

## *Wheat Tech Agronomy*

# 2015-2016 Wheat Variety Performance Test Results

### **General Information:**

The 2015-2016 winter wheat variety performance tests were conducted at three different sites: Russellville, Kentucky; Trenton, Tennessee; and Bertrand, Missouri. The KY location contained 75, the TN location contained 59, and the MO location contained 50 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/yd<sup>2</sup>, while no-tilled rates were 375 s/yd<sup>2</sup>. 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 45/75 pounds per acre, the rate at TN was 45/67 pounds per acre, and MO was 50/100 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 went very well, and began in a timely fashion. The Missouri plot was planted on October 12<sup>th</sup>, Tennessee on the 14<sup>th</sup>, and Kentucky on the 20<sup>th</sup>. During this time there was adequate moisture in the soil and steady rainfall events throughout October which made planting conditions ideal. This combination achieved excellent stands. Continuing warm fall temperatures created an exceptional environment for wheat to thrive. With no cold weather events in November, like in recent years, there was thick, fall growth at all plot locations. This trend continued throughout December as well. According to our WatchDog Weather Station, which was located at the Russellville, KY location, the average November temperature was 62°F, and the average December temperature was 58°F. Compared to the fall growing conditions of 2014 where the November average was 50°F and December's was 47°F. January's arrival brought some colder temperatures and Winter Storm Jonas (Jan. 22<sup>nd</sup> - 24<sup>th</sup>). The worst of the storm affected the east coast and the Ohio valley region, however; our Kentucky location did not escape the storm. It received an estimated 10-12 inches of snowfall on the 22<sup>nd</sup>, and a low temperature recording of 1°F on the 24<sup>th</sup>. Although temperatures reached extremely low digits, the wheat was kept insulated by all the recent snow. After Jonas, the weather began to normalize with wheat coming out of winter dormancy in late February.

This spring all locations and grower fields experienced higher levels of BYDV. Despite the warmer fall temperatures and excessive fall growth, aphid levels during the fall and spring were not extreme. Symptoms and timing of the virus indicated a spring infection. In all plot locations, the amount of spring infections did not affect yield much, if any at all. Spring also brought diseases to the wheat plots. Stripe Rust began to affect the TN location in early to mid-April. For this reason the plots were sprayed with a fungicide at Feekes 10 in order to help control the problem. Stripe Rust did affect the other locations, however; it wasn't until a little later in April and May. Leaf Rust was a much bigger concern later in May at MO and KY. Fusarium Head Blight was not a problem this year at any of the locations. A preventive spray is done every year for this disease, and pressure levels at MO and KY were expected to be much higher. When spraying the TN location, weather conditions and risk levels were low, however; weather conditions during flowering at the MO and KY locations was extremely favorable for disease development. Rainfall was recorded at KY every day from April 26<sup>th</sup> – May 2<sup>nd</sup>. Although conditions may have favored disease development, the amount remained very low.

## **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.

## **Acknowledgements**

We would like to acknowledge the following participating companies, Wheat Tech R&D, Wheat Tech owners, and supporting chemical companies. Also, special thanks are extended to all other Wheat Tech employees for any involvement with the research and development division.

### **Wheat Tech Research & Development Division:**

Brad Wilks – Research Director

Matt Miller – Senior 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, LLC

Beck's Hybrids

Croplan by Winfield

DuPont Pioneer

Dyna-Gro Seed

Equity Seed

Kentucky American Seeds, LLC

KY Small Grain Growers Association

L&M Glick Seed

Merschman Seeds, Inc.

Progeny Ag Products

Southern States

Steyer Seeds

Syngenta Seeds

UniSouth Genetics, Inc.

Warren Seed and Agronomy Service

### **Supporting Chemical Companies:**

Bayer CropScience

Syngenta Crop Protection, LLC.

