

Wheat Tech Agronomy

2014-2015 Wheat Variety Performance Test Results

General Information:

The 2014-2015 winter wheat variety performance tests were conducted at three different sites: Auburn, Kentucky; Humboldt, Tennessee; and Bertrand, Missouri. The KY location contained 77, the TN location contained 68, and the MO location contained 60 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 Fusarium Head Blight (FHB) control. Nitrogen applied to all locations was a January/March split application. The rate at KY was 60/65 pounds per acre, the rate at TN was 55/65 pounds per acre, and MO was 50/95 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 foliar diseases, and then create a yield fungicide response column. At the Tennessee and Missouri sites all replications were sprayed with a foliar fungicide.

Growing Season:

Planting of all locations was postponed due to heavy amounts of rainfall in early October. According to our WatchDog Weather Station, from October 1st -15th Franklin, KY received 6.68 inches of rain. After planting, the fall would continue to set a trend for the wheat throughout winter. From November 12th -21st, a polar vortex plagued the plot areas. Temperatures at the Auburn, KY location reached lows of 14°F. These temperatures delayed the later planted wheat from emerging and earlier planted wheat from putting much fall growth on. The month of February would bring more extreme weather. On February 16, 2015 a winter storm came through the Mid-South region and left up to 10 inches of snow in some areas; this storm also brought extremely cold weather. Low temperatures on February 19th were recorded at -19°F and only a high of 15°F. Winter damage to the wheat would have been severe except the snow covered ground helped to insulate and protect it during this harsh time. Winter would extend itself, with another snow storm occurring on March 4th.

Although spring was slow to arrive and very wet, wheat seemed to be growing steadily and progressing nicely. The month of April brought 8.5 inches of rain. As we approached Feekes 10.51 (flowering) in early May, the rain seemed too stopped briefly. From April 26th – May 16th only 0.25” of rain was recorded at the Kentucky no-till location. This allowed for wheat, at all locations, and for growers, to apply fungicides in a timely manner. This timeliness combined with little rainfall during flowering lead to almost no traces of FHB in KY and MO, however; the west TN location did experience some moderate levels.

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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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.
Croplan by Winfield
DuPont Pioneer
Dyna-Gro Seed
Equity Seed
Kentucky American Seeds
KY Small Grain Growers Association
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Table 1

2014-2015 Missouri Winter Wheat Variety Performance Results

Bertrand, MO

Variety	Maturity	Yield (bu/ac)		TW (lb/bu)	Height (inches)
Pioneer variety 26R41	M	116.9	a*	57.2	34
Pioneer variety XW13T	M	112.9	ab	55.0	32
AgriMAXX 446	M	112.6	abc	56.7	35
AgriMAXX Exp 1555	M	111.6	a-d	55.8	35
Progeny 870	ME	111.4	a-e	54.7	33
Dixie Extreme	M	109.2	a-f	56.2	37
AgriMAXX 444	M	108.8	a-f	56.2	34
Dyna-Gro 9171	ME	108.2	a-g	54.7	32
AgriMAXX 413	E	107.2	a-h	55.4	33
Beck EX 5307	M	107.0	a-h	56.0	34
USG 3404	ML	106.9	a-h	56.2	33
Dixie DSEX 15-2	M	106.6	a-h	55.8	34
Pembroke 2014	E	106.0	a-i	57.6	34
Dyna-Gro 9522	M	105.7	a-j	55.8	34
Progeny PGX 13-6	M	105.4	b-k	55.9	32
Dixie DSEX 15-1	M	105.2	b-k	56.1	34
Beck EX 5315	ME	105.1	b-k	55.7	37
Pembroke 2016	E	104.9	b-k	56.2	34
AgriPro SY 474	M	104.9	b-k	56.4	38
AgriMAXX 438	ML	104.6	b-k	56.1	37
AgriMAXX Exp 1450	M	104.3	b-k	57.1	37
Pioneer variety XW13W	ML	104.2	b-k	56.1	33
Armor Havoc	ME	103.9	b-k	56.5	35
Pioneer variety 26R53	ME	103.1	b-l	57.4	32
Beck 125	M	102.8	b-l	56.7	35
Dixie Kelsey	M	102.4	b-l	57.4	33
Dixie McAlister	M	102.2	b-l	54.7	33
KY03C-1237-10	E	101.8	b-l	56.6	34
Pioneer variety 26R10	L	101.7	c-l	55.9	34
Beck 120	ME	101.7	c-l	54.6	33
USG 3438	ME	101.2	d-m	54.5	33
AgriPro SY 483	M	101.0	d-m	55.4	35
AgriPro SY Harrison	M	100.5	d-m	55.4	33
Bulter	M	100.4	e-n	55.4	35
Dyna-Gro 9012	M	100.3	e-n	57.8	32
Dyna-Gro WX15742	M	99.9	f-n	54.8	34
USG 3013	ML	99.9	f-n	55.8	37
Progeny PGX 14-3	ME	99.5	f-n	55.6	36
Progeny 357	ME	98.6	f-n	54.0	34
Dyna-Gro 9223	ML	98.4	f-n	55.9	36

