

# 2021 SPRING SEED GUIDE

Brought to you by the  
University of Nebraska Variety  
Testing Program

- University of Nebraska - Lincoln Extension
- Institute of Agriculture and Natural Resources
- Department of Agronomy & Horticulture



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# UNL EXTENSION CIRCULAR 101

## SPRING SEED GUIDE

- January 2021 -

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## WELCOME TO THE 2021 SPRING SEED GUIDE

The following pages include the results of our variety testing programs for many crop species throughout the state. We hope you find this information useful as you make hybrid and variety decisions for next spring.

Much of the information included in this publication is also available electronically. The individual variety test locations can be accessed at <https://cropwatch.unl.edu/varietytest>. Several NebGuides have been written to help producers to use this information for planting decisions. These are available at <https://extensionpubs.unl.edu/>.

Please visit our web site at <https://cropwatch.unl.edu/varietytest> for all the information you need on variety testing.

Cody Creech

University of Nebraska-Lincoln

### ACKNOWLEDGMENTS

This circular is a progress report of variety performance trials conducted by personnel of the Agronomy Department, West Central, and Panhandle Extension Centers, and their associated agricultural laboratories. Conduct of experiments and publication of results is a joint effort of the Agricultural Research Division and the Cooperative Extension Service. Entries include commercial varieties from Nebraska, surrounding states, and private breeders. Fees paid by commercial seed companies partially supported the tests reported in this report.

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# NEBRASKA CORN HYBRID TRIALS

- 2020 -

## CROP PRODUCTION SUMMARY

According to the National Agricultural Statistics Service, corn was planted on 10.2 million acres in Nebraska in 2020. There were 9.83 million acres of corn harvested in Nebraska in 2020 producing approximately 1.84 billion bushels of grain. The average corn yield for Nebraska in 2020 was 187 bushels per acre (bu/a). Average corn yields from the previous 10 years are reported below.

### Average Nebraska Corn Yield (all practices)

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Yield (bu/a)	166	160	142	169	179	185	178	181	192	182	187
NE Total Production (billion bu)	1.47	1.54	1.29	1.61	1.60	1.69	1.70	1.68	1.79	1.79	1.84

Source: National Agricultural Statistics Service (<http://www.nass.usda.gov>)

Rainfall in the state varied at locations across Nebraska. Severe weather played a big role in the growing season as precipitation at the Saunders and Cheyenne sites was 54-60% below the 10-year average and so were hit hard by drought conditions. Detailed information regarding crop progress and history can be obtained from the National Agricultural Statistics Service available online at <http://www.nass.usda.gov>.

## PROCEDURE

Six corn performance trials were planted throughout Nebraska in 2020. Corn trials are conducted to provide yield and other information about corn hybrids available to corn growers in Nebraska. A fee from seed companies covers a portion of the cost of each test. Entry was on a voluntary basis and hybrids were selected by seed producers. Some hybrids are being tested by companies specifically for adaptation and may result in low yields. Cultural practices were adapted to accommodate all entries including several conventional hybrids limiting the use of certain herbicides.

Individual plots are two rows wide and range from 25 to 35 feet long. Seeding rates varied with location but within each test location, the same number of seeds were planted for all hybrids. The plant population represents the average harvested plant density. Grain yields are expressed on a 15.5% moisture basis. Yields shown are averages of four or more replicated plots at each location. Plots were machine harvested and grain moisture determinations were made with an electronic moisture meter or moisture sensors on the combine.

Variations in soil fertility, moisture conditions, and other factors are found in each test area. We make every effort to remove the variability by blocking and using other experimental design methods. We also use statistical procedures to remove a portion of the spatial variability. However, some variability remains which makes it impossible to measure yielding ability of hybrids with absolute accuracy. For this reason, small yield differences have little meaning. Unless the difference in performance of two varieties is greater than the difference required for least significance difference (LSD) shown in the tables, little confidence can be placed in the superiority of one variety over the other for measured traits in that particular test. These differences are shown at the 10% level, meaning that differences as large or larger could be expected through chance alone in 1 of 10 trials (10%).

In these experiments, many hybrids statistically had the same grain production. Performances of hybrids vary with seasonal conditions. Great care should be used in interpreting the results of a single year test. Earlier maturing hybrids are favored in some seasons while later ones perform best in other years. In addition, some hybrids are able to withstand unfavorable weather conditions better than others which may do well under ideal growing conditions. Performance over a period of years should give a much better measure of adaptation whenever available. Harvest moisture, stalk strength, and resistance to insect and disease also are factors which must be considered in selecting hybrids.



Relative hybrid performance often varies with locations within zones. In zone analysis, the hybrid by location mean square was used to calculate the differences required for significance shown in the tables. Moisture at harvest is an important consideration in hybrid selection as it does affect time of harvest and drying costs.

## RESULTS AT INDIVIDUAL LOCATIONS

Site specific management, soil type, and previous crops are shown in Table B.

### **Southeast and South Central District:**

#### **Rainfed tests were planted in Saunders and Clay Counties.**

- The Saunders County rainfed test was planted on May 1st and harvested on October 8th, with an average yield of 78 bu/a..
- The Clay County rainfed test was planted on April 29th and harvested on October 9th with an average yield of 114 bu/a.

#### **Irrigated test was planted in Clay County.**

- The Clay County irrigated test was planted on April 29th and harvested on October 9th with an average yield of 249 bu/a.

### **West Central and West:**

#### **Rainfed tests were planted in Cheyenne and Perkins Counties.**

- The Cheyenne County rainfed test was planted on June 7th and harvested on October 2nd, with an average yield of 29 bu/a.
- The Perkins County rainfed test was planted on June 8th and harvested on October 24th with an average yield of 61 bu/a.

#### **Irrigated test was planted in Perkins County.**

- The Perkins County irrigated test was planted on June 8th and harvested on October 24th with an average yield of 178 bu/a.

## CULTURAL PRACTICES

**Saunders County Rainfed:** Previous crop: Soybeans; Disked; Fertilizer: 175 lb/a N on April 1; Herbicide: Lotus 2 oz/a & 0.5 pt/a atrazine.

**Clay County Rainfed:** Previous Crop: Wheat; No-till; Fertilizer: 56.5 gal/a 32-0-0; Herbicide: 22 oz/a Roundup PowerMax, 16 oz/a Verdict, 1 qt/a atrazine.

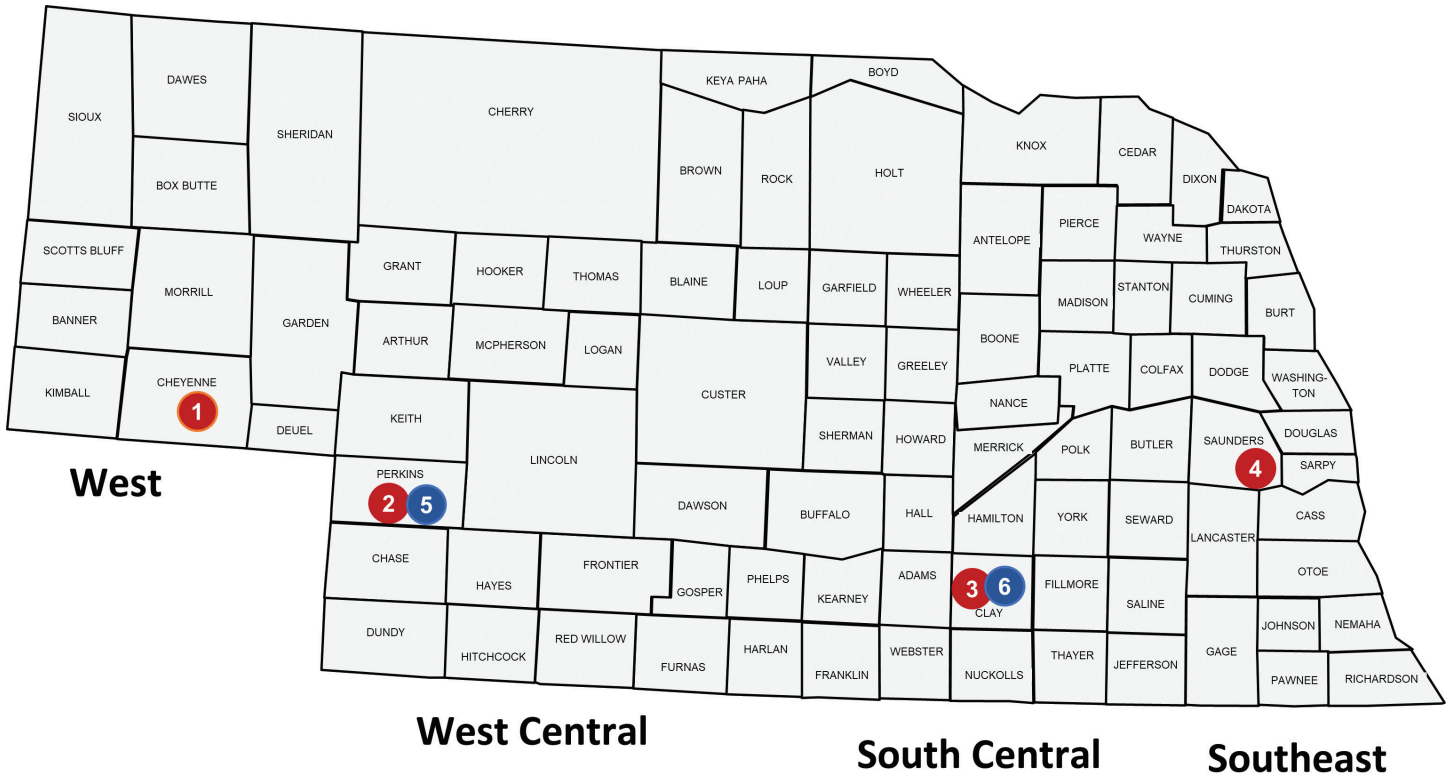
**Clay County Irrigated:** Previous Crop: Soybean; No-till; Fertilizer: 180 lb/a N as anhydrous ammonia; Herbicide: 22 oz/a Roundup PowerMax, 16 oz/a Verdict, 1 qt/a atrazine.

**Cheyenne County Rainfed:** Previous crop: Wheat; No-till; Fertilizer: 95 lb/a N; Herbicide: 2 qt/a Warrant.

**Perkins County Rainfed:** Previous crop: Wheat; No-till; Fertilizer: 40 gal/a 28-0-0-5 sidedressed in June; Herbicide: 1 oz/a Accent Q, 48 oz/a Atrazine, 32 oz/a Brawl 2, 3 oz/a Incinerate, 12 oz/a Dicamba, 6 oz/a Preference.