DuPont Crop Protection

# Wheat Tech Agronomy

## Table 1

### 2015-2016 Missouri Winter Wheat Variety Performance Results

*Bertrand, MO*

Variety	Maturity	Yield (bu/ac)	TW (lb/bu)	Lodging %	Height (inches)
AgriPro SY Viper	ME	128.6 a*	59.3	0	37
Pioneer variety 26R10	L	127.7 ab	58.3	0	35
Progeny 243	ME	126.5 abc	60.1	0	39
AgriMAXX 446	M	125.6 a-d	59.8	0	34
Pioneer variety 26R59	M	125.4 a-d	58.3	0	31
Pioneer variety 26R41	M	124.1 a-e	59.5	0	33
USG 3895	M	124.0 a-f	58.4	0	32
AgriMAXX 438	ML	122.7 a-g	57.5	0	38
Dyna-Gro 9692	M	122.6 a-h	58.0	0	36
Progeny PGX 15-10	M	122.6 a-h	58.4	0	37
Pioneer variety XW13W	ML	121.9 a-h	60.1	0	35
Dyna-Gro 9171	ME	121.5 a-i	58.6	0	32
AgriMAXX 463	E	121.3 a-i	58.0	0	34
Armor Rumble	M	121.3 a-i	58.6	0	38
Progeny 357	ME	121.3 a-i	56.5	0	37
Beck 123	ME	121.2 a-j	60.4	0	39
USG 3536	ME	120.9 a-j	58.5	0	37
KAS S1200	M	120.3 a-k	57.9	0	33
PEMBROKE 2016	E	119.8 a-k	60.5	0	34
Dyna-Gro 9522	M	119.6 a-k	58.6	0	35
Dyna-Gro WX16771	ME	119.4 a-l	59.0	0	33
PEMBROKE 2008	E	119.1 a-l	61.2	0	35
Progeny PGX 15-16	M	118.9 b-l	61.2	0	34
Pioneer variety 25R32	ML	118.8 b-l	59.0	0	36
AgriMAXX 444	M	118.5 b-l	58.8	0	35
Progeny PGX 15-14	ME	118.2 b-l	57.3	0	32
Armor Inferno	M	117.8 c-l	59.6	0	33
Dyna-Gro 9591	ME	117.1 c-m	59.9	0	34
Equity Brand Defender	ME	116.8 d-m	57.1	0	37
Beck 128	ML	116.3 d-m	57.7	0	37
KAS S2500	M	116.2 d-m	58.1	0	35
AgriMAXX 454	ME	116.2 d-m	58.2	0	35
USG 3404	ML	115.5 e-n	58.1	0	36
Pioneer variety 26R53	ME	114.5 f-n	60.9	0	33
PEMBROKE 2014	E	114.4 f-n	61.4	0	34
Equity Brand Butler	M	113.5 g-o	57.7	0	37
Progeny 870	ME	113.3 g-o	58.2	0	31
AgriMAXX Exp. 1558	ME	113.0 h-p	58.4	3	35
Progeny PGX 15-12	M	112.3 i-q	58.7	0	33
KAS Lowery	M	111.6 j-q	57.4	0	37

*Wheat Tech Agronomy*

**Table 1 - Continued**

**2015-2016 Missouri Winter Wheat Variety Performance Results**

*Bertrand, MO*

Variety	Maturity	Yield (bu/ac)		TW (lb/bu)	Lodging %	Height (inches)
Dyna-Gro 9772	M	111.2	k-q	58.7	0	34
AgriMAXX 452	E	111.2	k-q	58.8	0	37
AgriMAXX 415	M	110.0	l-q	60.1	0	34
Progeny PGX 15-18	M	107.9	m-q	58.1	0	32
Exp DEI 16053	E	106.6	n-q	60.3	15	34
Beck 114	E	106.3	n-q	59.1	0	36
AgriMAXX 490	E	104.4	opq	60.0	8	35
AgriPro SY 474	M/ME	103.5	pq	57.6	0	37
KAS Liberty IV	ME	103.0	q	56.2	0	35
AgriMAXX Exp. 1670	E	92.4	r	61.0	43	34
LSD (P=.05)		9.6		.	.	.
CV		5.9		.	.	.
<b>Grand Mean</b>		<b>116.7</b>		<b>58.9</b>	<b>1</b>	<b>35</b>

