

2024 Kentucky Small Grain VARIETY PERFORMANCE TRIAL

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varietytesting.ca.uky.edu/wheat

The 2024 soft red winter wheat growing season ended with Kentucky farmers harvesting approximately 410,000 acres of the 560,000 acres planted, for a total production of 31.6 million bushels of grain. An average yield of 77 bushels per acre was estimated by NASS (Table 1). The acreage not harvested for grain was primarily used for forage production and cover cropping.

The objective of the Kentucky small grain variety performance trial is to evaluate varieties of wheat, oat, barley, triticale, and cereal rye that are commercially available or may soon be available to Kentucky farmers. New varieties continually are being developed by agricultural experiment stations and commercial firms. Annual evaluation of small grain varieties and selections provides farmers, seed producers, and other agricultural workers with current information to help them select the varieties best adapted to their locality and individual requirements.

Eight wheat performance trials were conducted in six of the seven agroclimatic regions of Kentucky (Table 2). Agricultural areas within each region are considered to have similar soil types and climatic conditions. Barley, oat, triticale, and cereal rye varietal performance was evaluated at one location. In addition, wheat trials for varietal differences in forage yield and straw yield were conducted at one location.

Experimental Methods

A total of 76 wheat entries were evaluated under either conventional or no-till cultural practices. No-till trials were grown at two locations, and conventional trials were grown at four locations. The experimental design was a randomized complete block. The trials had four replications per entry, and the data presented are the average response from the four replications.

The plots were planted with specially built multi-row conventional and no-till cone seeders. Conventional trial plots consisted of six rows to form a plot 4 feet wide and 15 feet long, which was later trimmed to 12 feet in length. No-till plots consisted of seven rows to form a plot 5 feet wide and 25 feet long, which was later trimmed to 22 feet in length. Plots were harvested with a small-plot combine. The preceding crop for all trials was corn.

Trials were conducted using intensive management practices. Typical herbicide applications included a spring application for broadleaf control and a fall pre-planting burn-down (no-till trials only) application. Fungicides were applied in the spring on all but two (disease rating) trials. An insecticide for aphid control was

typically applied in the spring. Nitrogen was applied in a February/March split application at a rate of approximately 30/60 pounds per acre (conventional trials) or 40/70 pounds per acre (no-till).

The forage trial was planted using conventional tillage and was harvested using a small plot forage combine at the soft dough stage in the Bluegrass region. Straw yield was measured using a small plot forage combine following grain harvest in the Bluegrass region trial.

Table 1. Wheat Acreage Harvested and Yields (bu/ac) in Kentucky, 2022-24.*

2024		2023		2022	
Harvested	Yield	Harvested	Yield	Harvested	Yield
410,000	77	460,000	88	365,000	80

*July 12, 2024, National Agricultural Statistics Service.

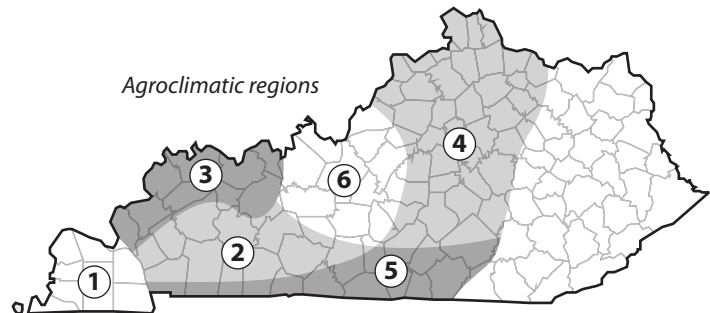


Table 2. Agroclimatic Regions of Kentucky Small Grain Variety Trials.

Region	Location	Cooperator	Crop Tested
1	Purchase	Calloway Co. Murray State University Jason Robertson	No-till Wheat
2	Western Coal Field	Caldwell Co. Princeton Research and Education Ctr. Scott Peek	Wheat*, Barley
3	Ohio Valley	Webster Co. Bruce & Jeremy Benson	No-till wheat
4	Bluegrass	Fayette Co. Kentucky Ag. Exp. Station; Matt Peake	Wheat*, small grains
5	Southern Tier	Logan Co. Walnut Grove Farm Sam Halcomb	Wheat*
6	North Central	Woodford Co. UK Woodford Farm Shannon Rudd	Wheat*

* Conventional tillage.

Characteristics Evaluated

Grain yields were calculated from the weight of grain from each plot and reported in bushels per acre (bu/ac) based on 60-pound, 56-pound, 48-pound, and 32-pound standard bushel weights for wheat, cereal rye, barley, and oats, respectively, at 13.5 percent moisture content. Test weights (lb/bu) were determined using a HarvestMaster Classic GrainGage and adjusted to 13.5 percent moisture. Lodging was reported as the percentage of plant lodging at maturity; winter survival was reported as the percentage of survival after spring green-up. Winter survival was 100 percent for all trials. Plant height was measured in inches from the soil surface to the top of the grain head. Heading dates were reported as the day an estimated 50 percent of the heads had extended above the flag leaf collar. Disease ratings: Leaf rust, leaf blotch, glume blotch, powdery mildew and head scab were rated at the Woodford Co, KY trial.

Metribuzin tolerance was evaluated in field and greenhouse trials. The field screening was conducted in Caldwell County and 20 ounces of Metribuzin per acre was applied at approximately Feekes 4. The greenhouse screening test applied 6 ounces per acre at the 3-leaf stage. Results presented in Table 6 are the average ratings from the field and greenhouse tests. Forage and straw yields are expressed as dry matter in tons per acre. Winter cover crop ground cover/biomass values were measured using the Canopeo app at the Lexington wheat trial on 2-15-2024.