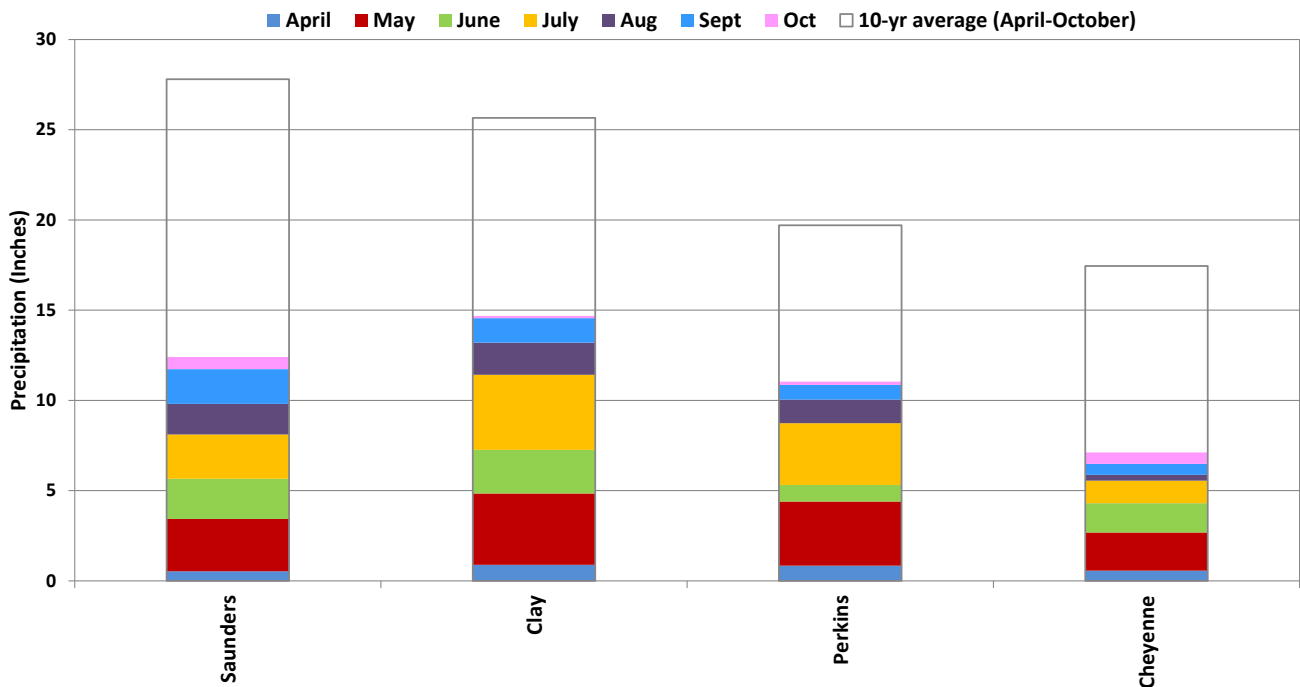
**Perkins County Irrigated:** Previous crop: Peas/Forage sorghum; Strip-till; Fertilizer: 20 gal/a 32% UAN striptilled, 40 gal/a 28-0-0-5 sidedressed in June; Herbicide: 1 oz/a Accent Q, 48 oz/a Atrazine, 32 oz/a Brawl 2, 3 oz/a Incinerate, 12 oz/a Dicamba, 6 oz/a Preference.

# 2020 CORN HYBRID TRIAL LOCATIONS MAP



● Rainfed Sites      ● Irrigated Sites

## 2020 CORN TRIAL SITE PRECIPITATION (inches)



**TABLE A. LOCATIONS, COOPERATORS, PLANTING AND HARVEST DATES OF NEBRASKA CORN TRIAL PLOTS**

Location	Cooperator	Condition	Latitude	Longitude	Planted	Harvested
<b>Southeast and South Central</b>						
Saunders County	UNL ARDC; Ithaca, NE	Rainfed	41.158546	-96.414108	5/1/2020	10/8/2020
Clay County	South Central Research & Extension Center; Harvard, NE	Rainfed	40.572301	-98.129605	4/29/2020	10/9/2020
Clay County	South Central Research & Extension Center; Harvard, NE	Irrigated	40.573653	-98.134205	4/29/2020	10/9/2020
<b>West Central and West</b>						
Perkins County	UNL Stumpf International Wheat Center; Grant, NE	Rainfed	40.845410	-101.705448	5/4/2020	10/8/2020
Perkins County	UNL Stumpf International Wheat Center; Grant, NE	Irrigated	40.853513	-101.703000	5/4/2020	10/24/2020
Cheyenne County	UNL High Plains Ag Lab; Sidney, NE	Rainfed	41.241710	-102.993875	5/7/2020	10/2/2020

**TABLE B. SOIL TYPE AND CULTURAL PRACTICES AT CORN TRIAL SITES**

Location	Soil Series	Tillage System	Previous Crop	Fertilizer	Herbicide
<b>Southeast and South Central</b>					
Saunders Rainfed	Yutan silty clay loam	Disked	Soybeans	175 lb/a liquid N	Lotus 2 oz/a & 0.5 pt/a atrazine
Clay Rainfed	Crete silt loam	No-till	Wheat	200 lb/a N as 32-0-0	22 oz/a Roundup PowerMax, 16 oz/a Verdict, 1 qt/a atrazine
Clay Irrigated	Crete silt loam	No-till	Soybeans	180 lb/a N Anhydrous Ammonia	22 oz/a Roundup PowerMax, 16 oz/a Verdict, 1 qt/a atrazine
<b>West Central and West</b>					
Perkins Rainfed	Mace silt & Rosebud-Canyon loams	No-till	Wheat	124 lb/a N, 22 lb/a S as 28-0-0-5 sidedressed on June 12	1 oz/a Accent Q, 48 oz/a Atrazine, 32 oz/a Brawl 2, 3 oz/a Incinerate, 12 oz/a Dicamba, 6 oz/a Preference
Perkins Irrigated	Kuma silt loam	Strip-till	Peas/ Forage Sorghum	70 lb/a N 32% UAN striptilled, 124 lb/a N, 22 lb/a S 28-0-0-5 sidedressed June 12	1 oz/a Accent Q, 48 oz/a Atrazine, 32 oz/a Brawl 2, 3 oz/a Incinerate, 12 oz/a Dicamba, 6 oz/a Preference
Cheyenne Rainfed	Alliance loam	No-till	Wheat	95 lbs/a Nitrogen 32 0-0	2 qt/a Warrant



## TABLE C. AVERAGE CORN PERFORMANCE SUMMARY

Location	Average Yield (bu/a, 15.5%)	Yield LSD	Top Yield (bu/ac)	Bushel Weight (lb/bu)	Ear Height (in)	Average Emergence (%)
<b>Southeast and South Central</b>						
Saunders Rainfed	77.5	14.4	96.8	56.1	34.8	82.6
Clay Rainfed	113.7	16.1	124.8	57.3	34.8	91.3
Clay Irrigated	248.8	21.6	292.5	57.2	43.8	98.1
<b>West Central and West</b>						
Perkins Rainfed	61.3	6.7	68.7	54.0	23.1	90.7
Perkins Irrigated	177.6	30.5	212.8	57.6	32.0	88.8
Cheyenne Rainfed	29.2	7.7	40.0	54.8	25.6	92.7

## TABLE D. CORN ENTRANT CONTACT AND HYBRID OVERVIEW

Entrant	Contact	Phone	Hybrids Entered
<b>Channel Seed</b> channel.com			193-53 VT2 RIB, 194-49 DGVT2 RIB, 197-66 VT2 RIB
<b>Dyna-Gro Seed</b> PO Box 2050 1720 16th Ave Kearney, NE 68848 dynagroseed.com	Dave Welch	308-237-5194	D40VC41, D43SS81, D48QV22, D51VC41, D52SS91, D52DC82, D53VC33, D54SS74, D54VC14, D54VC34, D57VC17, D58SS65
<b>FBN Seed</b>			A9436VT2P, A9567VT2P, MBZ-C939
<b>Hi Fidelity Genetics</b> 326 West Geer St. Durham, NC 27701 hifidelitygenetics.com	Rachel Greenhut	530-574-3135	HFG1071, HFG1091, HFG1111, HFG1142
<b>Prairie Hybrids</b> 27445 Hurd Rd. Deer Grove, IL 61243 prairiehybrids.com	Rodney Hostetler	815-438-7815	4850, 6590, 6878, 8229, 8290, 8759, 5141ORG, 6341ORG

## TABLE E. CORN ENTRANT BRAND AND HYBRID DETAILS

Brand	Hybrid	Growing Degree Days	Days to Maturity	Technology/Trait	Herbicide Resistance	Other Information
Channel Seed	193-53 VT2 RIB		93	VT2 Pro	Glyphosate	
Channel Seed	194-49 DGVT2 RIB		94	DroughtGard/VT2 Pro	Glyphosate	
Channel Seed	197-66 VT2 RIB		97	VT2 Pro	Glyphosate	
Dyna-Gro Seed	D40VC41	2320	100	VT2 Pro	Glyphosate	
Dyna-Gro Seed	D43SS81	2470	103	SmartStax	Glyphosate/Liberty	
Dyna-Gro Seed	D48QV22	2590	108	3330 EZ Vip	Glyphosate	
Dyna-Gro Seed	D51VC41	2640	111	VT2 Pro	Glyphosate	
Dyna-Gro Seed	D52DC82	2680	112	DroughtGard/VT2 Pro	Glyphosate	
Dyna-Gro Seed	D52SS91	2700	112	SmartStax	Glyphosate/Liberty	
Dyna-Gro Seed	D53VC33	2700	113	VT2 Pro	Glyphosate	
Dyna-Gro Seed	D54SS74	2740	114	SmartStax	Glyphosate/Liberty	
Dyna-Gro Seed	D54VC14	2710	114	VT2 Pro	Glyphosate	
Dyna-Gro Seed	D54VC34	2720	114	VT2 Pro	Glyphosate	
Dyna-Gro Seed	D57VC17	2840	117	VT2 Pro	Glyphosate	
Dyna-Gro Seed	D58SS65	2830	118	SmartStax	Glyphosate/Liberty	
FBN Seed	A9436VT2P		94	VT2 Pro	Glyphosate	
FBN Seed	A9567VT2P		95	VT2 Pro	Glyphosate	
FBN Seed	MBZ-C939		93	AgrisureViptera 3220	Glyphosate/Liberty	
Hi Fidelity Genetics	HFG1071		107	CM250	conventional	
Hi Fidelity Genetics	HFG1091		109	TBD	conventional	
Hi Fidelity Genetics	HFG1111		111	TBD	conventional	
Hi Fidelity Genetics	HFG1142		114	A500V	conventional	
Prairie Hybrids	4850	2675	107	none	none	
Prairie Hybrids	5141ORG	2745	108	none	none	
Prairie Hybrids	6341 ORG	2765	111	none	none	
Prairie Hybrids	6590	2700	111	none	none	
Prairie Hybrids	6878	2700	112	none	none	
Prairie Hybrids	8229	2825	114	none	none	
Prairie Hybrids	8290	2825	114	none	none	
Prairie Hybrids	8759	2855	114	none	none	