Planted: October 12, 2015; Harvested: June 12, 2016

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

## Wheat Tech Agronomy

### Table 2

#### 2015-2016 Tennessee Winter Wheat Variety Performance Results Trenton, TN

Variety	Maturity	Yield (bu/ac)	TW (lb/bu)	Height (inches)
USG 3895	M	138.5 a*	59.6	34
AgriMAXX 438	ML	137.1 ab	60.2	40
Pioneer variety 26R59	M	135.6 abc	60.6	30
CROPLAN 9415	M	134.2 a-d	60.8	36
AgriMAXX 444	M	133.4 a-e	60.0	36
KAS S1200	M	133.3 a-e	58.6	33
Warren Seed - McKenna 325	M	132.1 a-f	58.6	38
CROPLAN 9101	M	131.9 a-g	59.7	35
Pioneer variety 26R41	M	131.8 a-g	61.3	34
Warren Seed - McKay 120	M	130.3 a-h	59.6	36
Dyna-Gro 9692	M	129.6 a-h	60.1	35
AgriMAXX 446	M	129.5 a-h	60.4	36
Pioneer variety 26R10	L	128.2 a-h	60.3	35
Pioneer variety XW13W	ML	126.9 a-i	60.2	37
AgriMAXX 463	E	126.6 a-i	57.8	36
Progeny PGX 15-10	M	126.2 a-i	60.2	38
Dyna-Gro 9772	M	126.1 a-i	56.6	37
CROPLAN 9203	M	126.0 a-i	60.6	37
USG 3536	ME	125.7 a-j	59.9	37
Armor Inferno	M	125.6 a-j	60.2	36
AgriPro SY Harrison	M	125.1 a-j	58.9	36
Equity Brand Butler	M	124.7 a-j	60.9	41
Progeny PGX 15-14	ME	124.1 a-j	58.4	30
CROPLAN 9410	ME	124.1 a-j	59.9	35
KAS S2500	M	123.9 a-j	60.2	34
AgriPro SY Viper	ME	123.7 a-j	60.6	37
AgriMAXX 454	ME	123.6 a-j	59.6	35
Pioneer variety 25R32	ML	123.1 a-j	61.4	35
Armor Rumble	M	122.8 b-k	59.8	37
Warren Seed - McKenna 315	ME	122.6 b-k	57.6	32
Dyna-Gro WX16771	ME	122.3 b-l	60.1	33
Dyna-Gro 9522	M	122.1 b-l	59.1	35
AgriMAXX 415	M	121.9 b-m	61.1	34
Dyna-Gro 9171	ME	121.7 b-m	57.9	32
KAS Lowery	M	121.1 c-n	61.1	39
USG 3404	ML	121.0 c-n	59.5	35
Progeny 357	ME	120.7 c-n	58.5	35
Progeny 870	ME	120.2 c-n	58.5	31
Beck 128	ML	120.0 c-o	59.9	34
Beck 123	ME	119.8 d-o	59.5	40