Results and Interpretation

Since genetic expression of a variety is greatly influenced by environmental conditions, it is best to have several years' data at multiple locations from which to draw conclusions. Performance of a variety tested for only one year should not be compared with a multi-year average of another variety because it is possible that results in one of the other years were extremely good or poor and thus not comparable.

The yield of a variety is relative and should be compared with the yields of the other varieties in the same trial and at the same location or within the same analysis across locations. Small differences in yield of only a few bushels per acre between two varieties from an individual trial should not be interpreted to indicate the superiority of one variety over another. However, if one variety consistently out yields another over a period of several years or across locations, the chances are that the differences are real. LSD (least significant difference) values are listed at the bottom of table columns to indicate whether differences are statistically significant.

Lodging data are difficult to interpret. A high-yielding variety should not necessarily be downgraded because of a high percentage of lodging for a given year at a given location. Local weather conditions, such as wind and rain, may cause a variety to

lodge much more than it normally does. Variety trials normally have a greater degree of lodging than do farmer fields. It also should be emphasized that a variety reported to be 50 percent lodged does not imply that only 50 percent of the grain could be harvested. With good equipment, most of the grain can often be saved.

Kentucky's climate and soils are well-suited for the production of high-quality soft red winter wheat. No single variety has all the desirable characteristics, but each has certain advantages. Grain yield potential, straw strength and yield, height, heading date, grain quality, cover cropping potential, disease resistance, and forage potential are all important in choosing a variety.

Winter barley is less winter-hardy than winter wheat but more hardy than winter oats. The degree of winter-hardiness, straw strength, and maturity are important characteristics when choosing a variety. Barley (hulless, malting, and traditional hulled) variety performance data is presented in table 7. Triticale, cereal rye, and oat variety performance data are presented in tables 8, 9, and 10 respectively.

Trial Conditions

Normal temperature and precipitation in October favored timely planting of the wheat variety trials. The 2024 Kentucky small grain variety tests were planted from October 12 to October 26, 2023. Warmer and drier conditions in November & December were followed by normal temperatures and above normal precipitation levels in January. February through May had above average temperatures with below normal precipitation in February and March and above average precipitation in April and May. The warmer spring accelerated plant development and maturity by approximately one week. Early June was cooler and wet which delayed harvest in some areas and caused some reductions in test weight. Mid-June was warm and dry and favored timely harvest of many wheat acres.

Acknowledgments

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Varieties Tested in 2024

AgriMAXX Wheat Co.

AgriMAXX 503
AgriMAXX 505
AgriMAXX 513
AgriMAXX 516
AgriMAXX 525
AgriMAXX 535
AgriMAXX 545
AgriMAXX EXP 2312
AgriMAXX EXP 2314
AgriMAXX EXP 2405

Winfield United

CROPLAN CP8045
CROPLAN CP8081
CROPLAN CP8224

Dyna-Gro/ Nutrien Ag Solutions

Dyna-Gro 9120
Dyna-Gro 9151
Dyna-Gro 9172
Dyna-Gro 9231
Dyna-Gro 9290
Dyna-Gro 9393
Dyna-Gro 9422
Dyna-Gro 9533
Dyna-Gro 9542
Dyna-Gro 9551
Dyna-Gro 9553
Dyna-Gro 9570

Growmark, Inc.

GROWMARK FS 597
GROWMARK FS 600
GROWMARK FS 606
GROWMARK FS 617
GROWMARK FS 624
GROWMARK FS 743
GROWMARK FS 745
GROWMARK FS 745
GROWMARK FS WX24A
GROWMARK FS WX24B
GROWMARK FS WX24C

Kentucky Foundation Seed Project

X11-0039-1-17-5
X14-1009-84-4-3
X14-1031-103-4-1
X14-1035-67-7-1
X14-1049-27-10-1
X14-1107-95-18-5
X14-1128-23-12-5
X15-1004-24-4-5-1
X15-1019-48-8-3
X16-1021-131-19-1-1
X16-1021-13-13-3-5
X16-3013-1-12-5