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Table 1 - Continued

2014-2015 Missouri Winter Wheat Variety Performance Results

Bertrand, MO

Variety	Maturity	Yield (bu/ac)		TW (lb/bu)	Height (inches)
Armor ARX1412	M	97.3	g-n	56.0	34
Dixie DSEX 13-3	M	96.7	h-o	56.1	35
AgriMAXX 447	ML	96.6	h-o	55.0	35
Seinna	ME	96.5	h-o	55.7	40
Pembroke 2008	E	96.5	h-o	56.3	34
AgriMAXX 415	M	96.4	h-o	57.4	33
Dyna-Gro 9591	ME	95.1	i-o	56.6	35
Guardian	ML	95.1	i-o	57.4	34
KY03C-1237-05	ML	94.8	j-o	56.6	35
Pioneer variety 25R32	ML	94.7	j-o	56.6	35
AgriPro SY 547	ME	94.4	k-o	55.9	35
Merschman Samantha	L	92.4	l-p	57.1	35
Merschman Barbie 11	ML	90.4	m-q	56.4	33
Merschman Peyton	M	89.3	n-r	56.5	36
Progeny 410	M	89.3	n-r	56.3	38
AgriPro SY 007	ME	82.9	p-s	56.2	33
Beck 113	ME	80.4	qrs	55.5	34
Progeny 125	E	79.9	qrs	55.8	35
AgriPro Branson	ME	78.3	rs	55.0	32
Progeny 117	E	76.6	s	55.6	35
LSD (P=.05)		11.2		.	.
CV		8.0		.	.
Grand Mean		99.8		56.0	34

Planted: October 18, 2014; Harvested: June 22, 2015

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

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Table 2

2014-2015 Tennessee Winter Wheat Variety Performance Results

Humboldt, TN

Variety	Maturity	Yield (bu/ac)	TW (lb/bu)	Height (inches)
Pioneer variety XW13W	ML	125.2 a	61.4	34
AgriMAXX Exp 1555	M	120.8 ab	60.9	36
KAS Liberty IV	ME	120.6 abc	59.5	35
AgriMAXX 438	ML	120.3 abc	59.0	38
AgriMAXX 444	M	119.5 a-d	60.0	35
Dyna-Gro 9522	M	118.1 a-e	59.8	34
AgriMAXX 446	M	118.0 a-f	60.2	34
Dyna-Gro 9223	ML	116.9 a-g	58.3	39
Armor ARX1412	M	116.6 b-h	60.9	36
Progeny 357	ME	116.4 b-h	58.0	36
Pembroke 2016	E	116.1 b-i	61.4	35
AgriPro SY Harrison	M	116.0 b-i	59.0	35
Pioneer variety 26R10	L	116.0 b-i	60.1	35
Dyna-Gro 9171	ME	115.8 b-j	59.6	30
Pioneer variety XW13T	M	115.5 b-k	58.1	32
Warren Seed McKenna 325	M	115.5 b-k	58.5	34
Beck 120	ME	114.5 b-l	58.6	31
AgriMAXX 415	M	114.5 b-l	61.9	36
AgriMAXX 447	ML	114.2 b-l	58.6	38
USG 3404	ML	113.5 b-l	59.5	33
Pioneer variety 26R53	ME	113.4 b-m	61.1	33
Guardian	ML	113.3 b-m	59.4	37
Dixie DXEX 15-2	M	113.0 b-m	59.4	35
Dixie DXEX 15-1	M	112.9 b-m	59.7	35
Beck EX 5307	M	112.8 b-m	59.6	34
KY03C-1237-10	E	112.3 c-m	62.0	35
Ag Alumni EXP 0762	ME	112.2 c-m	58.9	35
Progeny PGX 14-3	ME	111.9 d-n	60.8	38
Warren Seed McKay 120	M	111.8 d-n	59.9	35
KAS S1200	M	111.8 d-n	59.2	31
USG 3438	ME	111.3 d-n	59.7	31
Dixie McAlister	M	111.1 d-n	58.9	30
Dixie DXEX 13-3	M	110.9 e-n	59.8	37
Progeny 870	ME	110.8 e-n	59.8	30
AgriPro SY 547	ME	110.8 e-n	60.7	38
AgriPro SY 483	M	110.7 e-n	59.0	39
USG 3013	ML	110.6 e-n	58.9	37
Dixie Extreme	M	110.5 e-n	59.2	37
KAS Lowery	M	110.4 e-n	60.3	36
AgriMAXX 413	E	110.0 e-n	59.4	31

