

Wheat Update 2023

ARKANSAS WHEAT PERFORMANCE TRIALS AND VARIETY SELECTION

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Wheat yield performance trials were conducted during the 2022-2023 growing season by the Arkansas Wheat Variety Testing Program under the direction of John Carlin to provide information about yield potential, agronomic characteristics, and disease reaction of commercially available and experimental lines/varieties of wheat. Variety selection is very important for successful and profitable wheat production. This publication is a summary of the Arkansas Wheat Variety Testing Program results from 2023, along with 2 and 3-year average yields from commercially available varieties only and is designed to help producers select adapted, high-yielding, and disease-resistant varieties.

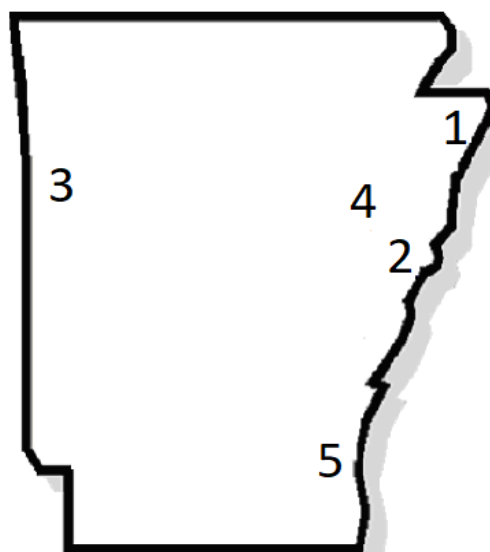


FIGURE 1. LOCATIONS OF ARKANSAS WHEAT PERFORMANCE TESTS

- 1 – Northeast Research and Extension Center, Keiser – Sharkey Silty Clay/Steele Complex
- 2 – Lon Mann Cotton Research Station, Marianna – Calloway Silt Loam
- 3 – Vegetable Substation, Kibler – Roxana Silt Loam
- 4 – Pine Tree Research Station, Colt – Calloway Silt Loam
- 5 – Southeast Branch Station, Rohwer – Rilla/McGehee Silt Loam

Methods

Wheat varieties and experimental lines were entered by seed companies and public institutions and evaluated for an unbiased comparison of their performance. In general, recommended cultural practices for wheat production in Arkansas were used. All locations were planted between October 27 and November 4 into conventionally tilled seedbeds using small plot planters.

Each trial consisted of 72 varieties and experimental lines replicated four times in a randomized complete block design. A seeding rate of 105 lb/A was used for all varieties at each location. Recommended production practices were followed, and pests were controlled as needed. No foliar fungicides were applied. Plots were harvested with a small plot combine to determine yields, which were adjusted to 13 percent moisture.

For further details concerning methods and detailed results from performance trials, consult the *Small-Grain Cultivar Performance Tests 2022-23*, Arkansas Agricultural Experiment Station, located at: <https://aaes.uada.edu/variety-testing/>

Table 1. Arkansas Wheat Performance Trials, Summary of Commercially Available Varieties, 2023.

