

Wheat Tech Agronomy

2013-2014 Wheat Variety Performance Test Results

General Information:

The 2013-2014 wheat variety performance tests were conducted at three different sites: Adairville, Kentucky; Humboldt, Tennessee; and Bertrand, Missouri. The KY location contained 63, the TN location contained 54, and the MO location contained 55 different varieties.

Varieties were tested in conventional till (MO), minimum till (TN), and no-till (KY) practices. The preceding crop for all locations was corn. Seeding rates used for the conventionally and minimum tilled sites were 325 s/yd², while no-tilled rates were 375 s/yd². Trials were planted using a Hege Drill with a row spacing of 7.5 inches, and were harvested with a Kincaid 8-XP research combine. Plot dimensions used were 5 feet wide by 20 feet long. All sites contained four replications, and the experimental design used was randomized complete block.

All locations were managed intensively with split applications of nitrogen, insecticides, herbicide sprays in the fall and spring, and a spring foliar fungicide for head blight control. Nitrogen applied to the KY and TN locations was a January/March split application where the rate at KY was 45/85 pounds per acre, and the rate at TN was 55/67 pounds per acre. Nitrogen at MO was applied in a three pass application program during the months of January, March, and April at a rate of 37/37/80 pounds per acre. At the Kentucky no-till site, there were four replications treated with a foliar fungicide and four without. The objective for having four untreated replications is to see how each variety responds to the given level of head blight and create a yield fungicide response column. At the Tennessee and Missouri sites all replications were sprayed with a foliar fungicide.

Growing Season:

Throughout the month of October, planting went well at all locations. KY was planted October 12, MO planted October 14, and due to some rain events which delayed planting, TN was planted on October 26. Cold temperatures from November through March prohibited early season growth and tiller development on many acres of late planted wheat in all regions. As recorded from our on-site weather station, the average temperature for the month of November was 44 degrees Fahrenheit, and the average for December was 39 degrees Fahrenheit. The KY statewide average temperature for March based on the Kentucky Mesonet was 39.8 degrees while the statewide average temperature for March 2012 was 57.9 degrees, according to Dr. Stuart Foster, state climatologist and director of the Kentucky Mesonet. The poor fall growing conditions combined with excessive nutrient uptake from the high yielding corn crop called for increased levels of nitrogen to be applied. Applications were delayed this year as much as two weeks at some locations. Small to moderate amounts of Fusarium Head Blight were detected across all locations, however; reports of higher than normal DON levels in the Missouri bootheel region created concern for many growers. This delayed growth development lead to wheat harvest also being postponed more than in recent years.

Data Interpretation:

Maturity groups are separated out into the following classifications:

E = Early	M = Medium	L = Late
ME = Medium/Early	ML = Medium/Late	

The tables on the following pages have been prepared with the entries listed in order of performance, the highest-yielding entry being listed first. All yields presented have been adjusted to 13.5% moisture. At the bottom of the tables are there are three different values: LSD (Least Significant Difference), CV (Coefficient of Variation), and Grand Mean. The mean yields of any two varieties being compared must differ by at least the LSD amount shown to be considered different in yielding ability at the 5% level of probability of significance. CV is a measure of the error variability found within each experiment. It is the percentage that the square root of error mean square is of the overall test mean yield at that location. Grand Mean is the mean of all values in the group.

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Matt Miller – Research Associate
Ethan Huffines – Research Associate
Robert Stuard – Research Associate

Wheat Tech Owners:

Chris Bowley
Bill Brinkley
David West

Participating Companies:

Ag Alumni Seed Association
AgriMAXX Wheat Company
Armor Seed
Beck's Hybrids
Cache River Valley Seed Co.
DuPont Pioneer
Dyna-Gro Seed
Equity Seed
KY Small Grain Growers Association
L&M Glick Seed
Merschman Seeds, Inc.
Progeny Ag Products
Southern States
Syngenta Seeds
UniSouth Genetics, Inc.
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Supporting Chemical Companies:

Bayer CropScience
DuPont Crop Protection
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Table 1
2013-2014 Kentucky No-Till Wheat Variety Performance Results
Adairville, KY