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Table 2 - Continued

2014-2015 Tennessee Winter Wheat Variety Performance Results

Humboldt, TN

Variety	Maturity	Yield (bu/ac)	TW (lb/bu)	Height (inches)
Progeny PGX 13-6	M	109.9 e-n	59.8	34
Dyna-Gro 9012	M	109.7 e-n	62.0	34
Beck EX 5315	ME	109.6 f-n	60.1	39
Dyna-Gro 9591	ME	109.0 g-o	61.0	34
Warren Seed McKay 110	ML	108.9 g-o	59.4	37
Progeny 117	E	108.8 g-o	58.6	36
KAS S2000	ME	108.7 g-o	59.9	35
Bulter	M	108.5 g-p	58.1	39
Pembroke 2008	E	108.4 h-p	59.9	35
AgriPro Branson	ME	108.3 h-p	59.5	33
Warren Seed McKenna 315	ME	107.6 i-p	59.7	30
KY03C-1237-05	ML	107.5 j-p	61.4	36
Dixie Kelsey	M	107.4 j-p	62.1	35
Progeny 125	E	107.4 j-p	59.0	35
Armor Havoc	ME	107.3 j-p	60.3	35
KAS 5058	ME	107.2 k-p	61.6	37
Pioneer variety 26R41	M	106.7 l-p	60.6	32
Pioneer variety 25R32	ML	106.7 l-p	61.6	34
Beck 113	ME	106.6 l-p	58.9	37
Pembroke 2014	E	106.3 l-q	61.6	32
AgriPro SY 007	ME	106.3 l-r	59.7	33
AgriMAXX Exp 1450	M	104.9 m-r	61.2	35
Ag Alumni EXP 02444	ME	103.7 n-r	57.1	37
Dyna-Gro WX15742	M	103.4 n-r	58.9	35
Beck 125	M	100.5 o-r	61.3	37
AgriPro SY 474	M	100.1 pqr	58.9	38
Seinna	ME	98.2 qr	58.1	42
Progeny 410	M	97.8 r	59.6	41
LSD (P=.05)		8.5	.	.
CV		5.5	.	.
Grand Mean		111.1	59.8	35