Entry Name	-----2023 Performance (bu./ac)-----				
	All Trial Avg*.	Keiser	Marianna	Pine Tree	Rohwer
Delta Grow 1200	92.9	91.4	85.3	94.5	100.3
KWS453	90.8	88.2	87.3	101.5	86.4
PROGENY #BINGO	90.3	99.0	78.4	98.0	86.0
USG 3363	90.3	91.8	84.9	101.5	82.9
AgriMAXX 525	88.8	87.3	82.9	101.5	83.4
KWS369	88.3	87.9	81.6	101.5	82.2
KWS459	88.2	89.8	79.4	100.4	83.5
KWS490	88.2	89.7	80.1	89.6	93.4
USG 3352	88.0	91.1	83.3	97.4	80.4
P26R33	87.5	85.8	78.1	96.5	89.5
AgriMAXX 514	87.4	93.5	78.0	96.5	81.6
Dyna-Gro 9002	87.2	86.2	75.3	102.4	84.8
PROGENY #BUSTER	86.5	95.9	73.9	97.4	78.6
Dixie Brown	86.4	78.6	87.2	90.4	89.5
Delta Grow 1000	86.2	77.4	81.9	102.7	83.0
P26R41	85.7	88.9	77.1	89.6	87.3
Dyna-Gro 9701	85.6	88.8	75.2	96.0	82.3
KWS495	85.3	79.8	86.3	101.5	73.7
Delta Grow 7500	85.2	85.6	76.6	96.2	82.4
AgriMAXX 505	85.0	88.7	72.7	97.4	81.1
AgriMAXX 473	84.8	84.4	80.1	91.9	82.8
P26R45	84.6	87.5	74.2	107.6	69.1
PROGENY #TURBO	84.1	76.6	77.2	95.9	86.6
Dyna-Gro 9151	83.8	82.2	74.7	99.5	78.9
P26R59	83.5	81.9	78.6	96.5	77.2
Dyna-Gro 9481	83.3	88.2	80.4	96.0	68.7
AgriMAXX 503	83.2	88.6	72.3	97.7	74.2
Dixie Cache	83.0	87.3	75.6	96.5	72.8
AgriMAXX 535	82.6	83.7	76.3	89.3	81.2
Revere 2169	82.6	80.7	80.1	90.1	79.4
AGS 2055	82.6	76.4	77.4	96.5	79.9
Go Wheat 4059S	82.5	85.5	72.6	91.3	80.5
KWS397	82.2	82.2	81.8	94.5	70.5
AgriMAXX 516	81.9	87.4	67.6	89.8	82.9
Dyna-Gro 9393	81.9	86.1	73.3	90.4	77.9
USG 3234	81.8	83.5	73.5	97.4	72.9
Delta Grow 1900	81.5	81.3	79.1	84.4	81.0
KWS472	80.9	80.7	71.4	91.3	80.0
USG 3463	80.6	79.4	68.7	95.0	79.3
Viking 822	80.5	75.4	73.4	91.1	82.3
Dyna-Gro 9172	80.3	85.8	72.4	85.5	77.4
Delta Grow 1700	80.2	84.9	68.4	100.0	67.6
Dyna-Gro 9811	79.5	80.8	71.1	89.6	76.6
Go Wheat 6056	79.1	85.0	72.7	87.5	71.0
USG 3783	79.0	85.5	72.2	88.3	70.2

Table 1 Continued. Arkansas Wheat Performance Trials, Summary of Commercially Available Varieties, 2023.

Entry Name	-----2023 Performance (bu./ac)-----				
	All Trial Avg*.	Keiser	Marianna	Pine Tree	Rohwer
Dyna-Gro 9120	78.9	80.3	65.8	91.3	78.2
Delta Grow 1800	77.3	81.2	73.0	89.3	65.7
AgriMAXX 492	77.1	81.9	70.9	83.7	72.0
Go Wheat 6000	76.4	77.3	68.8	88.0	71.5
PROGENY #CHAD	76.2	74.6	73.9	86.0	70.3
Dyna-Gro 9290	74.9	80.8	65.7	82.1	70.8
KWS477	71.9	64.2	60.5	88.3	74.4
Go Wheat 2032	71.3	60.2	72.5	84.0	68.5
Delta Grow 3500	66.0	66.9	55.7	77.1	64.3
Dyna-Gro 9120	78.9	80.3	65.8	91.3	78.2
Delta Grow 1800	77.3	81.2	73.0	89.3	65.7
Mean	82.8	83.6	75.5	93.6	78.7

*All Trial Average is the average yield of trials at Keiser, Marianna, Pine Tree, and Rohwer during 2023.