Kentucky Small Grain Growers Association

PEMBROKE 2014
PEMBROKE 2016
PEMBROKE 2021

KWS Cereals

KWS397
KWS490
KWS500
KWS501
KWS525
KWS527
KWS529
KWS542
KWS543

Revere Seed

Revere Reagan
Revere Valor
Revere Washington
RWX401
RWX402

Stratton Seed

Go Wheat 4059S
Go Wheat 6056
Go Wheat Exp 1

University of Missouri

Truman

UniSouth Genetics

USG 3329
USG 3352
USG 3354
USG 3463
USG 3472
USG 3574
USG 3884

Virginia Crop Improvement Association

VT Pitman

Table 3. 2024 Kentucky Wheat Variety Trial - State Summary.*

Variety	State Average*		Test Weight* (lb/bu)	Woodford	Calloway	Fayette	Webster	Logan	Caldwell	Low Input**	Height* (In)	Heading Date* > April 1
	2024	2023-24								Caldwell		
	Yield (bu/a)									Yield (bu/a)		
AgriMAXX 545	79.9		56.1	81.5	86.3	71.9	105.3	91.3	63.2	51.0	36	26
Dyna-Gro 9542	79.8		57.2	78.0	92.1	69.4	84.8	80.6	61.7	53.0	34	27
USG 3354	79.7		57.5	80.0	84.8	74.3	57.3	79.6	57.5	57.1	37	24
Dyna-Gro 9422	79.4	97.4	56.5	80.0	89.3	68.9	86.2	76.8	63.7	51.0	35	25
KWS527	79.4		58.2	81.3	86.9	69.9	88.5	80.6	56.5	48.7	36	27
Go Wheat Exp 1	79.2		57.2	77.1	88.5	71.9	65.6	86.7	55.7	48.0	36	23
KWS490	78.8	95.9	58.0	78.3	86.1	71.9	80.7	81.2	45.8	49.7	35	27
RWX402	78.7		55.8	74.5	89.2	72.4	92.3	87.4	53.6	54.5	36	25
Revere Washington	78.6	97.6	56.7	77.5	88.7	69.6	86.7	77.5	57.8	49.5	35	25
Revere Reagan	77.9	96.5	55.2	83.9	84.7	65.1	83.6	75.0	57.6	45.1	35	25
Dyna-Gro 9231	77.6	94.8	57.9	82.5	85.1	65.3	86.4	85.7	59.9	53.9	37	25
AgriMAXX 525	77.5	95.1	58.1	78.2	85.7	68.6	90.4	78.0	64.2	59.6	35	28
GROWMARK FS 743	77.5	96.0	58.3	81.0	85.5	65.9	85.1	87.7	63.7	50.4	37	24
USG 3884	76.9		57.4	75.9	84.1	70.7	84.0	73.6	58.5	46.2	34	25
GROWMARK FS 597	76.8	90.5	57.9	78.7	80.4	71.3	80.4	82.9	59.2	47.9	36	24
GROWMARK FS WX24C	76.7		58.3	74.6	84.7	70.8	90.4	74.7	59.2	48.9	35	26
USG 3463	76.7	93.9	57.0	79.8	80.2	70.0	83.7	78.5	57.2	45.4	35	25
AgriMAXX EXP 2405	76.5		57.2	76.4	85.6	67.5	72.7	81.4	66.3	51.6	35	27
GROWMARK FS 745	76.5	94.8	57.4	74.7	87.4	67.3	89.7	87.3	58.8	45.5	35	25
AgriMAXX 513	76.4	93.0	58.5	84.7	75.4	69.1	93.1	84.9	49.0	42.4	36	25
X14-1009-84-4-3	75.8	94.3	56.2	80.5	80.8	66.1	85.6	91.7	55.4	53.6	37	26
Dyna-Gro 9570	75.8		56.2	69.1	87.8	70.3	90.8	80.9	56.3	51.7	35	25
Dyna-Gro 9172	75.7	93.6	57.5	75.7	85.8	65.7	84.9	79.7	60.0	46.4	35	25
CROPLAN CP8081	75.7	90.4	57.8	75.7	83.5	68.0	76.0	74.2	59.6	47.8	35	24
KWS397	75.7	93.8	57.0	76.5	76.5	74.0	36.0	72.7	55.0	48.4	36	24
AgriMAXX 516	75.3	95.0	57.6	72.4	86.5	67.0	98.0	80.8	63.2	45.2	36	25
KWS542	75.3		59.6	79.3	77.5	69.0	95.6	82.3	57.1	47.0	37	25
X14-1035-67-7-1	74.9		57.7	76.6	81.7	66.2	74.9	78.6	67.3	56.9	36	26
AgriMAXX EXP 2314	74.6		56.6	75.9	78.7	69.3	94.2	90.5	63.5	49.4	36	26
GROWMARK FS WX24B	74.5		57.5	77.5	76.6	69.5	64.9	81.9	44.3	46.4	35	26
Dyna-Gro 9553	74.4		56.9	71.7	88.0	63.5	96.0	82.5	47.2	54.7	34	28
AgriMAXX 505	74.4	92.7	58.3	75.7	81.6	65.9	85.2	82.7	59.5	49.8	36	26
X16-1021-131-19-1-1	74.3		59.0	83.3	69.7	70.0	50.0	77.9	50.7	41.8	36	25
KWS501	74.1		57.0	65.5	89.3	67.7	79.5	67.6	59.9	43.5	34	27
Revere Valor	74.1	94.3	56.1	73.7	83.8	64.9	90.1	72.7	56.9	44.9	34	26
Dyna-Gro 9151	74.0	92.2	58.5	75.9	80.2	65.9	87.1	82.3	63.3	49.1	36	26
USG 3472	73.8	90.5	59.0	70.0	81.2	70.1	96.3	86.1	59.5	42.6	35	26
GROWMARK FS 600	73.7	92.6	58.5	77.1	80.1	64.0	85.9	82.1	62.7	52.3	36	26
KWS529	73.7		55.3	72.0	77.4	71.7	55.7	71.1	55.4	50.1	34	25
Dyna-Gro 9533	73.4		56.6	77.5	82.9	59.8	34.2	83.2	43.6	37.8	33	26
AgriMAXX EXP 2312	73.2		57.7	70.1	84.2	65.4	82.0	89.4	62.6	47.4	35	25
X14-1128-23-12-5	73.1		58.3	79.7	76.1	63.6	91.9	70.7	49.0	47.7	34	25
X11-0039-1-17-5	72.7	91.4	57.2	77.1	78.9	62.2	44.8	76.7	50.6	43.9	35	25

continued

Table 3. (continued)