## Wheat Tech Agronomy

### Table 2 - Continued

#### 2015-2016 Tennessee Winter Wheat Variety Performance Results

Trenton, TN

Variety	Maturity	Yield (bu/ac)		TW (lb/bu)	Height (inches)
Progeny PGX 15-18	M	119.1	d-p	59.2	33
Equity Brand Defender	ME	117.7	e-p	60.3	39
KAS Liberty IV	ME	117.1	f-p	58.7	36
Pioneer variety 26R53	ME	116.4	g-p	60.4	33
Progeny 243	ME	115.6	h-q	59.5	38
AgriMAXX Exp. 1558	ME	115.5	h-q	56.3	36
Exp DEI 16053	E	115.3	h-q	59.7	37
PEMBROKE 2014	E	111.6	i-r	59.7	35
PEMBROKE 2016	E	110.3	j-s	59.6	36
AgriMAXX 490	E	107.2	k-s	59.6	37
Dyna-Gro 9591	ME	106.7	l-s	59.0	34
Progeny PGX 15-16	M	106.3	m-s	61.0	34
Progeny PGX 15-12	M	105.7	n-s	57.7	32
AgriMAXX Exp. 1670	E	104.4	o-s	60.7	35
Ag Alumni AG 2650	ME	103.5	p-s	61.5	41
Warren Seed - McKay 130	ME	100.0	qrs	59.6	37
AgriMAXX 452	E	99.3	rs	59.3	37
PEMBROKE 2008	E	97.5	rs	58.7	32
Beck 114	E	94.7	s	59.9	37
LSD (P=.05)		15.7		.	.
CV		9.3		.	.
<b>Grand Mean</b>		<b>120.7</b>		<b>59.6</b>	<b>36</b>

Planted: October 14, 2015; Harvested: June 10, 2016

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

**Wheat Tech Agronomy**

**Table 3**

**2015-2016 Kentucky No-Till Winter Wheat Variety Performance Results**

*Russellville, KY*

Variety	Maturity	Fungicide Treated					Fungicide Response (bu/ac)	Heading Date (April)
		Yield (bu/ac)	TW (lb/bu)	Lodging %	Height (inches)			
Warren Seed - McKenna 325	M	142.4	a*	54.7	15	37	16.5	25
Pioneer variety XW13W	ML	141.5	ab	57.3	3	37	14.5	27
Dyna-Gro 9600	ME	140.5	abc	55.2	0	38	10.5	24
Dyna-Gro 9522	M	139.3	a-d	56.0	0	36	14.9	27
Dyna-Gro 9171	ME	138.3	a-e	54.5	0	34	12.6	24
Warren Seed - McKay 120	M	137.9	a-e	55.7	3	35	14.6	27
STEYER STex142	M	137.5	a-f	55.6	3	37	10.5	24
AgriMAXX 454	ME	137.0	a-g	55.7	0	37	20.3	27
AgriMAXX 444	M	136.5	a-h	55.4	0	37	12.4	27
L&M 1017	ME	136.3	a-h	55.7	4	38	10.6	24
Pioneer variety 26R59	M	135.8	a-i	56.4	0	33	8.5	26
Beck 128	ML	135.0	a-j	55.9	0	37	20.9	26
Dyna-Gro 9772	M	134.9	a-j	55.8	0	38	9.5	24
Dyna-Gro 9692	M	134.9	a-j	55.9	3	37	20.4	27
AgriMAXX 463	E	134.8	a-j	55.1	0	38	5.5	25
USG 3404	ML	134.8	a-j	55.3	0	36	13.2	27
AgriMAXX Exp. 1558	ME	134.8	a-j	55.4	0	38	10.5	24
CROPLAN 9415	M	134.5	a-j	56.1	0	36	14.6	26
AgriMAXX 438	ML	134.4	a-j	56.3	0	40	16.2	27
KAS S2500	M	134.4	a-j	56.0	0	37	19.6	27
Dyna-Gro 9591	ME	134.1	a-k	57.3	5	38	13.7	24
Warren Seed - McKenna 315	ME	134.1	b-k	54.3	0	35	9.6	24
Pioneer variety 26R53	ME	133.8	b-l	57.6	0	36	7.8	26
STEYER STex155	ME	133.7	b-l	56.5	0	34	17.2	25
Beck 120	E	133.7	b-l	54.8	0	34	13.9	25
SS 8360	ML	133.5	b-l	56.5	0	34	20.1	27
KAS Liberty IV	ME	133.5	b-l	54.5	0	38	18.0	25
Dyna-Gro WX16771	ME	133.4	b-l	56.7	3	34	15.8	25
SS 8530	ME	133.2	b-l	54.7	0	37	9.8	24
CROPLAN 9101	M	133.1	c-l	55.4	0	38	13.2	25
Progeny 243	ME	132.4	c-m	56.1	0	42	5.0	24
Dyna-Gro 9552	M	132.2	c-m	56.3	0	34	15.3	26
AgriMAXX 415	M	131.9	d-m	58.4	0	36	10.5	25
STEYER Evans	ML	131.8	d-n	55.8	0	36	9.9	27
Progeny PGX 15-14	ME	131.7	d-n	54.5	0	35	8.2	25
Pioneer variety 26R41	M	131.5	d-n	56.2	0	35	12.6	26
SS 8340	M	131.4	d-o	58.4	0	35	8.2	26
Progeny PGX 15-10	M	131.3	d-o	55.0	35	40	13.0	26
STEYER Haubert	ML	131.3	d-o	55.6	0	36	18.7	27
AgriMAXX 446	M	131.1	d-o	56.0	0	34	12.1	26
Pioneer variety 26R10	L	131.1	d-o	55.4	0	35	13.0	26
KAS S1200	M	131.1	d-o	54.8	0	35	8.2	25