Table 2. Arkansas Wheat Performance Trials, Summary of Commercially Available Varieties, 2022-2023.						
	-----2-year Average Performance (bu./ac)-----					
Entry Name	All Trial Avg.*	Keiser	Kibler**	Marianna	Pine Tree	Rohwer
Delta Grow 1200	93.1	83.6	82.2	81.7	98.2	108.8
PROGENY #BUSTER	88.2	86.1	79.0	81.0	91.8	93.7
AgriMAXX 514	88.0	78.9	76.9	85.5	97.8	89.7
PROGENY #BINGO	87.7	80.1	---	86.2	94.3	90.4
PROGENY #TURBO	86.0	69.9	75.4	77.9	94.7	101.5
Delta Grow 1000	85.9	67.7	---	83.7	94.9	97.2
USG 3352	85.8	78.5	79.9	77.6	95.3	91.6
Dixie Brown	84.8	70.9	73.8	84.9	90.0	93.4
AgriMAXX 525	84.5	73.3	---	78.1	96.8	90.0
Dyna-Gro 9120	84.3	73.4	85.8	76.7	93.5	93.5
Dyna-Gro 9701	84.0	76.5	74.7	77.7	93.8	87.9
Dyna-Gro 9002	83.7	75.3	74.0	74.2	98.0	87.3
Dixie Cache	82.9	76.2	---	80.0	94.4	81.2
AgriMAXX 473	82.9	72.0	74.6	82.7	88.9	88.1
Dyna-Gro 9151	82.8	74.3	80.7	73.6	94.5	88.8
P26R59	82.7	71.8	80.4	74.0	95.4	89.7
Dyna-Gro 9393	82.2	73.3	---	77.3	92.2	86.0
Delta Grow 1800	82.0	75.1	67.2	75.3	90.2	87.5
USG 3783	82.0	70.9	---	81.7	93.0	82.4
AGS 2055	81.5	68.3	64.3	79.5	92.7	85.3
Dyna-Gro 9811	80.5	72.1	81.0	71.1	89.0	89.9
P26R45	80.4	78.0	79.2	75.3	97.3	70.9
AgriMAXX 492	80.2	74.1	---	69.9	87.1	89.6
Dyna-Gro 9172	79.8	72.9	76.7	75.4	85.0	86.0
AgriMAXX 503	79.8	76.7	72.8	74.6	90.7	77.1
PROGENY #CHAD	79.6	70.4	66.2	79.2	85.8	82.9
Revere 2169	78.1	67.9	75.2	72.2	87.2	85.1
Go Wheat 6056	77.6	68.1	---	73.5	84.2	84.7
Go Wheat 6000	77.3	71.7	60.1	72.6	86.2	78.6
Delta Grow 3500	74.3	67.0	41.4	67.3	75.6	87.3
Go Wheat 2032	70.0	54.6	49.5	65.2	80.2	80.0
Mean	82.3	73.2	72.7	77.0	91.2	87.9
*Trials with yield data from 2021 and 2022 only. Includes Keiser, Marianna, Pine Tree, and Rohwer						
**Kibler 2-year calculated from 2021 and 2022 (no data in 2023.) Not included in All Trials avg.						

Table 3. Arkansas Wheat Performance Trials, Summary of Commercially Available Varieties, 2021-2023.

Entry Name	-----3-Year Average Performance (bu./ac)-----			
	All Trials*	Keiser	Marianna	Pine Tree
AgriMAXX 473	78.4	70.0	82.9	82.2
AgriMAXX 492	74.9	69.4	75.3	79.9
AgriMAXX 503	---	74.4	80.1	---
AgriMAXX 514	82.4	74.1	82.0	91.0
AGS 2055	76.2	70.7	76.0	81.8
Delta Grow 1200	83.4	78.5	82.9	88.8
Delta Grow 1800	74.5	68.0	75.1	80.5
Delta Grow 3500	68.0	64.1	67.9	71.9
Dixie Brown	80.1	70.0	86.1	84.1
Dyna-Gro 9002	78.6	71.9	74.8	89.1
Dyna-Gro 9120	78.3	73.3	76.8	84.7
Dyna-Gro 9151	78.0	73.2	76.0	84.6
Dyna-Gro 9172	73.5	69.4	73.4	77.8
Dyna-Gro 9701	78.1	73.6	76.0	84.8
Dyna-Gro 9811	75.6	73.6	70.7	82.5
Go Wheat 2032	65.2	55.6	63.9	76.0
Go Wheat 6000	74.2	69.2	75.0	78.3
P26R45	---	70.3	74.9	---
P26R59	78.5	72.7	78.8	84.1
PROGENY #TURBO	74.9	65.4	78.4	80.8
USG 3352	80.9	74.7	79.5	88.6
Mean	76.5	70.6	76.5	82.7

*Trials with yield data from 2021, 2022, and 2023, which includes Keiser, Marianna, and Pine Tree. AgriMAXX 503 and P26R45 do not have 3-year average yield due to deer feeding at the Pine Tree location.