Variety	Maturity	<u>Fungicide Treated</u>			Lodging (0-10)	Fungicide Response (bu/ac)	Heading Date (May)	Height (inches)
		Yield (bu/ac)	TW (lb/bu)					
Dyna-Gro WX13652	M	149.6	a*	57.8	0	17.8	8	33
DXEX 13-3	M	146.8	ab	58.3	0	6.7	8	38
Dixie Extreme	M	146.5	abc	56.3	3	10.9	8	38
AgriMAXX Exp 1444	M	146.5	abc	57.2	1	5.3	7	35
Dyna-Gro WX13622	M	145.2	a-d	56.8	0	10.4	8	34
Armor Havoc	ME	145.0	a-d	57.2	0	10.9	7	35
L&M 2123	M	145.0	a-d	56.5	0	8.7	6	34
SS 8340	ME	144.2	a-e	59.3	1	6.1	6	33
SY 483	M	143.6	a-f	56.6	1	10.3	8	38
Armor ARX1327	M	143.3	a-g	56.6	1	9.6	8	34
Beck 129	M	142.1	a-i	56.8	0	6.0	8	36
Dixie McAlister	M	141.7	a-j	56.2	0	5.6	6	33
AgriMAXX Exp 1465	M	141.1	a-k	57.5	0	11.8	8	32
AgriMAXX 438	ML	141.1	a-k	56.1	2	8.4	8	35
Dyna-Gro 9171	ME	141.0	a-k	56.6	0	3.6	6	31
AgriMAXX 413	E	140.5	a-l	55.3	0	12.1	4	31
Dyna-Gro 9012	M	139.9	b-m	58.4	1	7.2	7	34
Progeny 870	ME	139.4	b-n	56.3	0	7.0	6	32
SS 8360	M	138.6	b-n	57.6	0	10.7	7	33
Ag Alumni EX 02444	ME	138.6	b-o	56.1	0	-0.1	6	35
Dyna-Gro 9223	ML	138.6	b-o	56.1	1	13.1	8	37
Pioneer variety 26R10	M	138.4	b-o	57.0	0	5.8	7	33
Armor Octane	ML	138.0	b-p	56.4	0	8.3	8	39
AgriMAXX 415	M	137.8	b-p	58.7	2	13.1	7	33
Beck 120	ME	137.7	c-p	56.7	0	2.4	5	31
Pembroke 2014	E	137.5	c-p	58.2	0	6.6	5	34
Pioneer variety 26R20	M	136.9	d-q	57.2	2	8.3	8	35
Pioneer variety 25R40	E	136.8	d-r	56.8	0	0.9	8	32
Dyna-Gro WX13631	ME	136.7	d-r	58.1	2	0.7	6	34
Dixie Glory	M	136.6	d-r	56.2	0	9.5	8	38
Progeny 357	ME	136.5	d-r	56.0	1	5.1	8	35
Armor ARX1313	M	136.4	d-r	55.4	2	5.6	6	34
Armor ARX1325	M	135.5	e-s	57.4	0	10.2	8	32
Armor ARX1332	M	135.2	e-s	57.3	0	9.8	7	32
Progeny PGX 13-1	M	135.0	f-s	56.6	0	6.7	8	38
SY 007	ME	135.0	f-s	57.0	1	5.5	4	33
Pembroke 2008	E	134.5	f-s	57.6	0	5.6	6	35
Pioneer variety 26R41	M	134.3	g-t	57.5	0	8.3	8	32
L&M 7511	ME	134.0	h-t	56.2	0	9.7	6	31