## SAUNDERS COUNTY DRYLAND CORN HYBRID TRIAL - 2020

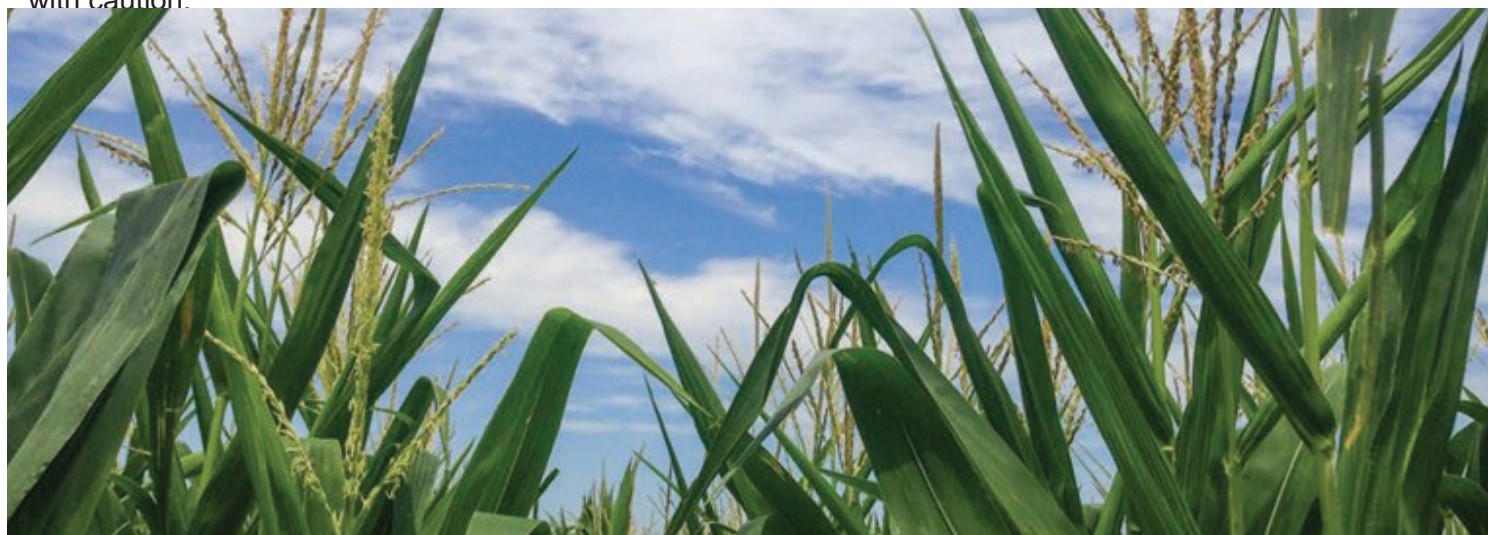
Hybrid	Brand	Emergence (%) <sup>[1]</sup>	Average Yield (bu/a) <sup>[2]</sup>	Bushel Weight (lb/bu)	Average Ear Height (in)
D54VC34	Dyna-Gro Seed	83.9	96.8	56.2	36.5
D54VC14	Dyna-Gro Seed	88.2	90.1	57.7	35.5
6590	Prairie Hybrids	90.2	86.6	55.9	33.7
D53VC33	Dyna-Gro Seed	88.8	80.1	56.0	35.4
96 Day Maturity Check	NA	87.5	78.1	55.9	32.6
8290	Prairie Hybrids	74.1	76.5	58.3	36.2
D52DC82	Dyna-Gro Seed	79.8	74.3	54.7	37.5
5141 ORG	Prairie Hybrids	78.5	73.5	54.3	34.2
4850	Prairie Hybrids	80.9	72.5	57.6	36.3
6341 ORG	Prairie Hybrids	81.0	72.3	55.8	38.0
93 Day Maturity Check	NA	82.3	71.3	54.7	30.6
D52SS91	Dyna-Gro Seed	75.6	58.4	56.6	30.5
<b>Average of all entries</b>		<b>82.6</b>	<b>77.5</b>	<b>56.1</b>	<b>34.8</b>
<b>Standard error</b>		<b>5.8</b>	<b>8.6</b>	<b>0.8</b>	<b>1.3</b>
<b>LSD [3]</b>		<b>9.8</b>	<b>14.4</b>	<b>1.3</b>	<b>2.1</b>
<b>Coefficient of variation [4]</b>		<b>7.0</b>	<b>11.1</b>	<b>1.4</b>	<b>3.7</b>
<b>Replicates</b>		<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>

[1] Germination calculated based on final stand count relative to number of seeds planted per plot. Emergence and stand were affected by ground squirrel damage.

[2] Yield adjusted to 15.5% moisture and assuming 56 lb/bu test weight.

[3] For differences between varieties that are equal to or greater than the LSD value, the chance that the difference is significant is 90%.

[4] Coefficient of Variation (CV) indicates the quality of a trial, and lower than 15 indicates a high quality trial. For CV>15, there was higher than expected variability in the field or the data and the results should be used with caution.





## CLAY COUNTY DRYLAND CORN HYBRID TRIAL - 2020

Hybrid	Brand	Emergence (%) [1]	Average Yield (bu/a) [2]	Bushel Weight (lb/bu)	Average Ear Height (in)
8290	Prairie Hybrids	94.6	124.8	60.3	38.1
D51VC41	Dyna-Gro Seed	95.9	121.5	55.9	33.1
D48QV22	Dyna-Gro Seed	90.5	121.1	56.8	36.2
8759	Prairie Hybrids	92.1	119.4	55	39.9
D52DC82	Dyna-Gro Seed	84.4	118.3	56.7	37.8
D43SS81	Dyna-Gro Seed	90.2	112.1	58.7	32.1
D52SS91	Dyna-Gro Seed	92.2	105.1	59	31.1
93 Day Maturity Check	NA	90.5	87.2	56.2	29.8
<b>Average of all entries</b>		<b>91.3</b>	<b>113.7</b>	<b>57.3</b>	<b>34.8</b>
<b>Standard error</b>		<b>2.2</b>	<b>9.5</b>	<b>0.6</b>	<b>0.9</b>
<b>LSD [3]</b>		<b>3.8</b>	<b>16.1</b>	<b>1.0</b>	<b>1.5</b>
<b>Coefficient of variation [4]</b>		<b>2.4</b>	<b>8.4</b>	<b>1.0</b>	<b>2.6</b>
<b>Replicates</b>		<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>

[1] Germination calculated based on final stand count relative to number of seeds planted per plot.

[2] Yield adjusted to 15.5% moisture and assuming 56 lb/bu test weight.

[3] For differences between varieties that are equal to or greater than the LSD value, the chance that the difference is significant is 90%.

[4] Coefficient of Variation (CV) indicates the quality of a trial, and lower than 15 indicates a high quality trial. For CV>15, there was higher than expected variability in the field or the data and the results should be used with caution.



## PERKINS COUNTY DRYLAND CORN HYBRID TRIAL - 2020

Hybrid	Brand	Average Yield (bu/a)[1]	Bushel Weight (lb/bu)	Average Ear Height (in)
D43SS81	Dyna-Gro Seed	68.7	56.3	21.4
D52DC82	Dyna-Gro Seed	67.3	54.3	25.4
HFG1091	Hi Fidelity Genetics	64.1	52.6	27.5
D52SS91	Dyna-Gro Seed	63.5	53.9	21.1
HFG1111	Hi Fidelity Genetics	60.8	50.3	24.9
D48QV22	Dyna-Gro Seed	59.4	53.6	26.4
96 Day Maturity Check	NA	58.6	56.4	19.0
D51VC41	Dyna-Gro Seed	57.5	52.8	23.0
93 Day Maturity Check	NA	57.0	54.8	20.1
HFG1071	Hi Fidelity Genetics	56.2	55.6	22.4
<b>Average of all entries</b>		<b>61.3</b>	<b>54</b>	<b>23.1</b>
<b>Standard error</b>		<b>3.9</b>	<b>0.5</b>	<b>1.0</b>
<b>LSD [2]</b>		<b>6.7</b>	<b>0.8</b>	<b>1.7</b>
<b>Coefficient of variation [3]</b>		<b>6.4</b>	<b>0.9</b>	<b>4.3</b>
<b>Replicates</b>		<b>5</b>	<b>5</b>	<b>5</b>

[1] Yield adjusted to 15.5% moisture and assuming 56 lb/bu test weight.

[2] For differences between varieties that are equal to or greater than the LSD value, the chance that the difference is significant is 90%.

[3] Coefficient of Variation (CV) indicates the quality of a trial, and lower than 15 indicates a high quality trial. For CV>15, there was higher than expected variability in the field or the data and the results should be used with caution.





# CHEYENNE COUNTY DRYLAND CORN HYBRID TRIAL - 2020

Hybrid	Brand	Emergence (%) [1]	Average Yield (bu/a) [2]	Bushel Weight (lb/bu)	Average Ear Height (in)
197-66 VT2 RIB	Channel Seed	93.7	40.0	56.5	25.1
A9436VT2P	FBN Seed	92.5	33.8	55.5	26.3
193-53 VT2 RIB	Channel Seed	89.8	33.6	55.5	20.9
Regional Check	NA	89.5	33.3	55.9	24.5
194-49 DGVT2 RIB	Channel Seed	97.2	32.9	55.9	24.5
A9567VT2P	FBN Seed	94.5	31.7	55.2	24.9
D40VC41	Dyna-Gro Seed	96.8	30.7	56.3	25.9
MBZ-C939	FBN Seed	76.7	28.5	54.8	28.7
D43SS81	Dyna-Gro Seed	98.7	28.3	56.2	24.4
HFG1091	Hi Fidelity Genetics	98.4	24.3	50.5	28.6
HFG1071	Hi Fidelity Genetics	95.2	23.9	55.7	24.4
HFG1111	Hi Fidelity Genetics	91.0	23.2	53.9	26.9
D48QV22	Dyna-Gro Seed	91.4	15.3	50.8	27.1
<b>Average of all entries</b>		<b>92.7</b>	<b>29.2</b>	<b>54.8</b>	<b>25.6</b>
<b>Standard error</b>		<b>5.3</b>	<b>4.6</b>	<b>0.7</b>	<b>0.9</b>
<b>LSD [3]</b>		<b>8.9</b>	<b>7.7</b>	<b>1.3</b>	<b>1.6</b>
<b>Coefficient of variation [4]</b>		<b>5.7</b>	<b>15.8</b>	<b>1.3</b>	<b>3.5</b>
<b>Replicates</b>		<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>

[1] Germination calculated based on final stand count relative to number of seeds planted per plot.

[2] Yield adjusted to 15.5% moisture and assuming 56 lb/bu test weight.

[3] For differences between varieties that are equal to or greater than the LSD value, the chance that the difference is significant is 90%.

[4] Coefficient of Variation (CV) indicates the quality of a trial, and lower than 15 indicates a high quality trial. For CV>15, there was higher than expected variability in the field or the data and the results should be used with caution.





## CLAY COUNTY IRRIGATED CORN HYBRID TRIAL - 2020

Hybrid	Brand	Emergence (%) <sup>[1]</sup>	Average Yield (bu/a) <sup>[2]</sup>	Bushel Weight (lb/bu)	Average Ear Height (in)
HFG1142	Hi Fidelity Genetics	98.5	292.5	54.6	49.3
D54VC34	Dyna-Gro Seed	97.9	290.5	57.9	45.0
8759	Prairie Hybrids	96.8	284.7	54.5	50.0
D52DC82	Dyna-Gro Seed	94.7	269.3	57.1	47.3
8229	Prairie Hybrids	97.8	268.6	56.9	50.0
D54VC14	Dyna-Gro Seed	93.1	268.2	58.4	44.3
8290	Prairie Hybrids	99.5	261.2	57.6	47.8
HFG1111	Hi Fidelity Genetics	98.8	260.7	58.1	45.5
6590	Prairie Hybrids	99.1	256.7	57.5	46.0
D54SS74	Dyna-Gro Seed	98.9	255.3	57.3	43.0
6878	Prairie Hybrids	95.1	252.2	56.6	42.0
D48QV22	Dyna-Gro Seed	98.3	247.2	56.6	43.8
D52SS91	Dyna-Gro Seed	99.5	243.7	58.2	38.3
D51VC41	Dyna-Gro Seed	100.5	240.0	57.4	40.5
D57VC17	Dyna-Gro Seed	98.1	233.7	58.1	46.0
HFG1091	Hi Fidelity Genetics	99.8	231.4	56.0	43.5
D58SS65	Dyna-Gro Seed	99.4	229.4	57.5	41.0
D53VC33	Dyna-Gro Seed	98.3	225.8	57.5	46.3
96 Day Maturity Check	NA	98.8	191.1	59.0	33.0
93 Day Maturity Check	NA	98.7	172.9	57.6	34.8
<b>Average of all entries</b>		<b>98.1</b>	<b>248.8</b>	<b>57.2</b>	<b>43.8</b>
<b>Standard error</b>		<b>1.7</b>	<b>12.9</b>	<b>0.5</b>	<b>1.0</b>
<b>LSD [3]</b>		<b>2.8</b>	<b>21.6</b>	<b>0.8</b>	<b>1.7</b>
<b>Coefficient of variation [4]</b>		<b>1.7</b>	<b>5.2</b>	<b>0.9</b>	<b>2.3</b>
<b>Replicates</b>		<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>

[1] Germination calculated based on final stand count relative to number of seeds planted per plot.

[2] Yield adjusted to 15.5% moisture and assuming 56 lb/bu test weight.

[3] For differences between varieties that are equal to or greater than the LSD value, the chance that the difference is significant is 90%.

[4] Coefficient of Variation (CV) indicates the quality of a trial, and lower than 15 indicates a high quality trial. For CV>15, there was higher than expected variability in the field or the data and the results should be used with caution.