Table 4. Agronomic Characteristics of Commercially Available Varieties in Arkansas Performance Trials, 2023.*

Entry Name	Test Weight Lb/bu	Plant Height Inches	Lodging 1-10**	Heading Date	Owned Variety
AgriMAXX 473	59.8	38	4.3	4/18/23	Yes
AgriMAXX 492	60.8	33	5.3	4/11/23	Yes
AgriMAXX 503	59.2	37	3.3	4/18/23	No
AgriMAXX 505	60.6	36	4.0	4/19/23	Yes
AgriMAXX 514	57.8	35	4.0	4/17/23	Yes
AgriMAXX 516	59.2	35	3.0	4/18/23	Yes
AgriMAXX 525	60.4	35	3.3	4/19/23	Yes
AgriMAXX 535	60.1	34	2.3	4/18/23	Yes
AGS 2055	59.4	35	5.5	4/16/23	Yes
Delta Grow 1000	59.5	38	1.8	4/17/23	Yes
Delta Grow 1200	60.1	34	2.8	4/18/23	Yes
Delta Grow 1700	58.3	34	1.3	4/16/23	No
Delta Grow 1800	60.3	39	3.5	4/11/23	Yes
Delta Grow 1900	60.0	33	6.8	4/15/23	Yes
Delta Grow 3500	60.3	31	5.8	4/8/23	Yes
Delta Grow 7500	59.8	38	2.5	4/17/23	Yes
Dixie Brown	60.0	38	1.5	4/18/23	Yes
Dixie Cache	59.0	35	2.8	4/20/23	Yes
Dyna-Gro 9002	58.7	35	3.3	4/16/23	Yes
Dyna-Gro 9120	60.5	34	2.5	4/17/23	Yes
Dyna-Gro 9151	60.7	35	2.5	4/18/23	Yes
Dyna-Gro 9172	59.1	35	1.0	4/19/23	Yes
Dyna-Gro 9290	60.0	33	2.8	4/12/23	Yes
Dyna-Gro 9393	59.0	33	1.0	4/18/23	Yes
Dyna-Gro 9481	59.9	34	1.5	4/15/23	No
Dyna-Gro 9701	60.1	39	1.3	4/18/23	Yes
Dyna-Gro 9811	59.7	35	1.0	4/14/23	Yes
Go Wheat 2032	59.7	32	6.0	4/10/23	Yes
Go Wheat 4059S	60.2	35	2.5	4/19/23	No
Go Wheat 6000	60.8	33	5.5	4/15/23	Yes
Go Wheat 6056	58.8	35	3.3	4/18/23	Yes
KWS369	59.8	36	1.8	4/20/23	No
KWS397	59.3	33	1.0	4/16/23	No
KWS453	61.0	34	2.8	4/20/23	No
KWS459	59.6	32	7.3	4/16/23	Yes
KWS472	59.5	33	2.8	4/18/23	Yes
KWS477	60.0	33	1.8	4/12/23	No
KWS490	60.1	33	4.8	4/17/23	Yes
KWS495	60.3	31	3.0	4/16/23	Yes
P26R33	59.7	35	3.5	4/17/23	Yes
P26R41	59.6	34	3.3	4/16/23	Yes
P26R45	59.8	38	2.5	4/18/23	No
P26R59	58.7	31	1.0	4/16/23	No
PROGENY #BINGO	59.8	35	4.5	4/18/23	Yes
PROGENY #BUSTER	59.8	35	1.0	4/17/23	Yes

Table 4 Continued. Agronomic Characteristics of Commercially Available Varieties in Arkansas Performance Trials, 2023.*

Entry Name	Test Weight Lb/bu	Plant Height Inches	Lodging 1-10**	Heading Date	Awned Variety
PROGENY #CHAD	58.6	29	5.0	4/13/23	No
PROGENY #TURBO	60.3	34	1.8	4/13/23	No
Revere 2169	59.0	36	2.8	4/18/23	Yes
USG 3234	59.7	39	1.5	4/20/23	No
USG 3352	59.3	38	2.8	4/20/23	Yes
USG 3363	59.8	37	2.8	4/18/23	Yes
USG 3463	58.8	32	1.0	4/16/23	Yes
USG 3783	59.7	33	3.0	4/17/23	Yes
Viking 822	60.1	38	2.5	4/18/23	Yes
Mean	59.7	35	3.0	4/16/23	---

*Summary of data on commercially available entries in 2023 trials.

**Lodging was visually rated prior to harvest. 1=no lodging, 10 = 100% lodging, ratings are from the Rohwer location only.