**Wheat Tech Agronomy**  
**Table 3 - Continued**  
**2015-2016 Kentucky No-Till Winter Wheat Variety Performance Results**  
*Russellville, KY*

Variety	Maturity	Fungicide Treated					Fungicide Response (bu/ac)	Heading Date (April)
		Yield (bu/ac)	TW (lb/bu)	Lodging %	Height (inches)			
USG 3895	M	130.7	e-o	55.2	0	35	7.9	25
STEYER Kidwell	ME	130.4	e-p	54.6	0	34	13.7	24
KAS Lowery	M	130.2	e-p	57.5	5	41	9.7	26
Progeny 357	ME	129.5	f-q	54.1	0	37	14.8	26
AgriPro SY Viper	ME	129.0	g-r	57.1	0	40	2.4	24
Warren Seed - McKay 130	ME	129.0	g-r	56.3	3	39	9.7	25
Beck 123	ME	128.4	h-s	56.4	0	41	5.5	23
Progeny PGX 15-16	M	128.2	h-s	58.2	0	35	9.9	25
Armor Inferno	M	127.9	i-s	55.7	0	34	9.2	26
Beck 125	M	127.6	i-s	55.6	0	38	13.9	26
Armor Rumble	M	127.2	j-s	55.4	6	37	10.6	26
AgriMAXX 490	E	127.1	j-s	58.1	15	40	14.8	22
Progeny 870	ME	125.9	k-t	53.7	0	34	7.6	25
AgriMAXX 452	E	125.5	l-u	56.3	36	39	6.4	25
Progeny PGX 15-18	M	124.6	m-u	56.5	0	34	8.6	25
PEMBROKE 2016	E	124.3	m-u	56.6	15	37	6.4	24
CROPLAN 9203	M	124.2	m-u	57.4	5	38	10.9	26
AgriMAXX Exp. 1670	E	124.2	m-u	58.6	84	38	15.2	24
STEYER Morrin	M	123.6	n-u	56.6	0	41	12.8	26
STEYER STex156	E	123.6	n-u	55.2	0	36	3.1	25
PEMBROKE 2014	E	123.1	o-u	57.9	0	40	10.1	22
Equity Brand Defender	ME	122.4	p-v	55.2	5	40	10.2	27
SS 8513	E	121.9	q-v	57.3	26	39	9.7	22
Pioneer variety 25R32	ML	121.9	q-v	57.2	10	36	9.3	28
Beck 114	E	121.8	q-v	56.0	51	40	8.0	25
Equity Brand Butler	M	120.8	r-w	55.9	0	41	8.0	27
AgriPro SY 007	ME	120.2	s-w	56.3	16	36	15.0	22
Progeny PGX 15-12	M	118.3	t-x	56.0	0	37	12.1	22
Ag Alumni AG 2650	ME	117.5	u-x	57.2	0	42	9.4	25
CROPLAN 9410	ME	114.6	vwX	56.9	48	34	7.2	22
PEMBROKE 2008	E	113.2	wX	56.8	0	38	1.9	22
STEYER Ackley	E	110.9	x	58.3	5	37	8.1	23
Exp DEI 16053	E	110.5	x	56.6	18	40	7.8	22
LSD (P=.05)		8.3	.	.	.	.	.	.
CV		4.6	.	.	.	.	.	.
<b>Grand Mean</b>		<b>129.7</b>		<b>56.1</b>	<b>6</b>	<b>37</b>	<b>11.5</b>	<b>25</b>