Planted: October 24, 2014; Harvested: June 15, 2015

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

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Table 3

2014-2015 Kentucky No-Till Winter Wheat Variety Performance Results

Auburn, KY

Variety	Maturity	Fungicide Treated					Fungicide Response (bu/ac)	Heading Date (May)
		Yield (bu/ac)	TW (lb/bu)	Lodging %	Height (inches)			
Pioneer variety XW13W	ML	135.0	a*	59.1	0	38	11.3	5
AgriMAXX Exp 1555	M	131.7	ab	58.6	0	40	12.7	6
KAS Liberty IV	ME	130.3	abc	56.9	3	38	13.0	4
CROPLAN 9415	M	130.2	a-d	58.7	5	37	16.1	6
AgriMAXX 446	M	130.0	a-e	58.8	3	37	11.0	4
AgriMAXX 438	ML	129.9	a-e	57.4	13	41	16.0	6
Warren Seed McKenna 325	M	129.7	a-f	57.3	0	38	10.3	4
Pioneer variety 26R10	L	128.0	a-g	57.0	0	37	16.3	6
Armor ARX1412	M	127.9	a-g	58.3	3	39	16.5	3
Beck EX 5315	ME	127.9	a-g	57.7	0	41	7.1	3
Beck EX 5307	M	127.8	a-h	56.9	0	39	15.5	6
AgriPro SY 483	M	127.7	a-h	57.2	10	40	9.9	5
USG 3013	ML	127.5	a-h	57.1	8	39	21.4	6
CROPLAN 9101	M	127.4	a-h	57.3	0	38	11.2	5
AgriPro SY 007	ME	127.0	a-i	58.6	0	38	11.6	3
Progeny PGX 13-6	M	126.8	b-j	57.4	0	38	14.9	6
Dyna-Gro 9012	M	126.7	b-k	60.3	0	38	10.7	4
L- Brand 321	M	126.3	b-l	58.3	30	39	14.2	4
Pioneer variety 26R41	M	125.8	b-m	58.5	0	36	9.8	4
Dyna-Gro 9552	M	125.5	b-n	58.9	0	36	10.7	5
SS 8340	ME	125.2	b-n	59.2	0	38	9.3	4
SS 8700	L	124.7	b-o	57.4	73	41	16.0	6
AgriMAXX 444	M	124.6	b-o	57.7	0	38	9.2	6
Beck 125	M	124.5	b-o	59.0	0	37	13.0	5
AgriMAXX 415	M	124.1	b-p	60.6	0	38	11.9	4
Pioneer variety XW13T	M	124.0	b-p	55.4	0	33	8.6	4
CROPLAN 9201	ML	123.9	b-q	56.9	0	38	12.8	5
Dyna-Gro 9223	ML	123.9	b-q	56.4	0	40	17.0	7
KY03C-1237-10	E	123.2	c-r	59.0	0	37	7.5	3
Dyna-Gro 9171	ME	123.2	c-r	55.2	0	36	11.6	4
KAS S1200	M	122.7	c-s	55.8	0	36	12.2	3
Warren Seed McKay 120	M	122.7	c-s	57.5	0	38	8.7	5
AgriMAXX Exp 1450	M	122.7	c-t	59.3	0	38	12.3	4
Dyna-Gro 9522	M	122.4	c-u	56.7	0	37	13.1	7
SS EXP 8530	E	122.4	c-u	56.0	0	38	8.6	3
Pembroke 2016	E	122.3	c-u	59.7	0	38	5.6	3
SS 8360	ML	122.2	d-v	58.5	0	36	12.3	5
L- Brand 168	ME	122.0	e-v	57.6	55	39	14.6	3
AgriPro SY 474	M	121.7	f-v	56.8	10	41	8.4	6
KAS S2000	ME	121.6	f-v	57.3	0	37	13.1	3
Pembroke 2008	E	121.5	g-w	58.4	0	39	16.1	4
Progeny PGX 14-3	ME	121.5	g-w	57.9	0	41	3.2	3

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Table 3 - Continued
2014-2015 Kentucky No-Till Winter Wheat Variety Performance Results
Auburn, KY

Variety	Maturity	Fungicide Treated					Fungicide Response (bu/ac)	Heading Date (May)
		Yield (bu/ac)	TW (lb/bu)	Lodging %	Height (inches)			
AgriMAXX 413	E	121.5	g-w	55.6	0	36	9.5	3
Pioneer variety 25R32	ML	121.4	g-w	59.3	0	39	12.0	5
Dyna-Gro WX15742	M	121.4	g-w	56.1	0	39	11.8	3
CROPLAN 9203	M	121.0	g-w	58.9	15	40	10.4	6
Dyna-Gro 9591	ME	120.9	g-w	58.4	0	39	12.5	3
USG 3438	ME	120.8	g-x	55.9	0	35	9.2	4
Beck 120	ME	120.8	g-x	55.6	0	35	8.3	3
L- Brand 241	ME	120.6	g-x	57.1	23	40	12.9	5
KY03C-1237-05	ML	120.6	g-x	58.3	0	40	14.3	8
2123 L&M Glick	M	120.2	g-y	56.5	0	37	17.9	3
AgriPro SY 547	ME	120.1	g-y	58.0	0	40	8.1	4
Pioneer variety 26R53	ME	119.7	h-y	59.3	0	36	10.0	5
KAS 5058	ME	119.0	i-z	58.8	20	39	6.6	5
Pembroke 2014	E	118.9	j-z	59.1	0	36	9.3	3
Warren Seed McKay 110	ML	118.7	k-z	57.1	0	39	7.1	5
Ag Alumni EXP 0762	ME	118.2	l-z	56.1	3	36	8.8	4
Guardian	ML	118.0	m-z	58.4	5	40	16.6	6
Armor Havoc	ME	117.8	m-A	58.9	0	36	11.6	6
Progeny 870	ME	117.7	n-A	55.1	0	36	12.1	4
USG 3404	ML	116.6	o-A	56.9	0	38	11.7	6
Warren Seed McKenna 315	ME	116.2	p-A	55.9	0	36	12.8	5
Bulter	M	116.1	p-A	55.2	0	39	13.1	5
Seinna	ME	115.9	q-A	55.9	0	41	8.5	4
Progeny 125	E	115.3	r-A	57.2	48	41	11.0	4
AgriPro Branson	ME	114.9	s-A	57.4	0	37	9.9	4
AgriMAXX 447	ML	114.9	s-A	55.1	3	40	8.7	5
Beck 113	ME	114.6	t-A	56.8	0	36	10.5	3
Progeny 357	ME	114.5	u-B	54.9	5	37	11.9	6
Dyna-Gro WX14611	ME	114.2	v-B	55.8	0	39	6.0	3
L- Brand 304	M	113.5	w-B	60.5	10	43	9.1	4
Ag Alumni EXP 02444	ME	112.8	x-B	55.7	0	37	13.0	4
SS EXP 8513	E	112.2	y-B	58.8	50	39	6.4	2
Progeny 410	M	111.2	zAB	58.2	18	43	6.3	4
KAS Lowery	M	111.0	zAB	56.4	0	40	14.8	8
Progeny 117	E	110.0	AB	58.0	30	40	11.8	4
LSD (P=.05)		8.1	.	.	.	.	.	.
CV		4.8	.	.	.	.	.	.
Grand Mean		121.7		57.5	7	38	11.4	5

