

Delaware Small Grain Variety Trials 2024

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endorsement over products of other companies not mentioned.

Acknowledgments

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Methodology

All trials were conducted in a randomized, complete block design with four total replications. The final plot length of all trials was 12 ft. More experimental details such as population, plot width, planting/harvest dates, and tillage or cultural practices can be found in the following table. Temperature and rainfall information for the growing season can be accessed at the nearest test locations from DEOS http://www.deos.udel.edu/

C.V. and L.S.D.

The coefficient of variation (C.V.) is a measurement of the amount of uncontrollable variability due to differences in the soil, weather, fertility, etc. The acceptable CV level is dependent on the field of the research. Medicine and pharmaceutical research have stricter CV ranges than research in agricultural sciences due to more control over outside variables. The American Association for Clinical Chemistry in *Clinical Chemistry, Volume 35, Issue 4* defines for agricultural studies that CV<10 is very good, 10-20 is good, 20-30 is acceptable. Please note that the C.V. is expected to be higher at dryland locations.

The least significant difference (L.S.D.; computed at a 5% level of probability) is a tool to determine if two average values are significantly different. The difference between two varieties must exceed the L.S.D. value to be considered significantly different from one another.

HOW TO BEST USE SMALL GRAIN VARIETY TRIAL INFORMATION

Information presented in this summary may be useful in selecting wheat and barley varieties for production in Delaware. To maximize the usefulness of this information, follow these suggestions:

1. Select the test location that best represents your production location. Generally, varieties are adaptable across Delaware but certain soil or climatic conditions, cultural practices, or insect/disease problems may limit the choice.

2. Multiple-year average (means) across the greatest number of years are the best predictors of performance. Refer to previous test reports for information to evaluate wheat and barley varieties which are of interest to you. Comparison between your selected variety and the grand mean for your closest test location will be helpful in identifying superior varieties for your area.

3. Check the grand mean for the long-term averages and compare with your own production experience. If your yields have been consistently below these grand mean levels, you should evaluate each part of your management system for potential areas of improvement.

Brand	Variety	Seed Treatment
AgriMAXX Wheat	505	Prime ST
AgriMAXX Wheat	513	Prime ST
AgriMAXX Wheat	516	Prime ST
AgriMAXX Wheat	535	Prime ST
AgriMAXX Wheat	544	Prime ST
AgriMAXX Wheat	545	Prime ST
AgriMAXX Wheat	Exp. 2404	Prime ST
Agripro	Agripro GP543	Helena Seed Shield
Dyna-Gro	9172	Foothold Virock, Awaken ST
Dyna-Gro	9290	Foothold Virock, Awaken ST
Dyna-Gro	9151	Foothold Virock, Awaken ST
Dyna-Gro	9533	Foothold Virock, Awaken ST
Dyna-Gro	9231	Foothold Virock, Awaken ST
Dyna-Gro	9593	Foothold Virock, Awaken ST
Dyna-Gro	9422	Foothold Virock, Awaken ST
Dyna-Gro	9570	Foothold Virock, Awaken ST
Dyna-Gro	9393	Foothold Virock, Awaken ST
Elite Pro Wheat	EP 2202	Cruiser Maxx Vibrance Cereals
Elite Pro Wheat	EP-Exp. 01	Cruiser Maxx Vibrance Cereals
Elite Pro Wheat	EP-Exp. 02	Cruiser Maxx Vibrance Cereals
EPIX SEED	EPIX 1375	Vibrance Extreme, Cruiser Maxx
EPIX SEED	EPIX 1365	Vibrance Extreme, Cruiser Maxx
EPIX SEED	EPIX 4380	Vibrance Extreme, Cruiser Maxx
EPIX SEED	EPIX 4372	Vibrance Extreme, Cruiser Maxx
EPIX SEED	EPIX XP 980	Vibrance Extreme, Cruiser Maxx
EPIX SEED	EPIX 3389	Vibrance Extreme, Cruiser Maxx