Variety	State Average*		Test Weight* (lb/bu)	Woodford	Calloway	Fayette	Webster	Logan	Caldwell	Low Input**	Height* (In)	Heading Date* > April 1
	2024	2023-24								Caldwell		
	Yield (bu/a)									Yield (bu/a)		
GROWMARK FS 606	72.7	89.4	60.4	66.1	74.9	77.2	45.9	72.2	54.5	49.5	36	25
PEMBROKE 2021	72.5	89.7	59.5	77.0	78.5	62.1	52.9	78.2	57.4	56.0	35	24
X14-1107-95-18-5	72.5		58.6	81.7	75.1	60.6	74.5	82.6	66.6	47.2	36	28
Go Wheat 6056	72.2	89.8	57.3	74.4	86.3	55.9	97.6	78.3	47.0	44.6	35	25
CROPLAN CP8045	72.1	90.3	57.3	70.5	84.0	61.7	89.7	85.0	57.1	44.7	35	25
Dyna-Gro 9551	72.0		54.7	64.4	85.5	66.2	85.6	76.4	61.1	45.0	33	24
USG 3329	72.0		56.8	73.6	79.6	62.7	80.9	84.3	53.6	47.2	36	25
GROWMARK FS WX24A	71.8		58.1	71.4	80.4	63.5	85.1	75.2	61.9	47.9	34	25
Dyna-Gro 9290	71.4	88.0	57.5	71.7	77.1	65.5	82.9	78.5	45.0	47.1	36	24
X15-1019-48-8-3	71.4		57.6	71.7	78.8	63.6	84.2	86.7	58.0	45.7	37	28
USG 3352	71.3	91.5	57.5	64.0	84.5	65.3	85.2	84.5	54.6	53.1	35	27
PEMBROKE 2016	70.9	84.9	58.5	73.6	78.3	60.9	75.8	73.1	53.0	48.7	33	24
Dyna-Gro 9393	70.9	88.9	57.3	73.6	77.8	61.3	89.8	83.3	54.3	47.3	34	26
Dyna-Gro 9120	70.8	88.9	59.6	71.7	80.5	60.3	92.4	81.2	54.7	43.5	34	24
RWX401	70.4		59.2	70.8	76.6	63.8	63.6	79.7	53.9	41.5	34	25
X14-1031-103-4-1	70.2	89.6	55.0	70.7	77.2	62.7	84.8	91.2	60.9	48.9	34	24
VT Pitman	70.0		58.6	64.0	81.9	64.1	77.6	72.5	46.0	42.4	33	24
AgriMAXX 503	69.9	89.0	58.5	66.7	76.9	66.1	17.2	77.1	56.7	53.8	36	26
USG 3574	69.8		56.1	78.6	73.7	57.0	52.6	65.1	47.3	35.0	34	26
GROWMARK FS 624	69.4	88.7	57.9	65.6	80.3	62.5	72.6	76.0	58.0	47.5	37	26
KWS500	69.3		57.3	68.7	77.2	62.0	86.9	70.4	51.5	44.6	34	26
X16-1021-13-13-3-5	68.7	91.4	56.0	76.5	71.9	57.6	49.7	82.8	45.2	42.0	37	27
X16-3013-1-12-5	68.5		59.3	71.4	69.9	64.3	62.5	82.7	40.0	45.9	34	27
PEMBROKE 2014	68.2	82.0	59.1	72.8	72.8	59.0	84.0	80.6	47.9	38.1	31	24
X14-1049-27-10-1	68.0	89.6	56.5	65.9	77.5	60.6	75.1	77.1	57.6	43.5	38	29
X15-1004-24-4-5-1	67.4		56.7	64.4	77.4	60.3	58.9	75.0	55.7	50.8	37	28
Go Wheat 4059S	67.4	85.3	58.5	68.0	74.7	59.5	69.7	82.7	49.0	43.7	34	26
AgriMAXX 535	67.0	87.1	57.8	67.7	77.9	55.6	84.7	71.8	62.9	46.1	35	26
CROPLAN CP8224	66.8	90.3	59.4	60.5	81.3	58.7	42.3	95.8	50.9	42.0	34	27
KWS543	66.5		57.0	60.5	74.9	64.1	80.6	73.7	50.7	41.7	34	27
GROWMARK FS 617	65.8	86.0	58.5	60.8	75.9	60.6	94.9	84.1	57.8	38.9	35	28
KWS525	64.8		56.9	65.0	74.1	55.2	87.9	75.9	57.1	46.3	34	26
Truman	54.3	74.5	58.9	50.2	56.5	56.3	20.4	83.6	47.7	36.4	41	32
Average	73.2	91.0	57.6	73.4	80.6	65.4	77.0	80.1	55.9	47.3	35	26
C.V. (%)	9.3	7.9	1.7	10.8	8.2	8.6	13.1	10.1	16.1	13.4		
LSD (0.10)	6.5	7.9	1.0	13.1	11.0	9.3	16.7	19.2	17.3	12.1		

* Summary of three 2024 county trials - (Calloway, Woodford, Fayette).

Webster Co. data highly variable - due to heavy deer damage to smooth headed varieties and substantial lodging (likely due to cold damage to stems). NOT RECOMMENDED for variety selection.

Logan Co. data highly variable - due to flooding and substantial lodging (likely due to cold damage to stems). NOT RECOMMENDED for variety selection.

Caldwell Co. data highly variable - due to severe Barley Yellow Dwarf Virus infection. NOT RECOMMENDED for variety selection.

** Low input trial (no fungicide; single 60lb N application at feekes 5).

Planting Date: Caldwell - 10/26/23; Calloway - 10/18/23; Logan - 10/19/23; Webster - 10/17/23; Fayette - 10/12/23; Woodford - 10/24/23.