# PERKINS COUNTY IRRIGATED CORN HYBRID TRIAL - 2020

Hybrid	Brand	Final Stand (plants/acre)	Average Yield (bu/a)[1]	Bushel Weight (lb/bu)	Average Ear Height (in)
D51VC41	Dyna-Gro Seed	33,106	212.8	56.4	31.6
D48QV22	Dyna-Gro Seed	28,633	192.7	57.6	32.6
D43SS81	Dyna-Gro Seed	28,991	190.9	59.9	32.6
D52DC82	Dyna-Gro Seed	27,007	182.7	56.2	35.0
D54SS74	Dyna-Gro Seed	31,131	181.8	55.5	32.8
96 Day Maturity Check	NA	30,899	168.8	59.8	27.0
D53VC33	Dyna-Gro Seed	30,666	167.3	57.1	32.8
D52SS91	Dyna-Gro Seed	30,376	160.6	56.8	32.7
93 Day Maturity Check	NA	30,492	140.7	59.3	30.8
<b>Average of all entries</b>		<b>30,145</b>	<b>177.6</b>	<b>57.6</b>	<b>32.0</b>
<b>Standard error</b>		<b>1,310</b>	<b>18.0</b>	<b>0.7</b>	<b>1.6</b>
<b>LSD [2]</b>		<b>2,221</b>	<b>30.5</b>	<b>1.1</b>	<b>2.7</b>
<b>Coefficient of variation [3]</b>		<b>7.4</b>	<b>17.2</b>	<b>1.9</b>	<b>8.4</b>
<b>Replicates</b>		<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>

[1] Yield adjusted to 15.5% moisture and assuming 56 lb/bu test weight.

[2] For differences between varieties that are equal to or greater than the LSD value, the chance that the difference is significant is 90%.

[3] Coefficient of Variation (CV) indicates the quality of a trial, and lower than 15 indicates a high quality trial. For CV>15, there was higher than expected variability in the field or the data and the results should be used with caution.



# NEBRASKA SORGHUM VARIETY TRIALS

- 2020 -

## CROP PRODUCTION SUMMARY

According to the National Agricultural Statistics Service, 195 thousand acres of grain sorghum were planted in Nebraska in 2020. There were 135 thousand acres of grain sorghum harvested producing around 12.0 million bushels of grain. The average grain sorghum yield in Nebraska for 2020 was 89 bushels per acre (bu/a). The table below shows grain sorghum yields from the previous 10 years.

**Average Nebraska Grain Sorghum Yields (Last 10 Years)**

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Yield (bu/a)	90	96	59	67	82	96	102	89	94	93	89
NE Total Production (million bu)	7.2	8.6	3.5	9.7	13.1	23.0	17.9	11.6	16.0	12.1	12.0

Source: National Agricultural Statistics Service (<http://www.nass.usda.gov>)

Detailed information regarding crop progress and history can be obtained from the National Agricultural Statistics Service available online at <http://www.nass.usda.gov>.

## PROCEDURE

Four sorghum performance field trials were planted throughout Nebraska in 2020. Sorghum trials are conducted to provide yield and other information about sorghum hybrids available to sorghum growers in Nebraska. A fee from seed companies covers a portion of the cost of each test. Entry was on a voluntary basis and hybrids were selected by seed producers.

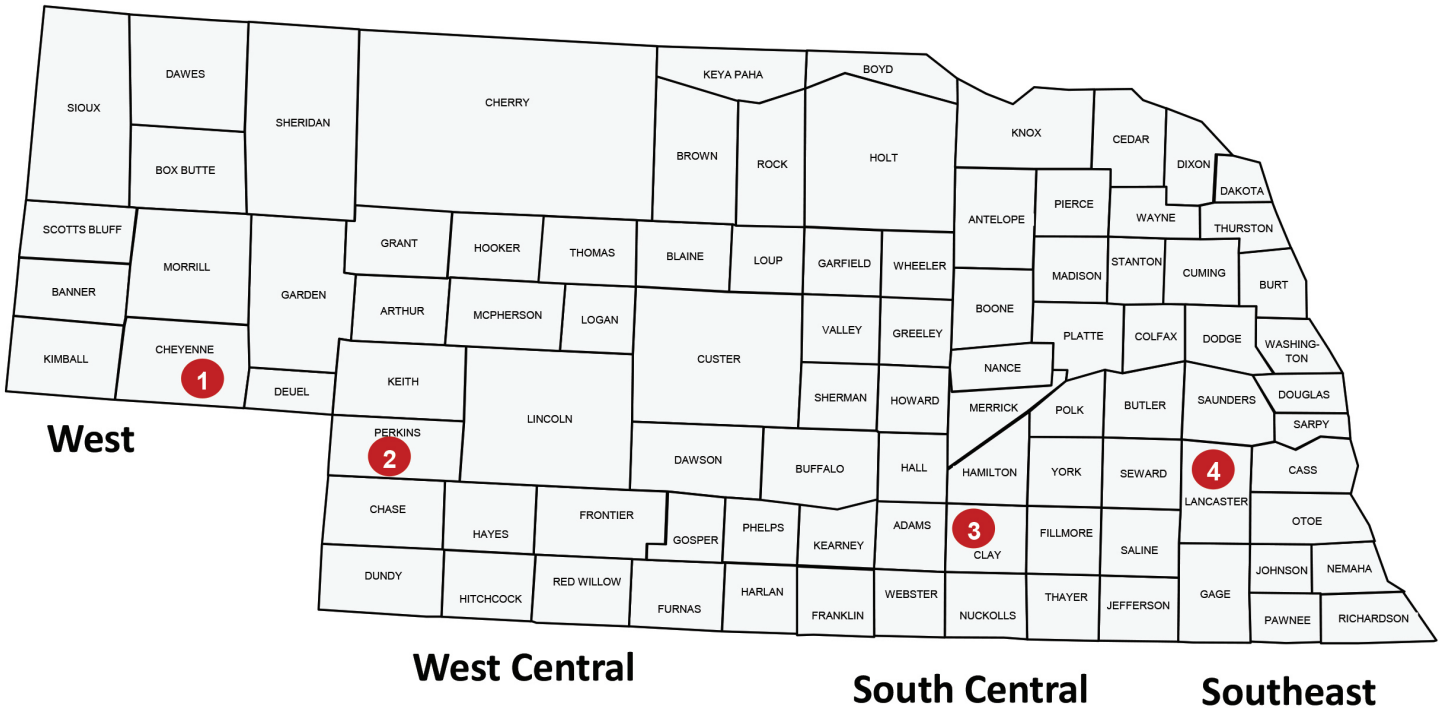
Individual plots are two rows wide and range from 25 to 30 feet long. At each test location, the same number of seeds were planted for all hybrids. The plant population represents the average harvested plant density. Grain yields are expressed on a 14% moisture basis. Yields shown are averages of four or more replicated plots at each location. Plots were machine harvested and grain moisture determinations were made with an electronic moisture meter or moisture sensors on the combine.

Variations in soil fertility, moisture conditions, and other factors are found in each test area. We make every effort to remove the variability by blocking and using other experimental design methods. We also use statistical procedures to remove a portion of the spatial variability. However, some variability remains which makes it impossible to measure yielding ability of hybrids with absolute accuracy. For this reason, small yield differences have little meaning. Unless the difference in performance of two varieties is greater than the difference required for least significance difference (LSD) shown in the tables, little confidence can be placed in the superiority of one variety over the other for measured traits in that particular test. These differences are shown at the 10% level, meaning that differences as large or larger could be expected through chance alone in 1 of 10 trials (10%).

In these experiments, many hybrids statistically had the same grain production. Performances of hybrids vary with seasonal conditions. Great care should be used in interpreting the results of a single year test. Earlier maturing hybrids are favored in some seasons while later ones perform best in other years. In addition, some hybrids are able to withstand unfavorable weather conditions better than others which may do well under ideal growing conditions. Performance over a period of years should give a much better measure of adaptation whenever available. Harvest moisture, stalk strength, and resistance to insect and disease also are factors which must be considered in selecting hybrids.

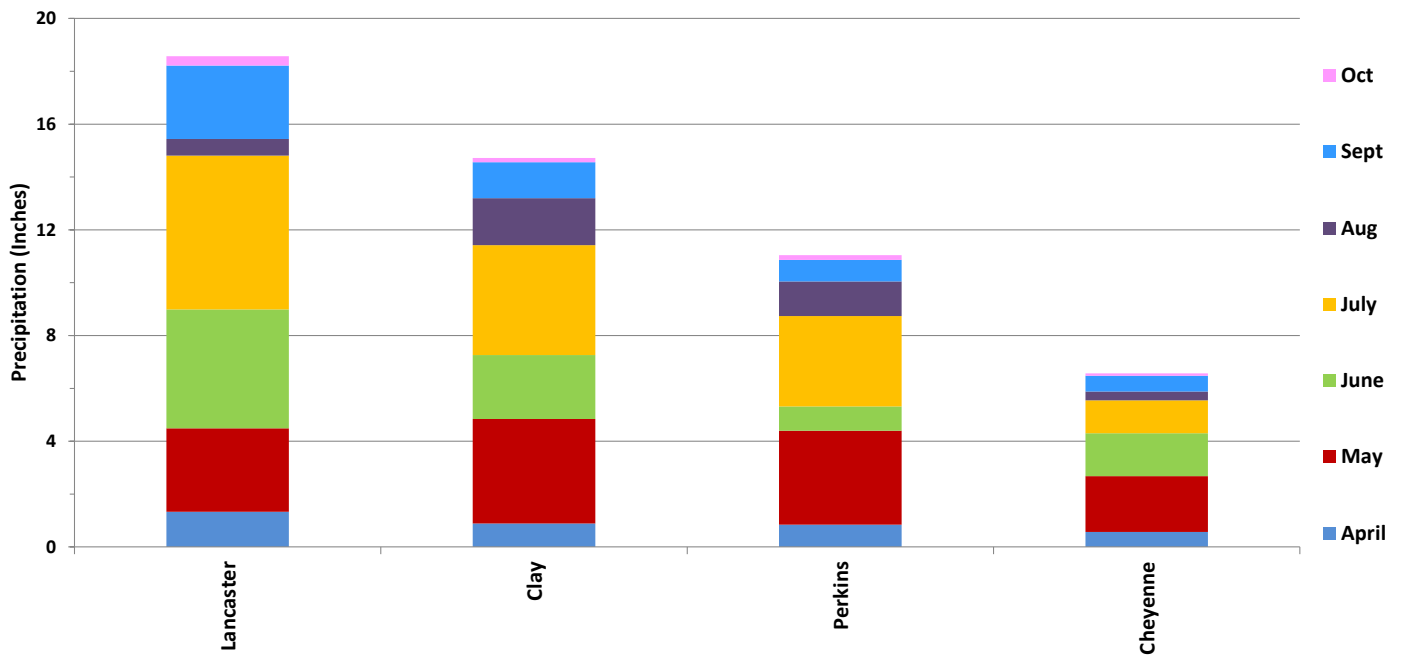


# 2020 GRAIN SORGHUM HYBRID TRIAL LOCATIONS MAP



● Rainfed Sites

## 2020 GRAIN SORGHUM TRIAL SITE PRECIPITATION (inches)



**TABLE A. LOCATIONS, COOPERATORS, PLANTING AND HARVEST DATES OF NEBRASKA SORGHUM TRIAL PLOTS**

Location	Cooperator	Condition	Latitude	Longitude	Planted	Harvested
<b>Southeast and South Central</b>						
Lancaster County	UNL Havelock Farm; Lincoln, NE	Rainfed	40.85197	-96.61306	6/2/2020	10/16/2020
Clay County	South Central Research & Extension Center; Harvard, NE	Rainfed	40.575622	-98.129051	6/2/2020	10/20/2020
<b>West Central and West</b>						
Perkins County	UNL Stumpf International Wheat Center; Grant, NE	Rainfed	40.845111	-101.687252	5/20/2020	10/30/2020
Cheyenne County	UNL High Plains Ag Lab; Sidney, NE	Rainfed	41.241808	-102.995469	5/27/2020	11/3/2020