2024 Delaware Wheat Variety Trial Entries

FS Inspire Wheat	FS Inspire 747	Vibrance Extreme
FS Inspire Wheat	FS Inspire 745	Vibrance Extreme
FS Inspire Wheat	FS Inspire 743	Vibrance Extreme
MBX	MBX 120	Helena Seed Shield
MBX	MBX Exp. 360	Vibrance Extreme, Cruiser Maxx
MBX	MBX 230	Helena Seed Shield
MBX	MBX 223	Helena Seed Shield
MBX	MBX 127	Helena Seed Shield
Mid-Atlantic Seeds	MAS 106	MAS PROSHIELD
Mid-Atlantic Seeds	MAS 139	MAS PROSHIELD
Mid-Atlantic Seeds	MAS 316	MAS PROSHIELD
Mid-Atlantic Seeds	MAS 225	MAS PROSHIELD
Mid-Atlantic Seeds	MAS 133	MAS PROSHIELD
Mid-Atlantic Seeds	MAS 86	MAS PROSHIELD
Mid-Atlantic Seeds	MAS 67	MAS PROSHIELD
Mid-Atlantic Seeds	MAS 2	MAS PROSHIELD
Mid-Atlantic Seeds	MAS 189	MAS PROSHIELD
Mid-Atlantic Seeds	MAS 190	MAS PROSHIELD
Mid-Atlantic Seeds	MAS 155	MAS PROSHIELD
Mid-Atlantic Seeds	MAS 228	MAS PROSHIELD
Mid-Atlantic Seeds	MAS 178	MAS PROSHIELD
Revere Seed	2347	Radius Premium
Revere Seed	2169	Radius Premium
Revere Seed	2277	Radius Premium
USG	3354	Rancona, Imidicloprid
USG	3352	Rancona, Imidicloprid
USG	3884	Rancona, Imidicloprid
USG	3329	Rancona, Imidicloprid

USG	3661	Rancona, Imidicloprid
USG	3363	Rancona, Imidicloprid
USG	3673	Rancona, Imidicloprid
Virginia Crop Improvement Association	VT Pitman	Foothold Virock, Dyna-Shield
Virginia Tech	15VTK-1-101	Foothold
Virginia Tech	17VTK4-29	Foothold
Virginia Tech	VA19W-29	Foothold

Wheat		
	Carvel Rec - Georgetown	Emerson Farms - Middletown
Number of Entries	61	61
Target Population	1.5 million seeds/acre	1.5 million seeds/acre
Plot Length	12	12
Plot Width	5.625	5.625
Spacing	9 rows, 7.5 inch (drilled)	9 rows, 7.5 inch (drilled)
Planter	Wintersteiger Plot Research Drill	Wintersteiger Plot Research Drill
Harvester	Almaco R1 combine	Almaco R1 combine
Grain Analysis	Harvest Master H2 Classic	Harvest Master H2 Classic
Number of Replications	4	4
Planting Date	10/13/2023	10/25/2023
Harvest Date	6/18/2024	6/20/2024
Soil Type	Ingleside Loamy Sand	Reybold- Queponco complex- Silt Loam
Previous Crop	corn	corn
Tillage Practices	chisel plow/disc	chisel plow/disc/turbo tilled
Fertilization	350lb/a 7-0-40 10/12/2023 (N-Sul) 1st app. 60 pounds 2/21/2024 2nd app. 60 pounds 3/18/2024	(N-Sul) 1st app. 60 pounds 2/23/2024 2nd app. 60 pounds 3/20/2024
Herbicide	Harmony SG 9 oz/acre on 3/18/2024	Harmony SG 9 oz/acre on 3/20/2024
Insecticide/Fungicide	Miravis Neo 17 oz/acre, Warrior 2 oz/acre on 5/2/2024 and 5/16/2024	none
Irrigation	Linear	dryland

Wheat	
	Murray Brothers Farm - Selbyville
Number of Entries	61
Target Population	1.5 million seeds/acre
Plot Length	12
Plot Width	5.625
Spacing	9 rows, 7.5 inch (drilled)
Planter	Wintersteiger Plot Research Drill
Harvester	Almaco R1 combine
Grain Analysis	Harvest Master H2 Classic
Number of Replications	4
Planting Date 11/14/2023	
Harvest Date	6/19/2024
Soil Type	Mullica-Berryland Complex
Previous Crop	corn
Tillage Practices	disc
Fertilization	(N-Sul) 1st app. 60 pounds 2/22/2024 2nd app. 60 pounds 3/19/2024
Herbicide	Harmony SG 9 oz/acre on 3/19/2024
Insecticide/Fungicide	none
Irrigation	Center Pivot