Planted: October 27, 2014; Harvested: June 25, 2015

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

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Table 4

2014-2015 Winter Wheat Variety Performance Results

Three Location Average

Variety	Maturity	Yield (bu/ac)	TW (lb/bu)	Height (inches)
Pioneer variety XW13W	ML	121.5	58.9	35
AgriMAXX Exp 1555	M	121.4	58.4	37
AgriMAXX 446	M	120.2	58.6	35
AgriMAXX 438	ML	118.3	57.5	39
AgriMAXX 444	M	117.7	58.0	36
Pioneer variety XW13T	M	117.5	56.2	32
Pioneer variety 26R41	M	116.5	58.8	34
Beck EX 5307	M	115.9	57.5	35
Dyna-Gro 9171	ME	115.7	56.5	33
Dyna-Gro 9522	M	115.4	57.5	35
Pioneer variety 26R10	L	115.3	57.7	35
Pembroke 2016	E	114.5	59.1	35
Beck EX 5315	ME	114.2	57.8	39
Progeny PGX 13-6	M	114.0	57.7	35
Armor ARX1412	M	113.9	58.4	36
Progeny 870	ME	113.3	56.5	33
AgriPro SY 483	M	113.1	57.2	38
Dyna-Gro 9223	ML	113.1	56.9	38
AgriMAXX 413	E	112.9	56.8	33
USG 3013	ML	112.7	57.2	38
KY03C-1237-10	E	112.4	59.2	36
USG 3404	ML	112.4	57.5	35
Beck 120	ME	112.3	56.3	33
Dyna-Gro 9012	M	112.3	60.0	35
Pioneer variety 26R53	ME	112.1	59.3	34
AgriMAXX 415	M	111.7	60.0	36
USG 3438	ME	111.1	56.7	33
Progeny PGX 14-3	ME	110.9	58.1	39
AgriMAXX Exp 1450	M	110.6	59.2	37
Pembroke 2014	E	110.4	59.4	34
Progeny 357	ME	109.8	55.6	35
Armor Havoc	ME	109.7	58.6	35
Beck 125	M	109.3	59.0	36
AgriPro SY 474	M	108.9	57.4	39
Guardian	ML	108.8	58.4	37
Pembroke 2008	E	108.8	58.2	36
AgriMAXX 447	ML	108.5	56.3	38
AgriPro SY 547	ME	108.4	58.2	37
Dyna-Gro 9591	ME	108.3	58.7	36
Bulter	M	108.3	56.2	38
Dyna-Gro WX15742	M	108.2	56.6	36
KY03C-1237-05	ML	107.6	58.7	37
Pioneer variety 25R32	ML	107.6	59.2	36
AgriPro SY 007	ME	105.4	58.2	35
Seinna	ME	103.5	56.6	41
Progeny 125	E	100.8	57.3	37
Beck 113	ME	100.6	57.1	36
AgriPro Branson	ME	100.5	57.3	34
Progeny 410	M	99.4	58.0	41
Progeny 117	E	98.4	57.4	37
Grand Mean		111.1	57.8	36