**TABLE B. SOIL TYPE AND CULTURAL PRACTICES AT SORGHUM TRIAL SITES**

Location	Soil Series	Tillage System	Previous Crop	Fertilizer	Herbicide
<b>Southeast and South Central</b>					
Lancaster Rainfed	Butler silt loam	No-till	Soybeans	80 lb/a N	NA
Clay Rainfed	Butler & Crete silt loam	No-till	Corn	50.8 gal/a 32-0-0	3 qt/a Lexar + 32 oz/a Roundup PowerMax preplant
<b>West Central and West</b>					
Perkins Rainfed	Alliance silt loam	No-till	Wheat	NA	32 oz/a Buccaneer 5, 80 oz/a Bicep II Magnum, 6 oz/a Gardian
Cheyenne Rainfed	Alliance loam	No-till	Wheat	95 lb/a N, 20 lb/a P, 2 qt/a Zn	Roundup + 2,4-D preplant, 2 qt/a Warrant post-emergent

## TABLE C. AVERAGE GRAIN SORGHUM PERFORMANCE SUMMARY

Location	Average Yield (bu/a, 14%)	Yield LSD	Top Yield (bu/ac)	Bushel Weight (lb/bu)	50% Bloom (days after planting)	Plant Height (in)	Population (plts/a)
<b>Southeast and South Central</b>							
Lancaster Rainfed	145.3	20.1	171.6	60.4	60.2	55.7	73,064
Clay Rainfed	151.9	26.5	184.0	59.7	-	52.9	79,805
<b>West Central and West</b>							
Perkins Rainfed	56.4	15.5	71.6	51.9	-	43.4	27,217
Cheyenne Rainfed	21.1	6.3	29.9	44.3	83.5	36.9	29,383

## TABLE D - SORGHUM ENTRANTS AND CONTACT INFORMATION

*The entrant should be contacted for information on seed availability, adaptation and agronomic characteristics.*

Entrant	Address	Contact	Phone	Website
<b>ADVANTA</b>	8600 Freeport Parkway Suite 220 Irving, TX 75063	Zach Eder	979-332-5138	advantaseeds.com
<b>Arrow Seed Co. Inc.</b>	PO Box 722 Broken Bow, NE 68822	Jim Girardin	800-622-4727	arrowseed.com
<b>DEKALB</b>	2505 W35TH ST Kearney, NE 68845	Kevin Keller	402-719-7813	dekalbasgrowdeltapine.com
<b>Dyna-Gro Seed</b>	PO Box 2050 1720 16th Ave Kearney, NE 68848	Dave Welch	308-237-5194	dynagroseed.com
<b>Gayland Ward Seed Co Inc</b>	4395 US HWY 60 Hereford, TX 79045	Carson Ward	806-258-7394	gaylandwardseed.com
<b>Legend Seeds</b>	103 Hwy 14 East PO Box 241 DeSmet, SD 57231	April Borders	605-661-6100	legendseeds.net
<b>LG Seeds</b>	1122 E 169th St Westfield, IN 46074	Matt Teply	308-883-0515	lgseeds.com
<b>S&amp;W Seed Company/ Sorghum Partners</b>	2101 Ken Pratt Blvd Suite 101 Longmont, CO 80501	Scott Staggenborg	720-506-9191	swseedco.com

## Table E. Grain Sorghum Entrant Brand and Hybrid Details (1/2)

Brand/Source	Hybrid	Relative Maturity	Grain Color	Technology/Trait/Seed Treatment	Other Descriptive Information
ADVANTA	ADV G1329	Early	Cream	SCA TOL	
ADVANTA	ADV G2106	Med-Early	Red		
ADVANTA	ADV G2275	Medium	Red		
ADVANTA	ADV XG076	Early			
ADVANTA	ADV XG116IG	Med-Early	Red	IGROWTH	
ADVANTA	ADV XG117IG	Med-Early	Red	IGROWTH	
ADVANTA	ADV XG141	Medium	Red		
ADVANTA	ADV XG256	Medium	Red		
ADVANTA	ADV XG267	Medium	Red		
ADVANTA	ADV XG390IG	Med-Early	Red	IGROWTH	
ADVANTA	ADV XG9127	Med-Early	Red	SCA TOL	
ADVANTA	AG 1401	Med-Early	White		
ADVANTA	AG1201	Early	Bronze	SCA TOL	
ADVANTA	AG1203	Med-Early	Bronze	SCA TOL	
ADVANTA	AG1301	Med-Early	Cream	SCA TOL	
Arrow Seed	AS212	Very Early	Red	Maxim XL/Concep II/NipSit Inside	
Arrow Seed	AS248FG	Early	White	Maxim XL/Concep II/NipSit Inside	Food Grade
Arrow Seed	AS262	Medium	Red	Maxim XL/Concep II/NipSit Inside	Highly SCA Tolerant
Arrow Seed	AS292FG	Med-Late	White	Maxim XL/Concep II/NipSit Inside	Highly SCA Tolerant Food Grade
DEKALB	DKS28-05	Early	Bronze	CONVENTIONAL Concept/Poncho	
DEKALB	DKS29-95	Early	Red	CONVENTIONAL Concept/Poncho	
DEKALB	DKS36-07	Med-Early	Bronze	CONVENTIONAL Concept/Poncho	
DEKALB	DKS37-07	Med-Early	Bronze	CONVENTIONAL Concept/Poncho	
DEKALB	DKS38-16	Med-Early	Bronze	CONVENTIONAL Concept/Poncho	
DEKALB	DKS44-07	Medium	Red	CONVENTIONAL Concept/Poncho	
Dyna-Gro Seed	GX17912	Early	Cream	Safened+Imidacloprid Seed Treatment	
Dyna-Gro Seed	GX18919	Early	Cream	Safened+Imidacloprid Seed Treatment	
Dyna-Gro Seed	GX19981	Med-Late	Red	Safened+Imidacloprid Seed Treatment	SCA Resistance
Dyna-Gro Seed	M54GR24	Very Early	Red	Safened+Imidacloprid Seed Treatment	SCA Resistance
Dyna-Gro Seed	M57GB19	Early	Bronze	Safened+Imidacloprid Seed Treatment	
Dyna-Gro Seed	M57GC29	Early	Cream	Safened+Imidacloprid Seed Treatment	SCA Resistance
Dyna-Gro Seed	M59GB57	Early	Bronze	Safened+Imidacloprid Seed Treatment	
Dyna-Gro Seed	M59GB94	Early	Bronze	Safened+Imidacloprid Seed Treatment	SCA Resistance
Dyna-Gro Seed	M60GB31	Med-Early	Bronze	Safened+Imidacloprid Seed Treatment	SCA Resistance
Dyna-Gro Seed	M60GB88	Med-Early	Bronze	Safened+Imidacloprid Seed Treatment	
Dyna-Gro Seed	M62GB77	Medium	Bronze	Safened+Imidacloprid Seed Treatment	SCA Resistance
Dyna-Gro Seed	M69GB38	Med-Late	Bronze	Safened+Imidacloprid Seed Treatment	
Dyna-Gro Seed	M69GR88	Med-Late	Red	Safened+Imidacloprid Seed Treatment	
Dyna-Gro Seed	M71GR91	Med-Late	Red	Safened+Imidacloprid Seed Treatment	SCA Resistance
Dyna-Gro Seed	M72GB71	Med-Late	Bronze	Safened+Imidacloprid Seed Treatment	SCA Resistance

TABLE CONTINUED ON NEXT PAGE



## Table E. Grain Sorghum Entrant Brand and Hybrid Details (2/2)

Brand/Source	Hybrid	Relative Maturity	Grain Color	Technology/Trait/Seed Treatment	Other Descriptive Information
Gayland Ward Seeds	18036	Medium	Red	Full treatment	
Gayland Ward Seeds	18057	Med-Early	Red	Full treatment	
Gayland Ward Seeds	18072	Medium	White	Full treatment	Food Grade
Gayland Ward Seeds	18567	Med-Early	White	Full treatment	Food Grade
Gayland Ward Seeds	19014	Med-Early	Red	Full treatment	
Gayland Ward Seeds	19015	Med-Early	Red	Full treatment	
Gayland Ward Seeds	19016	Medium	Red	Full treatment	
Gayland Ward Seeds	19017	Medium	Red	Full treatment	
Legend Seeds	LGS 5002	Early	Red	Maxim XL/Concep III/Nipsit	
Legend Seeds	LGS 5508W	Early	White	Maxim XL/Concep III/Nipsit	Food Grade
Legend Seeds	LGS 5808	Early	Red	Maxim XL/Concep III/Nipsit	
Legend Seeds	LGS X6321	Med-Early	Bronze	Maxim XL/Concep III/Nipsit	
LG Seeds	1510C	Early	Cream	AgriShield Max	
LG Seeds	2620C	Med-Early	Cream	AgriShield Max	
LG Seeds	2730B	Med-Early	Bronze	AgriShield Max	
LG Seeds	2950B	Med-Early	Bronze	AgriShield Max	
S&W Seed Co./ Sorghum Partners	KS310	Early	Bronze		
S&W Seed Co./ Sorghum Partners	NK 2212	Very Early	Bronze		
S&W Seed Co./ Sorghum Partners	SP 25C10	Early	Cream		
S&W Seed Co./ Sorghum Partners	SP 31A15	Early	Bronze		
S&W Seed Co./ Sorghum Partners	SP 43M80	Med-Early	Bronze		
S&W Seed Co./ Sorghum Partners	SP 68M57	Medium	Bronze		
S&W Seed Co./ Sorghum Partners	SP 74M21	Med/Full	Bronze		
S&W Seed Co./ Sorghum Partners	SP 7715	Med/Full	Bronze		



# LANCASTER COUNTY GRAIN SORGHUM HYBRID TRIAL - 2020

Hybrid	Brand	Average Yield (bu/a)[1]	Bushel Weight (lb/bu)	50% Bloom (days after planting)	Plant Height (in)	Population (plts/a)	Lodging (%)
ADV G2275	ADVANTA	171.6	58.7	58.0	59.8	78,218	<5
M60GB31	Dyna-Gro Seed	162.4	61.2	62.0	57.3	72,360	0.0
GX19981	Dyna-Gro Seed	162.0	61.3	65.0	58.0	80,167	0.0
SP 7715	S&W Seeds/Sorghum Partners	160.0	60.3	62.5	61.3	89,047	0.0
M59GB94	Dyna-Gro Seed	159.0	59.7	54.0	57.0	86,450	0.0
M71GR91	Dyna-Gro Seed	159.0	61.7	64.8	62.8	88,635	<5
ADV G2106	ADVANTA	157.9	61.2	56.3	51.3	74,967	0.0
ADV XG141	ADVANTA	157.0	60.6	57.5	54.0	76,522	0.0
ADV XG117IG	ADVANTA	154.2	61.4	57.5	51.5	69,864	<5
SP 68M57	S&W Seeds/Sorghum Partners	153.9	59.5	60.5	50.3	70,845	6-10
M60GB88	Dyna-Gro Seed	152.3	61.7	59.0	52.3	79,246	0.0
SP 43M80	S&W Seeds/Sorghum Partners	151.4	59.5	55.0	55.0	80,321	0.0
SP 74M21	S&W Seeds/Sorghum Partners	151.3	59.6	63.3	57.5	84,339	0.0
ADV XG116IG	ADVANTA	150.7	61.1	59.8	48.5	75,979	>50
LGS X6321	Legend Seeds	150.0	60.0	59.8	56.5	64,536	0.0
M69GB38	Dyna-Gro Seed	148.3	60.8	66.5	64.3	65,508	0.0
ADV XG9127	ADVANTA	147.3	60.5	62.0	53.0	59,141	0.0
M69GR88	Dyna-Gro Seed	147.1	59.7	63.3	53.3	78,241	0.0
LGS 5808	Legend Seeds	145.1	61.8	59.5	55.0	62,493	0.0
AG 1401	ADVANTA	144.4	61.6	55.3	49.8	77,570	0.0
GX17912	Dyna-Gro Seed	141.2	60.0	53.5	53.5	83,273	0.0
AG1203	ADVANTA	137.7	61.8	61.0	55.3	72,125	0.0
M62GB77	Dyna-Gro Seed	137.1	60.7	57.3	59.5	76,733	0.0