Table 5. Disease Reactions of Commercially Available Varieties in Arkansas Wheat Performance Trials and Other Disease Trials, 2021-2023.*

Entry Name	Fusarium Head Blight Severity % Fayetteville**	Fusarium Head Blight Severity % Newport**	Septoria Tritici Blotch Severity 0-9	Stripe Rust Severity % Kibler***	Bacterial Leaf Streak Severity 0-9
AgriMAXX 473	0	2.5	3.9	0.3	3.8
AgriMAXX 492	5	2.5	7.9	3.7	0.5
AgriMAXX 503	0	2.5	3.9	10.0	3.3
AgriMAXX 505	---	---	3.2	---	3.0
AgriMAXX 514	2.5	0	4.6	---	0.5
AgriMAXX 516	---	---	4.3	---	2.5
AgriMAXX 525	---	---	2.6	---	0.3
AgriMAXX 535	---	---	3.7	---	0.8
AGS 2055	35.0	32.5	5.8	16.7	2.5
Delta Grow 1000	0	0	4.1	---	4.3
Delta Grow 1200	2.5	0	3.8	5.0	1.5
Delta Grow 1700	---	---	4.6	---	2.0
Delta Grow 1800	2.5	2.5	6.2	23.3	1.5
Delta Grow 1900	---	---	6.6	---	2.3
Delta Grow 3500	27.5	17.5	7.8	56.7	1.8
Delta Grow 7500	---	---	3.3	---	2.8
Dixie Brown	0	2.5	3.6	0	1.8
Dixie Cache	---	---	4.1	---	2.3
Dyna-Gro 9002	10.0	2.5	4.1	11.7	1.0
Dyna-Gro 9120	0	5	4.7	0.3	0.5
Dyna-Gro 9151	0	0	3.3	11.7	3.5
Dyna-Gro 9172	5	2.5	3.9	6.7	1.0
Dyna-Gro 9290	---	---	7.6	---	0.8
Dyna-Gro 9393	10	10	5.1	---	2.0
Dyna-Gro 9481	---	---	4.6	---	1.5
Dyna-Gro 9701	2.5	2.5	3.7	11.7	2.5
Dyna-Gro 9811	7.5	10	4.7	0.7	2.5
Go Wheat 2032	17.5	32.5	7.0	23.3	1.5
Go Wheat 4059S	---	---	2.9	---	0.3
Go Wheat 6000	7.5	10	6.4	2.0	2.3
Go Wheat 6056	5	0	4.6	---	2.5
KWS369	---	---	2.7	---	0.5
KWS397	---	---	4.9	---	4.8
KWS453	---	---	1.8	---	0.3
KWS459	---	---	5.8	---	2.0
KWS472	---	---	3.8	---	1.5
KWS477	---	---	7.6	---	0.5
KWS490	---	---	4.4	---	1.5
KWS495	---	---	4.9	---	2.5
P26R33	---	---	5.2	---	2.8
P26R41	---	---	4.2	---	2.0
P26R45	5	2.5	2.9	0.3	2.5

Table 5 Continued. Disease Reactions of Commercially Available Varieties in Arkansas Wheat Performance Trials and Other Disease Trials, 2021-2023.*

<u>Entry Name</u>	Fusarium Head Blight Severity % Fayetteville**	Fusarium Head Blight Severity % Newport**	Septoria Tritici Blotch Severity 0-9	Stripe Rust Severity % Kibler***	Bacterial Leaf Streak Severity 0-9
P26R59	7.5	10	4.4	6.7	3.5
PROGENY #BINGO	5	2.5	3.8	---	1.8
PROGENY #BUSTER	10	5	4.4	5	1.5
PROGENY #CHAD	7.5	0	5.8	25	3.8
PROGENY #TURBO	7.5	5	4.1	11.7	2.0
Revere 2169	2.5	2.5	4.4	8.3	3.0
USG 3234	---	---	2.2	---	0.5
USG 3352	7.5	5	1.9	3.7	0.8
USG 3363	---	---	3.4	---	1.5
USG 3463	---	---	5.6	---	3.0
USG 3783	7.5	7.5	5.0	---	2.0
Viking 822	---	---	3.3	---	1.3
Mean	6.9	6.1	4.5	10.6	2.0

*Summary of available data from various locations in 2021-2023 trials. Disease ratings were visually rated based on a 0-9 scale or percentage scale where the higher number represents higher disease levels.

**Data from inoculated and misted field nurseries at Fayetteville and Newport in 2022.

*** Stripe rust ratings are from the 2021 Performance Trial at Kibler. No stripe rust ratings were obtained in 2022 or 2023 due to low disease pressure.

Septoria tritici blotch and bacterial leaf streak ratings were obtained in 2023.