Harvest Date: Caldwell - 6/11/24; Calloway - 6/7/24; Logan - 6/11/24; Webster - 6/12/24; Fayette - 6/13/24; Woodford - 6/13/24.

Table 4. 2024 Kentucky Wheat Variety Forage / Cover Crop Trial.

Variety	Soft Dough Stage Dry Matter (tons/a)		Cover Crop* Canopy (%)	Head Type
	2024	2023-24	2024	
X15-1019-48-8-3	4.51		53	Bearded
KWS490	4.37	4.74	50	Bearded
KWS525	4.34		46	Bearded
X16-3013-1-12-5	4.31		51	Bearded
AgriMAXX 535	4.24	4.55	54	Bearded
X15-1004-24-4-5-1	4.24		51	Smooth
X16-1021-13-13-3-5	4.24	4.55	54	Smooth
Dyna-Gro 9553	4.20		47	Bearded
Dyna-Gro 9533	4.17		39	Smooth
X14-1031-103-4-1	4.17	4.53	56	Bearded
GROWMARK FS 600	4.16	4.65	48	Bearded
Dyna-Gro 9151	4.14	4.65	49	Bearded
Dyna-Gro 9290	4.14	4.45	55	Bearded
RWX401	4.12		47	Smooth
GROWMARK FS WX24C	4.11		54	Bearded
AgriMAXX 505	4.10	4.63	47	Bearded
X16-1021-131-19-1-1	4.09		56	Smooth
USG 3354	4.09		44	Smooth
VT Pitman	4.09		57	Bearded
USG 3352	4.09	4.51	44	Bearded
Truman	4.05	4.38	41	Smooth
GROWMARK FS 743	4.04	4.47	43	Bearded
USG 3472	4.00	4.29	41	Bearded
PEMBROKE 2014	4.00	4.51	57	Bearded
AgriMAXX 525	4.00	4.57	42	Bearded
X14-1107-95-18-5	4.00		70	Bearded
X14-1049-27-10-1	3.99	4.51	46	Bearded
USG 3884	3.98		50	Bearded
Dyna-Gro 9231	3.98	4.44	44	Bearded
GROWMARK FS WX24A	3.97		51	Bearded
Go Wheat 4059S	3.95	4.32	41	Smooth
GROWMARK FS 624	3.95	4.52	42	Smooth
KWS542	3.95		45	Bearded
AgriMAXX EXP 2312	3.90		48	Bearded
CROPLAN CP8224	3.89	4.10	36	Smooth
CROPLAN CP8081	3.89	4.33	60	Bearded
PEMBROKE 2016	3.86	4.43	58	Bearded
KWS500	3.85		43	Bearded
X14-1128-23-12-5	3.84		45	Bearded
GROWMARK FS 617	3.83	4.43	42	Bearded
Revere Washington	3.82	4.42	33	Bearded

Variety	Soft Dough Stage Dry Matter (tons/a)		Cover Crop* Canopy (%)	Head Type
	2024	2023-24	2024	
Go Wheat 6056	3.82	4.22	47	Bearded
KWS501	3.81		50	Bearded
AgriMAXX 516	3.81	4.53	43	Bearded
KWS397	3.81	4.33	49	Smooth
Go Wheat Exp 1	3.80		43	Tip-Awned
USG 3463	3.79	4.31	33	Bearded
Dyna-Gro 9172	3.78	4.38	43	Bearded
AgriMAXX EXP 2314	3.76		49	Bearded
Dyna-Gro 9422	3.75	4.39	30	Bearded
X11-0039-1-17-5	3.73	4.40	46	Smooth
AgriMAXX 545	3.72		45	Bearded
CROPLAN CP8045	3.72	4.33	46	Bearded
X14-1035-67-7-1	3.72		53	Bearded
GROWMARK FS WX24B	3.72		50	Tip-Awned
GROWMARK FS 745	3.71	4.36	43	Bearded
AgriMAXX 513	3.70	4.51	47	Bearded
GROWMARK FS 597	3.69	4.26	52	Bearded
USG 3329	3.67		40	Bearded
Dyna-Gro 9551	3.66		45	Bearded
Revere Valor	3.66	4.16	53	Bearded
Revere Reagan	3.65	4.02	41	Bearded
USG 3574	3.64		45	Smooth
GROWMARK FS 606	3.64	4.22	34	Smooth
AgriMAXX EXP 2405	3.63		36	Bearded
Dyna-Gro 9393	3.61	4.21	45	Bearded
RWX402	3.61		33	Bearded
X14-1009-84-4-3	3.61	4.24	44	Bearded
KWS543	3.57		41	Bearded
Dyna-Gro 9542	3.55		34	Bearded
Dyna-Gro 9120	3.53	3.94	41	Bearded
Dyna-Gro 9570	3.52		48	Bearded
PEMBROKE 2021	3.47	4.16	44	Smooth
KWS529	3.47		43	Smooth
KWS527	3.45		36	Bearded
AgriMAXX 503	3.39	3.85	38	Smooth
Average	3.88	4.38	46	
C.V. (%)	9.00	10.36		
LSD (0.10)	0.58	0.51		

Location: Bluegrass Region - Fayette Co.

Planting date: 10-12-2023; conventional tillage.

Dry matter yield harvest date at soft-dough stage: 5-22-2024.

* Winter Cover Crop / Grazing biomass estimate

(% Canopy coverage using Canopeo): measured: 2-15-2024.

continued

Table 5. 2023 Kentucky Wheat Variety Straw Trial.