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## LANCASTER COUNTY GRAIN SORGHUM TRIAL - 2020 (continued)

Hybrid	Brand	Average Yield (bu/a)[1]	Bushel Weight (lb/bu)	50% Bloom (days after planting)	Plant Height (in)	Population (plts/a)	Lodging (%)
LGS 5508W	Legend Seeds	136.8	60.6	62.3	51.5	51,499	0.0
ADV XG256	ADVANTA	135.7	59.3	61.3	56.8	60,481	0.0
AS262	Arrow Seed	135.4	61.3	65.0	61.8	60,900	0.0
M72GB71	Dyna-Gro Seed	134.9	59.1	66.5	60.5	80,557	0.0
M54GR24	Dyna-Gro Seed	133.7	60.5	55.3	49.5	84,843	0.0
ADV XG267	ADVANTA	130.9	58.5	63.0	56.3	52,021	6-10
ADV XG390IG	ADVANTA	130.5	60.5	59.3	55.5	80,941	0.0
AS248FG	Arrow Seed	130.5	60.2	60.5	51.5	49,571	0.0
LGS 5002	Legend Seeds	128.8	60.8	52.0	49.3	88,194	<5
AS292FG	Arrow Seed	96.8	58.1	68.8	70.8	55,539	0.0
<b>Average of all entries</b>		<b>145.3</b>	<b>60.4</b>	<b>60.2</b>	<b>55.7</b>	<b>73,064</b>	.
<b>Standard error</b>		<b>12.1</b>	<b>1.0</b>	<b>1.2</b>	<b>0.8</b>	<b>3527</b>	.
<b>LSD [2]</b>		<b>20.1</b>	<b>1.6</b>	<b>2.1</b>	<b>1.4</b>	<b>5858</b>	.
<b>Coefficient of variation [3]</b>		<b>8.3</b>	<b>1.7</b>	<b>2.0</b>	<b>1.4</b>	<b>4.8</b>	.
<b>Replicates</b>		<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>

[1] Yield adjusted to 14% moisture and assuming 56 lb/bu test weight.

[2] For differences between varieties that are equal to or greater than the LSD value, the chance that the difference is significant is 90%.

[3] Coefficient of Variation (CV) indicates the quality of a trial, and lower than 15 indicates a high quality trial. For CV>15, there was higher than expected variability in the field or the data and the results should be used with caution.



## CLAY COUNTY GRAIN SORGHUM HYBRID TRIAL - 2020

Hybrid	Brand	Average Yield (bu/a)[1]	Bushel Weight (lb/bu)	Plant Height (in)	Population (plts/a)	Lodging (%)
ADV XG117IG	ADVANTA	184.0	61.0	48.5	76,536	0
M71GR91	Dyna-Gro Seed	179.7	62.1	58.0	90,817	6-10
18057	Gayland Ward Seeds	175.5	60.3	53.0	85,495	0
AG1203	ADVANTA	174.7	61.3	52.0	79,729	<5
GX19981	Dyna-Gro Seed	170.3	60.8	54.0	82,508	0
ADV G2106	ADVANTA	170.1	60.2	48.7	78,388	0
DKS44-07	DEKALB	169.7	61.4	54.0	98,643	6-10
DKS38-16	DEKALB	166.5	61.5	55.5	84,107	6-10
GX17912	Dyna-Gro Seed	165.6	59.5	49.0	93,312	0
M72GB71	Dyna-Gro Seed	164.9	60.8	56.3	72,583	6-10
ADV XG256	ADVANTA	163.8	58.9	54.0	62,725	0
AS248FG	Arrow Seed	162.9	59.8	52.0	59,586	0
ADV XG9127	ADVANTA	162.2	58.7	49.7	64,061	0
M60GB31	Dyna-Gro Seed	159.6	61.7	52.0	78,752	11-15
ADV XG116IG	ADVANTA	158.2	60.5	47.0	74,726	<5
ADV XG141	ADVANTA	158.2	59.6	50.0	68,234	6-10
M69GB38	Dyna-Gro Seed	157.8	59.4	57.5	69,268	6-10
ADV XG390IG	ADVANTA	156.8	60.8	50.3	69,872	0
ADV XG267	ADVANTA	156.8	57.4	54.0	56,763	0
AG 1401	ADVANTA	153.6	60.6	48.7	81,247	11-15
LGS X6321	Legend Seeds	153.6	59.6	56.7	76,227	<5
M62GB77	Dyna-Gro Seed	152.4	61.2	54.3	83,500	<5
M69GR88	Dyna-Gro Seed	151.0	61.0	52.0	71,502	0
SP 74M21	S&W Seeds/Sorghum Partners	150.3	58.6	52.0	77,916	0
M60GB88	Dyna-Gro Seed	148.9	59.2	48.3	81,102	16-20
DKS36-07	DEKALB	148.8	59.7	52.0	78,781	6-10
LGS 5002	Legend Seeds	148.5	59.9	46.3	94,898	<5
ADV G2275	ADVANTA	147.1	61.2	54.0	74,720	<5
SP 7715	S&W Seeds/Sorghum Partners	144.0	57.5	53.3	78,860	11-15
19017	Gayland Ward Seeds	143.1	54.7	58.0	61,200	<5
M54GR24	Dyna-Gro Seed	142.6	60.4	46.0	89,792	0
18072	Gayland Ward Seeds	142.3	56.4	55.0	69,862	0
M59GB94	Dyna-Gro Seed	138.3	60.6	52.5	91,996	6-10
19016	Gayland Ward Seeds	137.2	57.6	54.0	68,442	<5
19015	Gayland Ward Seeds	136.6	59.8	52.0	86,672	0
18036	Gayland Ward Seeds	136.3	59.6	58.0	77,186	11-15

TABLE CONTINUED ON NEXT PAGE



## CLAY COUNTY GRAIN SORGHUM HYBRID TRIAL - 2020 (continued)

Hybrid	Brand	Average Yield (bu/a)[1]	Bushel Weight (lb/bu)	Plant Height (in)	Population (plts/a)	Lodging (%)
19014	Gayland Ward Seeds	133.5	57.8	56.5	84,994	6-10
AS262	Arrow Seed	131.0	60.1	55.0	73,697	0
18567	Gayland Ward Seeds	130.9	58.6	54.0	77,739	16-20
LGS 5508W	Legend Seeds	130.9	59.4	52.0	60,111	0
DKS37-07	DEKALB	130.3	61.4	50.7	83,914	11-15
AS292FG	Arrow Seed	126.6	57.6	65.0	60,877	>20
SP 68M57	S&W Seeds/Sorghum Partners	118.7	58.6	51.0	71,270	<5
<b>Average of all entries</b>		<b>151.9</b>	<b>59.7</b>	<b>52.9</b>	<b>76,805</b>	.
<b>Standard error</b>		<b>15.8</b>	<b>1.8</b>	<b>1.2</b>	<b>5,046</b>	.
<b>LSD [2]</b>		<b>26.5</b>	<b>3.1</b>	<b>2.0</b>	<b>8,464</b>	.
<b>Coefficient of variation [3]</b>		<b>10.4</b>	<b>3.0</b>	<b>2.3</b>	<b>6.6</b>	.
<b>Replicates [4]</b>		<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>

[1] Yield adjusted to 14% moisture and assuming 56 lb/bu test weight.

[2] For differences between varieties that are equal to or greater than the LSD value, the chance that the difference is significant is 90%.

[3] Coefficient of Variation (CV) indicates the quality of a trial, and lower than 15 indicates a high quality trial. For CV>15, there was higher than expected variability in the field or the data and the results should be used with caution.

[4] An issue with the planter meant that there was some unbalancedness in the trial as far as number of reps. The final analysis took the unbalanced data into account to provide the best possible averages. However, it is still recommended to consider multi-year averages.



## PERKINS COUNTY GRAIN SORGHUM HYBRID TRIAL - 2020

Hybrid	Brand	Average Yield (bu/a)[1]	Bushel Weight (lb/bu)	Plant Height (in)	Population (plts/a)
KS310	S&W Seeds/Sorghum Partners	71.6	55.4	44.2	31,189
M59GB57	Dyna-Gro Seed	69.6	55.4	39.8	28,866
2620C	LG Seeds	67.9	54.7	43.2	30,608
DKS44-07	DEKALB	67.4	56.5	45.0	32,409
SP 31A15	S&W Seeds/Sorghum Partners	67.1	54.3	44.6	32,525
18072	Gayland Ward Seeds	66.3	53.9	47.6	29,156
DKS38-16	DEKALB	65.8	56.0	48.6	25,671
DKS36-07	DEKALB	65.1	54.1	45.4	29,969
DKS37-07	DEKALB	64.3	56.0	45.2	31,363
GX18919	Dyna-Gro Seed	63.3	55.8	39.8	25,497
2950B	LG Seeds	62.9	54.4	36.8	29,272
ADV XG116IG	ADVANTA	62.8	54.5	42.8	27,530
AG1201	ADVANTA	62.6	54.0	36.6	33,628
18567	Gayland Ward Seeds	62.4	50.9	47.4	24,975
18057	Gayland Ward Seeds	62.0	53.9	44.2	30,202
SP 25C10	S&W Seeds/Sorghum Partners	60.9	55.6	43.0	26,659
1510C	LG Seeds	60.5	54.5	33.4	28,401
M60GB88	Dyna-Gro Seed	60.4	54.1	44.8	20,154
ADV XG9127	ADVANTA	59.9	53.3	45.4	26,659
SP 43M80	S&W Seeds/Sorghum Partners	59.8	56.0	45.0	25,729
19015	Gayland Ward Seeds	59.3	54.4	47.2	35,545
ADV G2106	ADVANTA	59.0	53.4	45.8	30,957
19014	Gayland Ward Seeds	58.5	53.7	49.6	36,148
AG1301	ADVANTA	58.4	53.1	40.0	24,219
AS212	Arrow Seed	58.2	55.9	40.6	32,641
GX17912	Dyna-Gro Seed	57.8	43.2	41.2	27,762
LGS 5002	Legend Seeds	57.6	55.2	42.0	31,537
NK 2212	S&W Seeds/Sorghum Partners	57.4	56.5	38.1	25,112
M57GC29	Dyna-Gro Seed	55.3	54.3	37.8	16,959
2730B	LG Seeds	54.9	53.0	47.8	27,472
AG 1401	ADVANTA	54.6	54.9	41.0	25,149
M54GR24	Dyna-Gro Seed	52.6	54.4	41.6	27,530
M60GB31	Dyna-Gro Seed	52.2	43.3	45.4	25,381
Check	NA	50.8	54.5	46.0	26,542
ADV G1329	ADVANTA	50.4	54.1	36.8	16,669
ADV XG076	ADVANTA	50.2	51.3	43.2	15,043
19016	Gayland Ward Seeds	49.3	47.7	45.8	28,750

TABLE CONTINUED ON NEXT PAGE



## PERKINS COUNTY GRAIN SORGHUM TRIAL - 2020 (continued)

Hybrid	Brand	Average Yield (bu/a)[1]	Bushel Weight (lb/bu)	Plant Height (in)	Population (plts/a)
M59GB94	Dyna-Gro Seed	47.2	55.2	44.6	25,207
AS248FG	Arrow Seed	43.9	32.2	43.2	17,482
M57GB19	Dyna-Gro Seed	42.8	44.5	46.2	34,500
LGS 5508W	Legend Seeds	39.3	44.0	45.8	15,682
18036	Gayland Ward Seeds	31.0	54.9	47.8	31,305
19017	Gayland Ward Seeds	30.3	25.5	45.8	27,936
ADV XG390IG	ADVANTA	26.4	41.7	42.8	21,548
<b>Average of all entries</b>		<b>56.4</b>	<b>51.9</b>	<b>43.4</b>	<b>27,217</b>
<b>Standard error</b>		<b>9.3</b>	<b>5.9</b>	<b>2.9</b>	<b>4,386</b>
<b>LSD [2]</b>		<b>15.5</b>	<b>9.8</b>	<b>4.8</b>	<b>7,255</b>
<b>Coefficient of variation [3]</b>		<b>16.5</b>	<b>11.4</b>	<b>6.7</b>	<b>16.1</b>
<b>Replicates</b>		<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>

[1] Yield adjusted to 14% moisture and assuming 56 lb/bu test weight.