Planted: October 20, 2015; Harvested: June 20, 2016

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



**Wheat Tech Agronomy**  
**Table 4**  
**2015-2016 Winter Wheat Variety Performance Results**  
*Three Location Average*

Variety	Maturity	Yield (bu/ac)	TW (lb/bu)	Height (inches)
Pioneer variety 26R59	M	132.3	58.4	31
AgriMAXX 438	ML	131.4	58.0	40
USG 3895	M	131.1	57.7	34
Pioneer variety XW13W	ML	130.1	59.2	36
AgriMAXX 444	M	129.4	58.0	36
Pioneer variety 26R41	M	129.1	59.0	34
Dyna-Gro 9692	M	129.0	58.0	36
Pioneer variety 26R10	L	129.0	58.0	35
AgriMAXX 446	M	128.7	58.7	35
KAS S1200	M	128.2	57.1	33
AgriMAXX 463	E	127.6	57.0	36
Dyna-Gro 9171	ME	127.2	57.0	33
AgriPro SY Viper	ME	127.1	59.0	38
Dyna-Gro 9522	M	127.0	57.9	35
Progeny PGX 15-10	M	126.7	57.9	38
AgriMAXX 454	ME	125.6	57.9	36
KAS S2500	M	124.8	58.1	35
Progeny 243	ME	124.8	58.6	39
Progeny PGX 15-14	ME	124.7	56.8	32
Dyna-Gro 9772	M	124.1	57.0	36
Progeny 357	ME	123.8	56.3	36
Armor Inferno	M	123.8	58.5	34
USG 3404	ML	123.8	57.6	36
Armor Rumble	M	123.8	57.9	37
Beck 128	ML	123.7	57.9	36
Beck 123	ME	123.1	58.8	40
Pioneer variety 26R53	ME	121.6	59.6	34
AgriMAXX 415	M	121.3	59.8	35
Pioneer variety 25R32	ML	121.3	59.2	36
AgriMAXX Exp. 1558	ME	121.1	56.7	36
KAS Lowery	M	121.0	58.7	39
Progeny 870	ME	119.8	56.8	32
Equity Brand Butler	M	119.7	58.2	40
Dyna-Gro 9591	ME	119.3	58.7	35
Equity Brand Defender	ME	119.0	57.5	39
PEMBROKE 2016	E	118.1	58.9	36
KAS Liberty IV	ME	117.9	56.5	36
Progeny PGX 15-16	M	117.8	60.1	34
Progeny PGX 15-18	M	117.2	57.9	33
PEMBROKE 2014	E	116.4	59.7	36
AgriMAXX 490	E	112.9	59.2	37
Progeny PGX 15-12	M	112.1	57.5	34
AgriMAXX 452	E	112.0	58.1	38
Exp DEI 16053	E	110.8	58.8	37
PEMBROKE 2008	E	109.9	58.9	35
Beck 114	E	107.6	58.3	38
AgriMAXX Exp. 1670	E	107.0	60.1	35
<b>Grand Mean</b>		<b>122.2</b>	<b>58.2</b>	<b>36</b>