Atlantic Seed	MAS 121	----		----	----	46	124
AgriMAXX	AM 503	----		----	----	47	124
UniSouth Genetics	USG 3230	----		----	----	48	120
Mid Atlantic Seed	MAS 140	----		----	----	49	125
Mercer	MBX17-M-245	----		----	----	50	121
KWS	KWS242	----		----	----	51	119
KWS	KWS333	----		----	----	52	120
Virginia Tech	Liberty 5658	----		----	----	53	120
AgriPro	SY 007	----		----	----	54	118
AgriPro	SY Richie	----		----	----	55	120
Mid Atlantic Seed	MAS 130	----		----	----	56	120
Pioneer	25R74	----		----	----	57	121
Public	Louisa	----		----	----	58	120

UniSouth Genetics	USG 3118	----		----	----	59	118
AgriMAXX	AM 463	----		----	----	60	123
Virginia Tech	VA16W-202	----		----	----	61	120
UniSouth Genetics	USG 3221	----		----	----	62	118
MeherrinAg	SH7200	----		----	----	63	120

LSD P=.05	15.05		
Standard Deviation	10.79		
CV	15.41		
Grand Mean	70.00	13.5*	57.3*

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

**Heading dates were only taken at the Georgetown location. They are provided here to illustrate that the early maturity varieties were most affected by the late frost.