Variety	DM Straw Yield* tons/acre		State Average**
	2024	2023-24	Grain Yield (bu/a)
X15-1019-48-8-3	1.78		71.4
X15-1004-24-4-5-1	1.57		67.4
X14-1049-27-10-1	1.47	1.68	68.0
X16-3013-1-12-5	1.46		68.5
KWS527	1.41		79.4
X14-1107-95-18-5	1.39		72.5
X16-1021-13-13-3-5	1.37	1.66	68.7
Truman	1.36	1.67	54.3
USG 3463	1.34	1.42	76.7
GROWMARK FS 606	1.32	1.65	72.7
X14-1009-84-4-3	1.32	1.56	75.8
X16-1021-131-19-1-1	1.30		74.3
Dyna-Gro 9231	1.28	1.52	77.6
Go Wheat Exp 1	1.28		79.2
GROWMARK FS 743	1.24	1.52	77.5
USG 3352	1.22	1.46	71.3
CROPLAN CP8045	1.21	1.42	72.1
Go Wheat 6056	1.21	1.37	72.2
KWS490	1.20	1.49	78.8
USG 3472	1.18	1.28	73.8
AgriMAXX 525	1.16	1.36	77.5
GROWMARK FS WX24C	1.16		76.7
X14-1035-67-7-1	1.16		74.9
Dyna-Gro 9393	1.15	1.31	70.9
USG 3329	1.15		72.0
USG 3354	1.15		79.7
KWS501	1.14		74.1
VT Pitman	1.13		70.0
GROWMARK FS 597	1.12	1.45	76.8
X14-1128-23-12-5	1.12		73.1
AgriMAXX 505	1.10	1.51	74.4
GROWMARK FS 600	1.10	1.43	73.7
GROWMARK FS 624	1.10	1.31	69.4
PEMBROKE 2014	1.10	1.35	68.2
AgriMAXX 535	1.09	1.34	67.0
Dyna-Gro 9553	1.09		74.4
Dyna-Gro 9151	1.08	1.51	74.0
Go Wheat 4059S	1.08	1.38	67.4
KWS542	1.08		75.3
AgriMAXX EXP 2314	1.06		74.6
CROPLAN CP8081	1.06	1.33	75.7

Variety	DM Straw Yield* tons/acre		State Average**
	2024	2023-24	Grain Yield (bu/a)
AgriMAXX 516	1.04	1.37	75.3
Dyna-Gro 9422	1.04	1.25	79.4
Revere Washington	1.04	1.30	78.6
KWS543	1.03		66.5
AgriMAXX 545	1.02		79.9
Dyna-Gro 9172	1.02	1.27	75.7
RWX401	1.02		70.4
AgriMAXX 513	1.00	1.31	76.4
KWS500	1.00		69.3
AgriMAXX EXP 2312	0.99		73.2
Dyna-Gro 9120	0.99	1.31	70.8
GROWMARK FS 745	0.99	1.29	76.5
AgriMAXX EXP 2405	0.98		76.5
Dyna-Gro 9290	0.98	1.38	71.4
KWS397	0.97	1.22	75.7
KWS525	0.97		64.8
PEMBROKE 2016	0.97	1.28	70.9
USG 3884	0.97		76.9
X11-0039-1-17-5	0.96	1.19	72.7
GROWMARK FS 617	0.95	1.23	65.8
PEMBROKE 2021	0.95	1.29	72.5
RWX402	0.95		78.7
Revere Valor	0.94	1.23	74.1
Dyna-Gro 9533	0.92		73.4
Dyna-Gro 9542	0.92		79.8
GROWMARK FS WX24B	0.92		74.5
Revere Reagan	0.92	1.17	77.9
X14-1031-103-4-1	0.91	1.19	70.2
CROPLAN CP8224	0.87	1.21	66.8
KWS529	0.87		73.7
GROWMARK FS WX24A	0.86		71.8
AgriMAXX 503	0.83	1.19	69.9
USG 3574	0.77		69.8
Dyna-Gro 9570	0.75		75.8
Dyna-Gro 9551	0.73		72.0
Average	1.10	1.37	73.2
C.V. (%)	15.47	14.04	9.3
LSD (0.10)	0.28	0.21	6.5

Location: Bluegrass Region - Fayette Co.

Planting date: 10-12-2023; Conventional tillage

Harvest date: 6-14-2024.

* Dry Matter straw yield following grain harvest.

** Average grain yield of three 2024 county trials - (Calloway, Woodford, Fayette).

continued

Table 6. 2024 Kentucky Wheat Variety Disease Ratings and Metribuzin Tolerance.