Table 1 - Continued

Variety	Maturity	Fungicide Treated			Fungicide	Heading	Height (inches)	
		Yield (bu/ac)	TW (lb/bu)	Lodging (0-10)	Response (bu/ac)	Date (May)		
Ag Alumni EX 0762	ME	134.0	h-t	56.9	0	1.7	6	34
Armor ARX1329	M	133.9	h-t	58.6	1	4.1	6	34
Dyna-Gro 9042	M	132.7	j-u	56.8	0	5.6	7	35
Pioneer variety 25R78	M	132.4	k-v	57.8	0	8.4	5	33
Beck 125	M	132.3	k-v	57.7	0	4.7	7	37
SY 474	M	132.2	k-v	58.0	0	3.2	7	37
Armor Rampage	M	131.9	l-v	55.5	2	9.5	6	35
KY03C-1002-02	E	131.6	l-v	56.7	1	3.9	6	35
EXP 13W34	M	131.4	m-v	56.4	0	6.9	8	36
Armor Vandal	M	130.8	n-v	56.8	0	7.1	8	34
SS 8870	L	130.5	n-v	57.3	1	10.3	8	36
SS 8700	L	129.5	o-w	54.1	2	10.7	8	35
SS 8415	ML	129.1	p-w	55.9	3	8.7	7	34
Pioneer variety 26R53	M	128.9	p-w	58.0	0	5.4	8	32
Guardian	ML	128.2	q-w	57.9	1	8.4	8	36
Progeny 117	E	127.8	r-w	56.9	4	6.7	6	34
AgriMAXX 447	ML	127.0	s-w	56.5	0	7.4	9	36
DXEX 14-2	M	125.4	t-w	57.9	0	9.5	8	37
SS 8412	M	124.6	uvw	58.6	0	8.5	7	34
Beck 113	ME	124.5	uvw	57.8	0	1.0	5	34
L&M EXP	ME	123.5	vwx	57.4	0	1.7	4	31
Progeny 185	M	123.5	vwx	57.7	1	0.4	6	39
Pioneer variety 25R32	E	120.8	wx	57.6	1	1.0	8	34
KY03C-1237-05	E	115.3	x	57.3	0	0.1	7	35
LSD (P=.05)		9.1	.	.	.	.	.	.
CV		4.8	.	.	.	.	.	.
Grand Mean		135.5		57.1	1	6.9	7	34

Planted: October 12, 2013; Harvested: June 30, 2014

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

Table 2
2013-2014 Missouri Wheat Variety Performance Results
Bertrand, MO

Variety	Maturity	Yield (bu/ac)	TW (lb/bu)	Height (inches)
Dixie Extreme	M	122.2 a*	59.1	37
Dyna-Gro 9223	ML	120.2 ab	59.1	37
Pioneer variety 25R40	E	119.5 abc	60.8	33
Merschman Barbie 9	ME	118.3 a-d	58.6	34
Beck 129	M	116.3 a-e	59.3	37
AgriMAXX 438	ML	116.3 a-e	59.5	37
SY Harrison	M	115.9 a-e	59.0	32
USG 3404	ML	114.9 a-f	58.8	34
AgriMAXX 413	E	113.8 a-g	58.8	30
Armor Rampage	M	113.3 a-h	58.5	35
Beck 120	ME	112.6 a-i	58.5	31
Warren Seed McKay 110	ML	112.5 a-j	59.9	36
AgriMAXX Exp 1444	M	111.9 b-j	58.4	33
AgriMAXX 447	ML	111.8 b-k	57.5	36
Armor Octane	ML	111.5 b-l	58.4	35
Pioneer variety 26R20	M	111.3 b-m	60.5	36
Progeny 117	E	110.7 b-n	59.9	36
USG 3251	ML	110.4 b-n	59.3	36
Progeny 870	ME	110.2 c-n	59.3	31
Pioneer variety 26R10	M	109.6 c-o	59.1	34
Dyna-Gro WX13631	ME	109.3 d-p	60.6	34
AgriMAXX Exp 1465	M	109.1 d-q	59.2	34
Progeny 357	ME	109.0 d-q	58.1	33
Armor Havoc	ME	108.8 d-r	60.6	35
Warren Seed LW0001	M	108.4 d-r	59.1	35
Pioneer variety 26R41	M	108.3 d-r	59.2	31
Dyna-Gro 9012	M	108.2 e-r	61.1	31
Dyna-Gro WX13622	M	108.0 e-r	58.8	33
Pembroke 2008	E	107.6 e-r	60.3	34
Dixie McAlister	M	107.4 e-r	58.8	32
Pioneer variety 25R32	E	107.3 e-r	60.4	34
Warren Seed LW0002	M	107.3 e-r	58.7	33
KY03C-1002-02	E	106.7 e-r	61.0	34
Beck 125	M	105.5 f-s	60.1	36
Pioneer variety 26R53	M	105.4 f-s	60.9	32
Dyna-Gro 9171	ME	104.7 g-s	59.0	31
USG 3201	M	104.5 g-s	61.4	32
USG 3438	ME	104.0 g-s	58.9	30
DXEX 13-3	M	103.8 g-s	59.2	37
Merschman Genie 12	ME	103.6 h-s	62.4	32