[2] For differences between varieties that are equal to or greater than the LSD value, the chance that the difference is significant is 90%.

[3] Coefficient of Variation (CV) indicates the quality of a trial, and lower than 15 indicates a high quality trial. For CV>15, there was higher than expected variability in the field or the data and the results should be used with caution.





# CHEYENNE COUNTY GRAIN SORGHUM HYBRID TRIAL - 2020

Hybrid	Brand	Average Yield (bu/a)[1]	Bushel Weight (lb/bu)	50% Bloom (days after planting)	Plant Height (in)	Population (plts/a)
DKS29-95	DEKALB	29.9	45.8	82	36.8	36,954
AG1201	ADVANTA	29.1	50.0	81	34.5	31,145
GX17912	Dyna-Gro Seed	27.2	45.7	82	38.0	33,686
M59GB94	Dyna-Gro Seed	26.9	45.4	85	39.0	31,799
KS310	S&W Seeds/Sorghum Partners	23.5	50.3	83	38.5	34,703
19015	Gayland Ward Seeds	23.3	39.0	85	42.5	37,680
M59GB57	Dyna-Gro Seed	22.2	45.4	82	36.0	32,888
M54GR24	Dyna-Gro Seed	20.9	50.1	83	36.8	30,927
ADV XG076	ADVANTA	19.9	44.7	83	38.0	26,427
SP 31A15	S&W Seeds/Sorghum Partners	19.4	47.0	83	36.8	34,775
ADV G1329	ADVANTA	19.3	45.0	83	31.5	15,682
DKS37-07	DEKALB	19.2	49.4	86	37.8	33,396
M57GB19	Dyna-Gro Seed	19.1	43.7	83	36.8	31,363
AS212	Arrow Seed	18.9	48.7	82	38.5	33,033
SP 25C10	S&W Seeds/Sorghum Partners	18.9	42.3	81	38.0	29,476
GX18919	Dyna-Gro Seed	18.6	39.7	82	38.8	34,412
AG 1401	ADVANTA	18.4	46.3	83	37.8	31,508
DKS36-07	DEKALB	17.9	37.5	86	38.0	30,419
M57GC29	Dyna-Gro Seed	17.5	46.6	83	32.8	17,206
LGS 5002	Legend Seeds	16.4	43.1	83	34.3	33,687
Check	NA	16.3	46.1	80	34.3	34,485
NK 2212	S&W Seeds/Sorghum Partners	.	43.5	81	36.0	20,836
AS248FG	Arrow Seed	.	43.0	84	38.0	11,906
LGS 5508W	Legend Seeds	.	45.7	87	37.0	13,286
DKS28-05	DEKALB	.	42.9	83	40.0	32,307
ADV G2106	ADVANTA	.	43.5	83	38.0	29,766
ADV XG9127	ADVANTA	.	37.6	89	34.5	24,757
19014	Gayland Ward Seeds	.	30.6	88	36.0	31,654
18057	Gayland Ward Seeds	.	.	88	35.3	31,944
<b>Average of all entries</b>		<b>21.1</b>	<b>44.3</b>	<b>83.5</b>	<b>36.9</b>	<b>29,383</b>
<b>Standard error</b>		<b>3.5</b>	<b>4.4</b>	<b>1.2</b>	<b>2.1</b>	<b>1,955</b>
<b>LSD [2]</b>		<b>6.3</b>	<b>7.4</b>	<b>2</b>	<b>3.6</b>	<b>3,252</b>
<b>Coefficient of variation [3]</b>		<b>17.6</b>	<b>9.9</b>	<b>1.4</b>	<b>5.7</b>	<b>6.7</b>
<b>Replicates</b>		<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>

[1] Yield adjusted to 14% moisture and assuming 56 lb/bu test weight. Accumulation of GDDs not adequate for some of the entries to finish/mature. Early fall freezes reduced test weights. Entries that did not finish are listed at the bottom of the table and not included in the final yield/test weight analysis.

[2] For differences between varieties that are equal to or greater than the LSD value, the chance that the difference is significant is 90%.

[3] Coefficient of Variation (CV) indicates the quality of a trial, and lower than 15 indicates a high quality trial. For CV>15, there was higher than expected variability in the field or the data and the results should be used with caution.

# NEBRASKA PROSO MILLET VARIETY TRIALS - 2020

## CROP PRODUCTION SUMMARY

According to the National Agricultural Statistics Service, 125,000 acres of proso millet were harvested in Nebraska in 2020 producing 3.0 million bushels. The average proso millet yield in Nebraska for 2020 was 24 bushels per acre (bu/a). The USDA estimated the value of proso millet produced in Nebraska at \$8.6 million in 2017, \$13.1 million in 2018, and \$15.4 million in 2019. Detailed information regarding crop progress and history can be obtained from the National Agricultural Statistics Service available online at <http://www.nass.usda.gov>.

## PROCEDURE

Proso millet variety trials were conducted at three dryland sites in the Nebraska Panhandle and in South Dakota: Cheyenne County near Sidney, Deuel County, and in Meade County, SD near Sturgis, SD. Irrigated proso millet variety trials were conducted at two sites in the Panhandle: Cheyenne County near Sidney and in Scotts Bluff County near Scottsbluff. Planting was completed within the normal planting range in June. In the Cheyenne County irrigated trial, poor stand due to the moisture stress and early frost resulted in lower yields. The online link for full variety trial results for proso millet is <https://cropwatch.unl.edu/varietytest/othercrops>.

Variations in soil fertility, moisture conditions, and other factors are found in each test area. We make every effort to remove the variability by blocking and using other experimental design methods. We also use statistical procedures to remove a portion of the spatial variability. However, some variability remains which makes it impossible to measure yielding ability of hybrids with absolute accuracy. For this reason, small yield differences have little meaning. Unless the difference in performance of two varieties is greater than the difference required for significance shown in the tables, little confidence can be placed in the superiority of one variety over the other for measured traits in that particular test. These differences are shown at the 5% level, meaning that differences as large or larger could be expected through chance alone in 1 of 20 trials (5%). Coefficient of Variation (CV) indicates the quality of a trial, and lower than 15 indicates a high quality trial. For CV>15, there was higher than expected variability in the field or the data and the results should be used with caution.

## LOCATIONS, COOPERATORS, PLANTING AND HARVEST DATES OF NEBRASKA PROSO MILLET TRIAL PLOTS - 2020

Location	Cooperator	Latitude	Longitude	Soil Series	Tillage	Previous Crop	Planted	Harvested
Cheyenne Dryland	UNL High Plains Ag Lab; Sidney, NE	41.23562	-102.99822	Alliance loam	No-till	Wheat	6/17/2020	10/2/2020
Deuel Co. Dryland	Pete Miller	41.27357	-102.68731	Keith loam	No-till	Wheat (failed)	6/28/2020	10/6/2020
Sturgis, SD Dryland	SDSU West River Research Farm	44.42450	-103.37790	Nunn silt loam	No-till	Wheat	6/25/2020	9/24/2020
Cheyenne Irrigated	UNL High Plains Ag Lab; Sidney, NE	41.25323	-103.00281	Keith loam	Conv.	Soybean	6/18/2020	10/6/2020
Scotts Bluff Irrigated	UNL Scottsbluff Ag. Lab., Scottsbluff, NE	41.88920	-103.67883	Tripp fine sandy loam	Conv.	Winter Canola	6/7/2020	9/24/2020

Seed Source: UNL Alternative Crops (Proso Millet) Breeding Program. "PMx" varieties are experimental lines being developed by the Alternative Crops (Proso Millet) Breeding Program led by Dr. Dipak Santra.

## PROSO MILLET DRYLAND VARIETY TRIALS - 2020

Variety	Average Yield (lbs/a)	Cheyenne Yield (lbs/a)	Deuel Yield (lbs/a)	Sturgis, SD Yield (lbs/a)	Average Test Wt (lb/bu)	Cheyenne Heading Date	Cheyenne Height (inch)
PMx11.27-79*	1049	995	657	1495	45	3-Aug	13
PMx11.3-21	1026	833	872	1374	47	3-Aug	13
PMx11.10-82	971	905	895	1112	47	2-Aug	14
PMx11.26-63	948	1094	956	794	48	5-Aug	15
Huntsman	934	742	824	1237	45	3-Aug	14
PMx13.22	931	729	979	1085	44	2-Aug	13
Horizon	927	740	959	1082	44	2-Aug	15
PMx13.12	925	751	1073	952	46	2-Aug	14
HXM-10-29	923	770	847	1153	46	4-Aug	13
PMx11.4-16	919	760	769	1228	46	3-Aug	13
PMx11.32-72	889	1062	679	927	46	5-Aug	14
HXR-2-75	883	1048	583	1019	41	2-Aug	15
PMx11.32-93	870	1050	779	780	48	5-Aug	14
PMx13.28-2	868	934	791	878	48	4-Aug	15
PMx11.31-101	864	910	678	1003	45	5-Aug	14
PMx11.14-10	858	838	916	821	46	2-Aug	13
PMx12.10	853	828	799	932	47	3-Aug	14
HXR-1-23	851	808	778	967	45	3-Aug	13
Earlybird	848	904	798	843	47	2-Aug	13
PMx12.7	844	750	813	969	45	3-Aug	13
Sunrise	835	965	677	862	45	2-Aug	13
PMx11.35-32	828	934	794	757	47	5-Aug	13
PMx12.1	822	760	770	936	46	4-Aug	13
PMx13.16	804	774	740	899	45	3-Aug	13
PMx13.10	795	721	828	836	45	2-Aug	14
PMx12.5	761	680	762	841	43	4-Aug	13
PMx13.28-1	761	827	768	687	47	4-Aug	14
PMx11.23-52	704	843	762	506	47	6-Aug	15
PMx11.26-48	691	839	611	622	42	5-Aug	14
Plateau	656	380	656	931	34	29-Jul	14
<b>Average of all entries</b>	<b>861</b>	<b>840</b>	<b>794</b>	<b>951</b>	<b>45</b>	<b>3-Aug</b>	<b>14</b>
<b>Diff. required for sign at 5%[1]</b>	<b>265</b>	<b>242</b>	<b>164</b>	<b>488</b>	<b>7</b>	<b>1</b>	<b>2</b>
<b>Coefficient of variation [2]</b>	<b>19</b>	<b>21</b>	<b>15</b>	<b>36</b>	<b>8</b>	<b>0.4</b>	<b>8</b>

\*PMx varieties are experimental lines being developed by the Alternative Crops (Proso Millet) Breeding Program.

[1] For differences between varieties that are equal to or greater than the value, the chance that the difference is significant is 95%.

[2] Coefficient of Variation (CV) indicates the quality of a trial, and lower than 15 indicates a high quality trial. For CV>15, there was higher than expected variability in the field or the data and the results should be used with caution.