Variety	Head Scab	Glume Blotch	Powdery Mildew	Leaf Rust	Leaf Blotch	Metribuzin Tolerance
AgriMAXX 503	1.9	3.0	2.5	4.0	5.7	2.0
AgriMAXX 505	2.6	4.8	1.8	5.5	4.0	2.1
AgriMAXX 513	2.6	3.3	3.0	5.3	7.0	2.3
AgriMAXX 516	2.6	3.5	2.8	5.5	6.7	1.8
AgriMAXX 525	2.9	2.8	2.0	6.0	3.0	2.5
AgriMAXX 535	4.1	3.8	1.3	2.3	6.0	1.8
AgriMAXX 545	3.6	2.5	3.0	5.8	3.3	3.0
AgriMAXX EXP 2312	3.4	3.8	6.5	4.5	5.0	2.3
AgriMAXX EXP 2314	2.9	2.0	3.0	3.0	1.3	3.0
AgriMAXX EXP 2405	2.5	1.8	4.0	5.8	5.0	2.7
CROPLAN CP8045	3.0	2.5	1.3	5.8	5.7	1.7
CROPLAN CP8081	2.9	2.5	8.0	2.3	3.7	1.8
CROPLAN CP8224	2.8	3.5	4.8	4.0	5.7	3.0
Dyna-Gro 9120	2.9	3.3	1.3	3.5	6.0	2.3
Dyna-Gro 9151	3.1	4.5	3.8	5.3	4.7	1.4
Dyna-Gro 9172	3.0	3.8	3.3	5.5	7.0	1.9
Dyna-Gro 9231	2.9	3.5	2.0	4.3	5.7	1.4
Dyna-Gro 9290	2.9	1.8	2.8	3.3	6.3	3.3
Dyna-Gro 9393	3.8	3.0	4.0	3.8	7.3	3.6
Dyna-Gro 9422	3.3	2.3	1.0	5.0	4.7	2.8
Dyna-Gro 9533	2.0	2.5	1.0	5.8	3.7	2.1
Dyna-Gro 9542	2.4	2.5	2.0	4.5	6.3	2.5
Dyna-Gro 9551	3.5	3.8	3.3	5.8	6.7	3.2
Dyna-Gro 9553	3.6	3.5	4.0	3.0	1.7	2.7
Dyna-Gro 9570	2.9	3.8	6.0	4.3	6.3	2.4
Go Wheat 4059S	2.8	5.0	2.0	4.0	5.0	2.2
Go Wheat 6056	3.1	3.0	2.8	5.0	7.0	1.7
Go Wheat Exp 1	2.1	2.3	1.0	2.5	5.3	1.8
GROWMARK FS 597	2.1	2.0	4.5	3.0	6.7	3.3
GROWMARK FS 600	2.9	4.3	2.5	5.5	4.0	2.6
GROWMARK FS 606	2.1	2.5	1.8	2.8	5.3	3.9
GROWMARK FS 617	3.6	3.0	1.3	4.0	4.0	2.3
GROWMARK FS 624	3.4	7.0	1.8	4.3	7.7	2.8
GROWMARK FS 743	3.4	4.0	2.3	4.5	4.7	2.3
GROWMARK FS 745	2.8	3.8	3.3	5.3	6.7	1.3
GROWMARK FS WX24A	3.5	3.5	6.0	4.8	6.3	2.2
GROWMARK FS WX24B	2.1	2.5	3.3	1.3	3.0	1.6
GROWMARK FS WX24C	3.3	2.5	9.0	1.0	5.7	1.4
KWS397	1.9	2.8	6.0	2.8	3.7	3.4

continued

Table 6. (continued)

Variety	Head Scab	Glume Blotch	Powdery Mildew	Leaf Rust	Leaf Blotch	Metribuzin Tolerance
KWS490	2.8	2.3	7.0	1.8	3.0	1.6
KWS500	2.5	2.8	3.3	5.5	3.0	1.9
KWS501	2.9	2.5	5.5	4.3	3.7	1.4
KWS525	3.1	3.5	1.0	3.3	7.3	1.0
KWS527	3.0	1.8	1.3	4.3	5.0	1.4
KWS529	2.1	4.0	4.0	3.3	5.0	2.3
KWS542	2.8	2.8	1.0	1.8	5.0	2.8
KWS543	3.3	2.5	1.8	2.8	5.3	1.7
PEMBROKE 2014	2.6	3.0	1.5	4.5	7.0	2.3
PEMBROKE 2016	2.5	3.0	4.5	3.0	7.7	2.6
PEMBROKE 2021	3.4	2.5	7.0	3.3	6.3	1.8
Revere Reagan	3.4	6.0	1.5	5.0	7.0	2.7
Revere Valor	3.4	4.0	1.5	6.0	4.7	2.2
Revere Washington	3.4	3.0	1.0	5.0	5.7	2.1
RWX401	2.3	2.8	7.3	1.5	3.0	2.5
RWX402	2.5	3.5	7.5	3.0	5.3	2.7
Truman	2.0	2.3	1.0	5.0	5.0	3.0
USG 3329	3.1	4.8	1.8	5.8	5.3	1.9
USG 3352	4.1	4.0	1.5	3.8	4.7	1.5
USG 3354	2.5	1.3	1.0	1.5	6.3	2.3
USG 3463	2.0	3.0	1.5	2.5	6.0	1.5
USG 3472	2.6	2.8	3.5	4.3	5.7	1.8
USG 3574	2.1	3.3	1.0	6.8	7.7	2.5
USG 3884	2.8	2.8	3.5	3.3	3.3	4.0
VT Pitman	4.4	2.3	1.0	1.3	3.0	3.0
X11-0039-1-17-5	3.3	2.5	6.8	5.8	8.3	2.8
X14-1009-84-4-3	4.4	3.5	4.0	3.3	6.0	1.8
X14-1031-103-4-1	3.8	2.3	2.0	4.3	6.0	1.9
X14-1035-67-7-1	3.3	2.0	1.0	5.3	6.5	2.6
X14-1049-27-10-1	3.1	1.5	1.0	1.8	5.5	4.2
X14-1107-95-18-5	3.4	2.3	1.0	1.8	6.5	4.3
X14-1128-23-12-5	2.9	4.0	1.5	2.5	6.5	2.5
X15-1004-24-4-5-1	4.5	2.5	6.5	1.3	3.5	2.5
X15-1019-48-8-3	3.6	2.3	2.3	1.5	4.5	2.9
X16-1021-131-19-1-1	2.4	3.0	1.8	6.5	7.0	2.5
X16-1021-13-13-3-5	4.1	3.5	5.0	5.8	6.0	2.3
X16-3013-1-12-5	3.3	4.3	1.5	1.3	3.7	2.8
Average	3.0	3.1	3.0	3.9	5.3	2.4

Metribuzin tolerance (injury) ratings: 1 = no injury; 5 = severe injury.