Table 2 - Continued

Variety	Maturity	Yield (bu/ac)		TW (lb/bu)	Height (inches)
AgriMAXX 415	M	103.6	h-s	61.4	32
Beck 113	ME	102.9	i-s	61.0	36
Merschman Julie 8	E	102.6	j-s	59.6	34
Dyna-Gro 9373	ML	102.5	j-s	58.0	34
Pioneer variety 25R78	M	101.9	k-s	60.3	33
Armor Vandal	M	101.7	l-s	59.8	34
Progeny 185	M	101.4	m-t	59.4	37
Guardian	ML	100.9	n-t	59.1	33
Dixie Glory	M	100.2	o-t	57.6	35
Progeny PGX 13-1	M	100.1	o-t	57.1	35
Oakes	M	99.4	p-t	61.0	35
EXP 13W34	M	99.0	rst	58.4	35
DXEX 14-2	M	96.0	st	58.3	37
Pembroke 2014	E	95.9	st	61.5	32
KY03C-1237-05	E	91.5	t	61.1	33
LSD (P=.05)		10.0		.	.
CV		6.6		.	.
Grand Mean		107.4		59.5	34

Planted: October 14, 2013; Harvested: June 19, 2014

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

Table 3
2013-2014 Tennessee Wheat Variety Performance Results
Humboldt, TN

Variety	Maturity	Yield (bu/ac)	TW (lb/bu)	Height (inches)
AgriMAXX 438	ML	122.2 a*	55.8	36
Dyna-Gro WX13631	ME	121.3 ab	56.9	32
Dixie Extreme	M	120.0 abc	55.9	35
Beck 120	ME	117.4 a-d	55.0	30
USG 3438	ME	117.2 a-e	55.6	30
Progeny 117	E	117.1 a-e	56.8	32
Dyna-Gro WX13622	M	117.1 a-f	55.7	32
Armor Rampage	M	116.2 a-g	54.7	34
Warren Seed LW0001	M	116.2 a-h	57.2	34
Pioneer variety 25R78	M	115.3 a-i	56.5	32
Warren Seed LW0002	M	114.9 a-i	55.6	32
Progeny 870	ME	114.6 a-i	55.1	30
USG 3201	M	113.9 a-j	57.3	31
SY Harrison	M	113.7 a-j	54.4	30
AgriMAXX 415	M	113.5 a-j	57.8	31
DXEX 13-3	M	113.2 a-j	56.6	34
Beck 113	ME	113.2 a-j	56.8	32
Dyna-Gro 9012	M	112.4 a-k	57.5	33
Beck 129	M	111.7 a-k	55.5	34
Progeny 357	ME	111.4 a-k	53.5	33
AgriMAXX 413	E	111.0 a-k	55.1	29
Armor Havoc	ME	110.6 b-k	55.8	33
USG 3404	ML	110.6 b-k	55.4	31
Dyna-Gro 9223	ML	110.4 b-k	55.5	34
AgriMAXX Exp 1444	M	109.7 c-k	55.4	32
Pioneer variety 26R41	M	109.6 c-k	56.0	30
Oakes	M	109.2 c-k	57.8	34
Progeny PGX 13-1	M	108.3 d-k	55.3	35
USG 3251	ML	107.7 d-l	55.6	33
EXP 13W34	M	107.5 d-l	55.4	34
Beck 125	M	107.1 d-l	56.1	34
AgriMAXX Exp 1465	M	107.0 d-l	55.1	31
Dyna-Gro 9373	ML	106.9 d-l	55.6	33
Ag Alumni EX 0762	ME	106.8 d-l	55.1	32
Pembroke 2008	E	106.6 d-l	56.8	32
Dixie McAlister	M	106.6 d-l	54.6	29
Warren Seed McKay 110	ML	106.1 e-l	55.4	32
Pioneer variety 26R53	M	105.9 f-l	55.8	30
KY03C-1002-02	E	105.6 g-l	56.3	31
Pioneer variety 25R32	E	105.1 g-l	56.8	32