Barley			
	Carvel Rec - Georgetown		
Number of Entries	11		
Target Population	1.5 million seeds/acre		
Plot Length	12		
Plot Width	5.625		
Spacing	9 rows, 7.5 inch (drilled)		
Planter	Wintersteiger Plot Research Drill		
Harvester	Massey Ferguson Plot Combine		
Grain Analysis	Harvest Master H2 Classic		
Number of Replications	4		
Planting Date	10/13/2023		
Harvest Date	6/4/2024		
Soil Type	Ingleside Loamy sand		
Previous Crop	Cover Crop Mix		
Tillage Practices	disc, turbo tilled		
Fertilization	350lb/a 7-0-40 10/12/2023 (N-Sul) 1st app. 60 pounds 2/21/2024 2nd app. 60 pounds 3/18/2024		
Herbicide	Harmony SG 9 oz/acre on 3/18/2024		
Insecticide/Fungicide	Miravis Neo 17 oz/acre, Warrior 2 oz/acre on 5/2/2024 and 5/16/2024		
Irrigation	Linear		

2024 Georgetown Wheat Variety Trial

<u>Brand</u>	<u>Rank</u>	<u>Variety</u>	<u>Yield (Bu)</u>	Moisture (Harvest)	Test Weight
EPIX SEED	1	EPIX 3498	100.0	11.7	59.6
USG	2	3329	97.7	11.7	58.7
EPIX SEED	3	EPIX 3489	97.3	11.8	59.3
Mid-Atlantic Seeds	4	MAS 106	96.6	11.7	59.7
USG	5	3661	95.6	12.1	59.0
Elite Pro Wheat	6	EP-Exp. 02	94.3	11.8	59.4
MBX	7	MBX Exp. 360	94.0	11.8	58.3
AgriMAXX Wheat	8	513	92.7	11.6	59.4
Mid-Atlantic Seeds	9	MAS 225	92.5	11.9	58.0
Mid-Atlantic Seeds	10	MAS 228	92.0	11.9	59.4
FS Inspire Wheat	11	FS Inspire 745	91.5	11.8	58.6
FS Inspire Wheat	12	FS Inspire 747	90.8	12.0	58.4
Virginia Tech	13	17VTK4-29	90.8	12.1	56.6
Mid-Atlantic Seeds	14	MAS 2	90.1	12.2	60.9
USG	15	3352	89.9	11.7	59.2
VCIA	16	VT Pitman	89.4	11.7	60.3
Dyna-Gro	17	9172	89.1	11.9	58.7
Dyna-Gro	18	9290	89.1	11.7	59.0
AgriMAXX Wheat	19	505	89.0	11.8	61.2
MBX	20	MBX 223	88.4	11.9	58.7
USG	21	3354	87.8	12.5	56.5
MBX	22	MBX 230	87.7	11.9	60.0

MBX	23	MBX 127	87.5	11.9	58.6
EPIX SEED	24	EPIX 1375	87.3	11.8	60.1
Revere Seed	25	2347	86.6	11.8	59.7
AgriMAXX Wheat	26	Exp. 2404	86.2	12.0	59.4
Mid-Atlantic Seeds	27	MAS 139	86.1	11.9	57.9
AgriMAXX Wheat	28	545	85.3	11.9	58.0
USG	29	3673	85.2	12.1	57.3
Dyna-Gro	30	9422	84.9	12.0	58.5
Virginia Tech	31	VA19W-29	84.0	11.9	58.8
Mid-Atlantic Seeds	32	MAS 67	83.5	11.9	56.7
Agripro	33	Agripro GP543	82.8	12.4	56.7
Dyna-Gro	34	9570	82.2	11.9	57.5
Dyna-Gro	35	9231	82.0	12.0	59.7
Virginia Tech	36	15VTK-1-101	81.3	11.6	60.1
Elite Pro Wheat	37	EP-Exp. 01	81.3	11.7	59.6
Mid-Atlantic Seeds	38	MAS 316	81.0	11.4	58.9
Dyna-Gro	39	9151	80.3	11.6	60.8
EPIX SEED	40	EPIX 4372	80.1	11.8	58.7
Mid-Atlantic Seeds	41	MAS 189	79.7	11.7	60.3
EPIX SEED	42	EPIX 4480	79.4	12.0	59.6
USG	43	3884	79.2	12.1	57.7
Dyna-Gro	44	9393	78.9	12.2	59.3
EPIX SEED	45	EPIX 1365	78.6	11.6	57.6
Elite Pro Wheat	46	EP 2202	78.4	12.0	57.6