Disease Rating scale: 1 = resistant; 9 = susceptible.

Disease ratings taken at Woodford and Fayette Co. locations.

Table 7. 2024 Kentucky Barley Variety Trial.

Variety	Yield (Bu/A)*	Yield (Bu/A)*	Test Wt. (Lb/bu)	Height (In)	Heading Date > April 1
	2024	2023-24	2024	2024	2024
FLAVIA	70.6	98.3	39.7	30	26
KW 6-2180	67.6		36.5	33	28
KWS Tardis	61.4		39.6	30	28
Marouetta	58.6	91.2	38.5	31	25
Thoroughbred	58.2		38.9	29	25
KWS Delis	54.5		38.1	27	26
Avalon	53.1	72.4	41.6	35	25
Origin Malt Puffin	52.5	76.4	40.1	27	27
Secretariat	52.2	76.2	41.9	27	24
Origin Malt FLEX	47.7		37.6	29	25
Hirondella	46.9	83.6	37.0	28	27
LCS Violetta	44.3		39.5	26	25
VT Beahm	40.1	62.4	39.6	35	22
20211573**	34.0	57.8	45.3	38	27
Average	53.0	77.3	39.6	30	26
C.V. (%)	13.3	14.5			
LSD (0.10)	12.1	12.3			

* 48-lb standard bushel weight.

** Hulless barley (60-lb bushel wt.).

Planting date: 10-26-23; conventional tillage.

Harvest Date: 6-11-24.

Location: Caldwell County, (UKREC-Princeton, KY).

Note: Low yields and data variability likely due to BYDV pressure

Table 8. 2024 Kentucky Triticale Variety Trial.

Variety	Yield (Bu/A)*	Yield (Bu/A)*	Test Wt. (Lb/bu)	Height (In)	Heading Date > April 1	Cover Crop Canopy (%)
	2024	2023-24	2024	2024	2024	2024
Trical Gainer 154	57.6	62.6	51.2	46	23	55
Trical Surge	51.6		43.9	56	27	51
Trical Ace	45.6	66.0	50.4	48	27	57
Trical 7-13-2-1	44.7		50.5	43	25	43
KY Triticale	43.8		47.2	48	28	46
Trical EXP 0209	42.3	51.2	47.8	59	29	44
Average	47.6	59.9	48.5	50	26	49
C.V. (%)	7.3	12.4				
LSD (0.10)	6.4	8.3				

*60-lb standard bushel weight.

Planting date: 10-12-23; conventional tillage.

Harvest Date: 6-18-24.

Location: Fayette County, (Lexington, KY).

Table 9. 2024 Kentucky Cereal Rye Variety Trial.

Variety	Yield (Bu/A)*	Yield (Bu/A)*	Test Wt. (Lb/bu)	Height (In)	Heading Date > April 1	Cover Crop Canopy (%)
	2024	2023-24	2024	2024	2024	2024
KWS H20003	86.7	86.6	52.7	53	31	40
KWS RECEPTOR	82.0	84.4	55.1	52	32	47
KWS H9011	79.4		54.8	53	31	46
KWS Serafino	79.1	78.9	54.6	52	32	47
KWS H9008	77.8		54.2	54	31	40
KWS H20005	75.0		52.8	53	31	48
KWS Tayo	70.6	74.3	55.0	51	32	43
Danko	58.1	50.2	54.8	59	30	47
KY Rye	53.5		51.7	63	25	45
Spooner	50.7	57.0	52.5	62	28	57
LAX Guardian	50.3	45.1	52.0	62	29	52
ND Dylan	50.1	57.6	52.0	62	30	51
KWS H241 dwarf	46.9		45.4	39	34	55
AC Hazlet	43.8	44.7	52.8	57	31	44
Average	64.6	64.3	52.9	55	30	47
C.V. (%)	10.2	15.0				
LSD (0.10)	11.2	10.9				

* 56-lb standard bushel weight.

Planting date: 10-12-23; conventional tillage.

Harvest Date: 6-20-24.

Location: Fayette County, (Lexington, KY).

** Hybrid Rye

Table 10. 2024 Kentucky Winter Oat Variety Trial.

Variety	Yield (Bu/A)*	Yield (Bu/A)*	Test Wt. (Lb/bu)	Height (In)	Heading Date > April 1
	2024	2023-24	2024	2024	2024
Stratton Savage	85.6		35.1	41	32
SCOP 85-8	84.8	127.2	35.3	39	33
SCLA 0100214	84.4	121.4	34.7	31	33
Cosaque	84.2	126.8	34.4	40	36
GRAHAM	82.7	116.7	35.1	33	33
Horizon 578	82.2	128.4	34.1	33	30
Bob	79.9	111.3	35.8	36	29
Average	83.4	122.0	34.9	36	32
C.V. (%)	7.1	12.4			
LSD (0.10)	10.7	17.8			

Location: Fayette Co. (Lexington)

Planting date: 10-12-2023; Conventional tillage.

Harvest date: 6-13-2024.

*32-lb standard bushel weight.

Winter Survival = 100%.

2024 Kentucky Small Grain Variety Performance Trial

varietytesting.ca.uky.edu/wheat



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