Table 3 - Continued

Variety	Maturity	Yield (bu/ac)	TW (lb/bu)	Height (inches)
Pioneer variety 25R40	E	105.0 h-l	54.4	30
Pioneer variety 26R10	M	104.7 i-l	54.9	31
Pioneer variety 26R20	M	104.5 i-l	54.1	34
Armor Octane	ML	104.4 i-l	55.6	34
Dyna-Gro 9171	ME	104.3 i-l	54.5	28
Dixie Glory	M	104.2 i-l	55.3	34
Guardian	ML	104.1 i-l	57.2	33
AgriMAXX 447	ML	102.8 jkl	55.2	34
Ag Alumni EX 02444	ME	102.7 j-m	54.9	33
Progeny 185	M	102.7 j-m	56.0	37
Pembroke 2014	E	101.7 k-n	56.5	31
Armor Vandal	M	101.6 k-n	54.6	32
DXEX 14-2	M	91.5 mn	55.7	35
KY03C-1237-05	E	90.6 n	55.6	33
LSD (P=.05)		11.2	.	.
CV		7.4	.	.
Grand Mean		108.9	55.7	32

Planted: October 26, 2013; Harvested: June 23, 2014

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

Table 4
2013-2014 Wheat Variety Performance Results
Three Location Average

Variety	Maturity	Yield (bu/ac)	TW (lb/bu)	Height (inches)
Dixie Extreme	M	129.6	57.1	37
AgriMAXX 438	ML	126.5	57.1	36
Dyna-Gro WX13622	M	123.4	57.1	33
Beck 129	M	123.4	57.2	36
Dyna-Gro 9223	ML	123.0	56.9	36
AgriMAXX Exp 1444	M	122.7	57.0	33
Beck 120	ME	122.6	56.8	31
Dyna-Gro WX13631	ME	122.4	58.5	33
AgriMAXX 413	E	121.8	56.4	30
Armor Havoc	ME	121.5	57.8	34
Progeny 870	ME	121.4	56.9	31
DXEX 13-3	M	121.3	58.0	36
Armor Rampage	M	120.5	56.2	35
Pioneer variety 25R40	E	120.4	57.3	31
Dyna-Gro 9012	M	120.2	59.0	33
AgriMAXX Exp 1465	M	119.1	57.3	32
Progeny 357	ME	119.0	55.8	34
Dixie McAlister	M	118.6	56.5	31
Progeny 117	E	118.5	57.9	34
AgriMAXX 415	M	118.3	59.3	32
Armor Octane	ML	117.9	56.8	36
Pioneer variety 26R10	M	117.6	57.0	33
Pioneer variety 26R20	M	117.6	57.3	35
Pioneer variety 26R41	M	117.4	57.6	31
Dyna-Gro 9171	ME	116.7	56.7	30
Pioneer variety 25R78	M	116.5	58.2	33
Pembroke 2008	E	116.3	58.2	33
Beck 125	M	115.0	58.0	35
KY03C-1002-02	E	114.6	58.0	33
Progeny PGX 13-1	M	114.5	56.3	36
AgriMAXX 447	ML	113.8	56.4	35
Dixie Glory	M	113.7	56.4	35
Beck 113	ME	113.6	58.5	34
Pioneer variety 26R53	M	113.4	58.2	31
EXP 13W34	M	112.6	56.8	35
Pembroke 2014	E	111.7	58.7	33
Armor Vandal	M	111.4	57.0	33
Guardian	ML	111.1	58.1	34
Pioneer variety 25R32	E	111.1	58.3	33
Progeny 185	M	109.2	57.7	37
DXEX 14-2	M	104.3	57.3	36
KY03C-1237-05	E	99.1	58.0	34
Grand Mean		117.2	57.4	34