Revere Seed	47	2169	77.6	12.0	58.3
Mid-Atlantic Seeds	48	MAS 86	77.6	12.0	57.9
MBX	49	MBX 120	77.3	12.0	59.2
Mid-Atlantic Seeds	50	MAS 155	77.3	12.0	58.5
Dyna-Gro	51	9533	77.2	11.9	57.0
AgriMAXX Wheat	52	544	77.2	12.1	58.3
Dyna-Gro	53	9593	77.0	11.9	58.0
FS Inspire Wheat	54	FS Inspire 743	76.5	12.0	59.3
AgriMAXX Wheat	55	535	76.2	11.9	60.2
Mid-Atlantic Seeds	56	MAS 133	76.0	11.9	57.1
USG	57	3363	75.9	12.0	59.7
Revere Seed	58	2277	75.4	12.0	59.2
Mid-Atlantic Seeds	59	MAS 178	74.1	12.0	57.1
Mid-Atlantic Seeds	60	MAS 190	72.4	12.3	58.9
AgriMAXX Wheat	61	516	67.5	11.9	58.1
Bolded varieties do not statistically differ from top yielding variety				LSD P=.05	13.29
All yield data adjusted to 13.5% moisture				CV	8.1
				Mean	84.3

2024 Selbyville Wheat Variety Trial

<u>Brand</u>	<u>Rank</u>	<u>Variety</u>	<u>Yield (Bu)</u>	Moisture (Harvest)	<u>Test Weight</u>
Mid-Atlantic Seeds	1	MAS 228	90.7	13.0	59.1
EPIX SEED	2	EPIX 1365	83.5	12.6	57.7
FS Inspire Wheat	3	FS Inspire 745	82.9	12.8	59.2
USG	4	3363	81.8	12.9	59.3
MBX	5	MBX 223	79.8	12.9	57.9
Dyna-Gro	6	9172	78.7	12.9	58.3
Dyna-Gro	7	9393	78.5	13.0	59.2
MBX	8	MBX 230	77.5	13.0	59.8
Mid-Atlantic Seeds	9	MAS 67	77.0	12.7	57.1
AgriMAXX Wheat	10	544	76.8	13.0	58.7
Revere Seed	11	2347	76.5	13.3	58.7
AgriMAXX Wheat	12	505	76.5	12.8	59.8
USG	13	3329	76.3	13.4	57.6
USG	14	3673	76.2	12.7	55.8
Mid-Atlantic Seeds	15	MAS 139	76.0	13.1	57.6
Agripro	16	Agripro GP543	75.8	13.9	56.3
Mid-Atlantic Seeds	17	MAS 178	75.1	13.5	56.7
Revere Seed	18	2277	74.8	13.6	58.7
Mid-Atlantic Seeds	19	MAS 189	74.5	12.6	60.9
Dyna-Gro	20	9290	74.1	13.0	59.4
Elite Pro Wheat	21	EP-Exp. 01	73.7	13.2	59.2
USG	22	3884	73.6	13.8	57.8

Revere Seed	23	2169	73.3	12.5	58.7
EPIX SEED	24	EPIX 3489	73.1	13.2	59.1
USG	25	3354	73.1	14.2	56.4
Mid-Atlantic Seeds	26	MAS 86	73.1	13.4	57.6
FS Inspire Wheat	27	FS Inspire 747	72.0	13.7	59.8
USG	28	3352	71.9	13.1	58.8
USG	29	3661	71.9	13.0	59.2
MBX	30	MBX 127	71.5	13.1	59.0
Virginia Tech	31	15VTK-1-101	71.5	15.4	58.4
Elite Pro Wheat	32	EP-Exp. 02	71.5	13.2	58.8
Dyna-Gro	33	9151	71.2	12.7	60.5
Mid-Atlantic Seeds	34	MAS 106	71.1	13.1	58.8
Virginia Tech	35	VA19W-29	71.0	12.8	59.5
Dyna-Gro	36	9533	70.9	13.1	54.6
MBX	37	MBX Exp. 360	70.8	12.5	57.3
EPIX SEED	38	EPIX 1375	70.2	13.1	60.7
VCIA	39	VT Pitman	69.8	13.3	59.8
EPIX SEED	40	EPIX 4480	69.8	14.2	58.4
Mid-Atlantic Seeds	41	MAS 316	69.0	12.9	57.2
Mid-Atlantic Seeds	42	MAS 133	68.6	13.4	55.9
Mid-Atlantic Seeds	43	MAS 190	68.1	14.0	57.6
Dyna-Gro	44	9570	66.9	13.1	57.9
Mid-Atlantic Seeds	45	MAS 2	66.9	15.0	58.6
Virginia Tech	46	17VTK4-29	66.8	13.4	55.4

Dyna-Gro	47	9422	65.6	12.9	57.8
Elite Pro Wheat	48	EP 2202	65.5	13.7	57.8
EPIX SEED	49	EPIX 4372	65.3	13.0	59.2
MBX	50	MBX 120	65.2	13.7	57.9
AgriMAXX Wheat	51	513	65.2	12.6	59.8
AgriMAXX Wheat	52	535	65.0	13.8	59.5
AgriMAXX Wheat	53	516	64.9	13.2	58.6
Mid-Atlantic Seeds	54	MAS 155	64.9	13.4	57.8
AgriMAXX Wheat	55	Exp. 2404	64.8	14.0	57.4
Mid-Atlantic Seeds	56	MAS 225	64.7	14.0	57.8
Dyna-Gro	57	9593	64.3	13.3	58.4
Dyna-Gro	58	9231	64.0	13.1	59.3
FS Inspire Wheat	59	FS Inspire 743	63.6	13.2	59.0
EPIX SEED	60	EPIX 3498	63.3	13.9	58.0
AgriMAXX Wheat	61	545	62.6	12.8	58.0
Bolded varieties do not statistically differ from top yielding variety				LSD P=.05	13.21
All yield data adjusted to 1	All yield data adjusted to 13.5% moisture			CV	9.8
				Mean	71.7

2024 Middletown Wheat Variety Trial

<u>Brand</u>	<u>Rank</u>	<u>Variety</u>	<u>Yield (Bu)</u>	Moisture (Harvest)	Test Weight
FS Inspire Wheat	1	FS Inspire 747	117.6	11.9	59.3
USG	2	3673	113.7	12.1	58.0
Dyna-Gro	3	9533	113.5	11.9	58.2
AgriMAXX Wheat	4	545	113.5	11.7	58.3
USG	5	3363	113.2	11.6	60.0
USG	6	3354	113.0	12.1	57.4
Mid-Atlantic Seeds	7	MAS 225	112.5	11.9	57.0
Dyna-Gro	8	9231	109.9	11.5	59.6
Dyna-Gro	9	9422	109.9	11.8	57.7
AgriMAXX Wheat	10	Exp. 2404	107.9	11.6	57.0
AgriMAXX Wheat	11	516	107.1	11.9	59.0
EPIX SEED	12	EPIX 3489	107.0	11.6	58.7
Mid-Atlantic Seeds	13	MAS 106	106.8	11.7	60.6
Dyna-Gro	14	9570	106.6	11.7	58.1
EPIX SEED	15	EPIX 4480	106.5	11.4	57.3
AgriMAXX Wheat	16	505	106.3	11.8	59.4
Elite Pro Wheat	17	EP-Exp. 01	106.1	11.7	59.9
MBX	18	MBX 230	106.0	12.0	59.6
Agripro	19	Agripro GP543	106.0	12.1	57.4
Mid-Atlantic Seeds	20	MAS 155	106.0	11.8	57.4
AgriMAXX Wheat	21	544	105.3	12.0	59.9
Mid-Atlantic Seeds	22	MAS 86	105.1	12.1	58.3

USG	23	3884	104.5	11.9	57.5
Revere Seed	24	2347	104.0	12.1	59.6
Mid-Atlantic Seeds	25	MAS 228	104.0	11.8	57.8
MBX	26	MBX Exp. 360	103.7	11.5	58.6
AgriMAXX Wheat	27	513	103.6	11.8	59.7
Dyna-Gro	28	9593	103.4	11.9	57.2
USG	29	3661	103.4	11.8	57.3
Virginia Tech	30	17VTK4-29	103.3	12.3	57.2
EPIX SEED	31	EPIX 3498	102.8	12.0	57.2
EPIX SEED	32	EPIX 1365	102.5	11.5	56.6
Dyna-Gro	33	9151	102.0	11.6	60.9
Mid-Atlantic Seeds	34	MAS 190	101.8	12.0	56.6
USG	35	3352	101.4	12.2	56.8
FS Inspire Wheat	36	FS Inspire 743	101.2	11.8	59.4
Revere Seed	37	2169	101.1	11.9	59.3
MBX	38	MBX 127	100.8	11.8	59.2
Mid-Atlantic Seeds	39	MAS 178	100.8	12.1	56.0
MBX	40	MBX 120	100.0	11.8	58.8
USG	41	3329	99.8	11.8	57.1
Mid-Atlantic Seeds	42	MAS 67	99.6	11.9	58.4
FS Inspire Wheat	43	FS Inspire 745	98.9	11.7	59.6
MBX	44	MBX 223	97.7	11.6	57.8
Dyna-Gro	45	9290	97.2	11.6	58.2
Revere Seed	46	2277	96.9	11.7	58.0

Elite Pro Wheat	47	EP 2202	96.8	11.2	56.6
Dyna-Gro	48	9393	96.3	12.2	56.5
Elite Pro Wheat	49	EP-Exp. 02	96.3	11.8	57.4
Dyna-Gro	50	9172	96.2	11.9	58.0
Mid-Atlantic Seeds	51	MAS 316	96.1	11.4	57.4
EPIX SEED	52	EPIX 1375	95.6	11.8	58.5
Mid-Atlantic Seeds	53	MAS 2	94.9	12.1	60.6
EPIX SEED	54	EPIX 4372	93.1	12.1	58.9
AgriMAXX Wheat	55	535	92.4	12.1	57.2
VCIA	56	VT Pitman	88.2	12.2	57.0
Virginia Tech	57	VA19W-29	87.4	12.1	56.2
Mid-Atlantic Seeds	58	MAS 189	86.4	11.8	58.9
Mid-Atlantic Seeds	59	MAS 139	83.8	12.2	56.0
Mid-Atlantic Seeds	60	MAS 133	81.7	12.2	56.3
Virginia Tech	61	15VTK-1-101	79.0	12.1	56.7
Bolded varieties do not statistically differ from top yielding variety				LSD P=.05	10.23
All yield data adjusted to 13.5% moisture				CV	7.21
				Mean	101.6

<u>Brand</u>	<u>Rank</u>	<u>Variety</u>	<u>Yield (Bu)</u>	Moisture (Harvest)	Test Weight	Height (in)	Lodging
VCIA	1	Marouetta	173.9	13.1	48.8	26	1
VCIA	2	Hirondella	165.3	13.2	48.3	26	1
VCIA	3	Secretariat	164.0	13.3	47.8	25	1
VCIA	4	Avalon	149.8	13.1	47.9	25	1
Limagrain Seeds	5	Fay	149.0	13.4	47.1	21	1
VCIA	6	VT Beahm	145.9	13.0	46.9	25	1
VCIA	7	Flavia	138.6	13.1	46.2	23	1
Proximity Malt	8	DH170472	137.5	12.8	46.5	26	1
Proximity Malt	9	DH162310	136.6	13.2	46.7	24	1
VCIA	10	20211573	134.6	18.0	46.7	26	1
Limagrain Seeds	11	Clementine	131.7	13.5	46.9	25	1

2024 Georgetown Barley Variety Trial

Bolded varieties do not statistically differ from top yielding variety			9.47
All yield data adjusted to 13.5% moisture	Lodging Scale	CV	4.43
1= Almost all plants erect		Mean	147.9
	2= All plants leaning slightly or a few plants down		
	3 = All plants leaning moderately (45 degree angle), or		

25-50% of plants down

4= All plants leaning considerably, or 50-80% of plants down