## PROSO MILLET IRRIGATED VARIETY TRIALS - 2020

Variety	Average Yield (lbs/a)	Cheyenne Yield (lbs/a)	Scotts Bluff Yield (lbs/a)	Average Test Wt (lb/bu)	Average Heading Date	Scotts Bluff Height (inches)
PMx11.26-63*	1909	1328	2490	49	11-Aug	32
HXR-1-23	1866	1056	2676	49	5-Aug	30
Earlybird	1733	884	2582	47	6-Aug	29
PMx11.3-21	1725	883	2566	49	8-Aug	34
HXM-10-29	1662	973	2351	49	8-Aug	29
PMx11.27-79	1589	844	2333	48	9-Aug	31
Horizon	1583	1116	2049	48	6-Aug	28
PMx11.35-32	1558	750	2366	49	11-Aug	29
PMx13.10-2	1555	769	2341	49	7-Aug	29
PMx11.26-48	1553	682	2424	48	9-Aug	28
PMx11.31-101	1540	526	2554	48	9-Aug	32
PMx11.32-72	1528	792	2264	49	10-Aug	30
PMx11.23-52	1504	852	2155	48	10-Aug	32
PMx11.10-82	1495	856	2133	48	8-Aug	25
Huntsman	1481	458	2503	49	10-Aug	29
PMx13.16	1463	575	2350	48	7-Aug	33
PMx11.32-93	1462	431	2493	49	10-Aug	32
PMx11.4-16	1460	697	2223	48	9-Aug	32
PMx11.14-10	1408	1064	1752	48	8-Aug	32
HXR-2-75	1387	731	2043	47	8-Aug	31
PMx12.5	1356	678	2034	48	10-Aug	33
PMx13.22	1299	449	2148	48	7-Aug	28
PMx12.10	1266	522	2010	48	8-Aug	28
PMx13.12	1254	536	1971	48	9-Aug	27
Sunrise	1250	494	2006	47	7-Aug	29
PMx12.7	1185	456	1914	48	9-Aug	31
PMx13.28-2	1172	479	1864	49	9-Aug	29
PMx12.1	1127	523	1731	49	9-Aug	34
PMx13.28-1	1015	519	1511	47	11-Aug	30
Plateau	937	339	1535	47	4-Aug	28
<b>Average of all entries</b>	<b>1443</b>	<b>709</b>	<b>2180</b>	<b>48</b>	<b>8-Aug</b>	<b>30</b>
<b>Diff required for sign. at 5%[1]</b>	<b>453</b>	<b>595</b>	<b>477</b>	<b>2</b>	<b>.</b>	<b>4</b>
<b>Coefficient of variation [2]</b>	<b>15</b>	<b>51</b>	<b>13</b>	<b>2</b>	<b>.</b>	<b>8</b>

\*PMx varieties are experimental lines being developed by the Alternative Crops (Proso Millet) Breeding Program.

[1] For differences between varieties that are equal to or greater than the value, the chance that the difference is significant is 95%.

[2] Coefficient of Variation (CV) indicates the quality of a trial, and lower than 15 indicates a high quality trial. For CV>15, there was higher than expected variability in the field or the data and the results should be used with caution.

## PROSO MILLET VARIETY TRIALS 2018 - 2020

Two year averages			Three year averages		
Variety	Yield (lbs/a)	Test Wt (lb/bu)	Variety	Yield (lbs/a)	Test Wt (lb/bu)
PMx12.10	1153	48	PMx12.10	1527	51
PMx11.14-10	1149	49	PMx12.1	1527	51
PMx12.1	1139	48	PMx11.35-32	1522	51
PMx11.27-79	1078	49	PMx11.27-79	1521	52
PMx11.10-82	1076	48	PMx11.26-63	1500	52
Huntsman	1058	49	Huntsman	1496	51
Horizon	1012	49	PMx11.32-72	1494	51
PMx11.3-21	1006	49	PMx11.32-93	1455	49
PMx11.26-63	999	49	PMx11.14-10	1450	51
PMx11.32-72	990	49	HXM-10-29	1448	49
HXM-10-29	986	47	PMx11.3-21	1445	51
PMx11.35-32	974	48	PMx11.10-82	1429	50
HXR-1-23	910	49	Horizon	1422	50
PMx11.4-16	903	48	PMx11.31-101	1401	49
PMx11.31-101	891	46	PMx11.26-48	1397	50
PMx12.7	875	46	HXR-1-23	1366	51
PMx11.32-93	832	46	PMx11.23-52	1326	48
Earlybird	829	50	Sunrise	1263	51
Sunrise	813	48	Earlybird	1242	52
PMx11.26-48	812	46	HXR-2-75	1216	45
PMx12.5	768	46	Plateau	1018	48
HXR-2-75	735	41	<b>Average of all entries</b>	<b>1403</b>	<b>50</b>
PMx11.23-52	730	43	<b>Diff required for sign. at 5%[1]</b>	<b>310</b>	<b>3</b>
Plateau	686	46	<b>CV [2]</b>	<b>13</b>	<b>4</b>
<b>Average of all entries</b>	<b>933</b>	<b>47</b>			
<b>Diff. required for sign. at 5%[1]</b>	<b>323</b>	<b>4</b>			
<b>CV [2]</b>	<b>16</b>	<b>4</b>			

\*PMx varieties are experimental lines being developed by the Alternative Crops (Proso Millet) Breeding Program.

[1] For differences between varieties that are equal to or greater than the value, the chance that the difference is significant is 95%.

[2] Coefficient of Variation (CV) indicates the quality of a trial, and lower than 15 indicates a high quality trial. For CV>15, there was higher than expected variability in the field or the data and the results should be used with caution.

# NEBRASKA PEA VARIETY TRIALS - 2020

## CROP PRODUCTION SUMMARY

According to the National Agricultural Statistics Service, 34,000 acres of field peas were harvested in Nebraska in 2020 producing 680,000 hundredweight. The average field pea yield in Nebraska for 2020 was 2,000 pounds per acre (lb/a). The USDA estimated the value of peas produced in Nebraska at \$7.8 million in 2017, \$9.4 million in 2018, and \$7.3 million in 2019. Detailed information regarding crop progress and history can be obtained from the National Agricultural Statistics Service available online at <http://www.nass.usda.gov>.

## PROCEDURE

Pea variety trials were conducted at three dryland sites in the Panhandle and southwest Nebraska: Box Butte County near Alliance (28 varieties), Cheyenne County near Sidney (28 varieties), and Perkins County near Venango (33 varieties). Planting was completed within the normal planting range in early spring. Individual plots are six rows wide with 10" spacing and 30 feet long. At each location, 350,000 seeds per acre inoculated with granular pea inoculum at the time of planting were planted for all varieties. In all three locations, the moisture stress caused by extreme heat and dry weather during the growing season resulted in lower yields, plant height, seed weight, and seed size. It also caused both flowering and maturing to occur five to seven days earlier than average. However, seed protein levels were higher. The best yields were recorded in Box Butte County while yields were significantly lower in Cheyenne and Perkins counties, primarily due to moisture stress. The online link for full variety trial results for peas is <https://cropwatch.unl.edu/varietytest/othercrops>.

**TABLE A. LOCATIONS, COOPERATORS, PLANTING AND HARVEST DATES OF NEBRASKA PEA TRIAL PLOTS**

Location	Cooperator	Latitude	Longitude	Soil Series	Tillage	Previous Crop	Planted	Harvested
Box Butte Rainfed	Mark Watson; Alliance, NE	42.2784	-102.8680	Lamo loam	No-till	corn	4/17/2020	7/19/2020
Cheyenne Rainfed	UNL High Plains Ag Lab; Sidney, NE	41.2360	-102.9975	Alliance loam	No-till	corn	4/8/2020	7/11/2020
Perkins Rainfed	Steve Tucker; Venango, NE	40.7927	-101.9733	Mace silt loam	No-till	wheat	4/2/2020	7/10/2020

**TABLE B - PEA ENTRANTS AND CONTACT INFORMATION**

Entrant	Address	Phone	Website
Legume Logic	206 5th Avenue Sw Crosby, ND 58730	701-965-6058	NA
Meridian Seeds	16553 37th St SE, Suite 3 Mapleton, ND 58059	866-282-7333	meridianseeds.com
ND Crop Improvement & Seed Association	1360 Albrecht Blvd, Fargo, ND 58102	701-231-8067	ndcropimprovement.com
ProGene Plant Research	860 S. Crestline Othello, WA 99344	509-488-3977	progenellc.com
Pulse USA	2002 Northern Plains Drive Bismarck, ND 58504	701-530-0734	pulseusa.com
Valesco Genetics	5 West Mendenhall St, Suite 202 Bozeman, MT 59715	406-647-6946	valescogenetics.com



## NEBRASKA PEA VARIETY TRIAL - 2020

Variety	Brand	Average Yield (bu/a)[1]	Box Butte Yield (lb/a)	Cheyenne Yield (lb/a)**	Perkins Yield (lb/a)***	Test Weight (lb/bu)	Flowering (June day)[2]	Seed Protein (% dry basis)	1000 Seed Wt (g)
CDC Inca	Meridian Seeds	18.3	1871	466	957	51	8-June	27.57	181
Durwood	Pulse USA	17.3	1680	472	985	50	6-June	27.38	187
Empire	Valesco Genetics	16.0	1549	347	979	47	7-June	27.97	187
PRO 133-6243	ProGene	16.0	1650	384	845	47	5-June	28.11	214
Nette 2010	Pulse USA	16.0	1651	361	811	47	7-June	26.66	200
Jetset	Meridian Seeds	16.0	1819	312	805	44	6-June	28.24	201
CDC Spectrum	Meridian Seeds	16.0	1757	330	790	44	8-June	28.83	193
AAC Profit	Valesco Genetics	16.0	1624	535	743	50	8-June	27.95	192
CDC Saffron	Meridian Seeds	16.0	1780	524	538	45	8-June	28.79	183
AAC Carver	Meridian Seeds	15.3	1710	431	621	46	8-June	26.37	194
SW Midas	Pulse USA	15.0	1279	348	1055	47	8-June	27.19	185
DS Admiral	Pulse USA	15.0	1370	393	918	49	7-June	26.91	202
LG Sunrise	Pulse USA	15.0	1561	284	826	45	7-June	27.31	191
PRO 143-6230	ProGene	15.0	1621	242	811	44	7-June	28.01	181
Majestic	Pulse USA	15.0	1701	435	594	44	7-June	27.86	182
DL Apollo	Pulse USA	14.7	1626	345	684	45	8-June	29.01	187
Cronos	Valesco Genetics	14.3	1321	366	892	47	8-June	26.58	177
Shamrock*	Valesco Genetics	14.3	1427	309	847	46	7-June	27.85	191
Salamanca	Valesco Genetics	14.3	1485	446	635	46	7-June	28.57	203
AAC Chrome	Valesco Genetics	14.0	1523	417	579	44	8-June	27.54	194
Korando	Pulse USA	14.0	1553	431	514	43	6-June	27.94	205
Hyline	Valesco Genetics	13.7	1627	400	423	41	8-June	27.41	197
ND Hampton*	ND Crop Improvement	13.0	1226	304	847	45	8-June	29.02	191
LG Amigo	Pulse USA	13.0	1311	487	515	44	8-June	28.13	192
Yellowstone	ProGene	13.0	1489	417	446	43	7-June	27.48	213
ND Dawn	ND Crop Improvement	13.0	1630	316	406	38	8-June	27.44	197
PRO 141-6258*	ProGene	12.7	1185	299	775	44	7-June	27.03	187
GINNY 2	ProGene	12.7	1309	407	525	43	8-June	27.71	193
AAC Asher	Legume Logic	.	.	.	963	.	.	.	.
CDC Dakota	Legume Logic	.	.	.	885	.	.	.	.
Orchestra	Legume Logic	.	.	.	805	.	.	.	.
PRO 153-7409	ProGene	.	.	.	767	.	.	.	.
MS-19YP3	Meridian Seeds	.	.	.	717	.	.	.	.
<b>Average of all entries</b>		<b>15.0</b>	<b>1547</b>	<b>386</b>	<b>742</b>	<b>45</b>	<b>7-June</b>	<b>27.74</b>	<b>193</b>
<b>LSD [Difference required at 5% sign.]</b>		<b>4.0</b>	<b>290</b>	<b>177</b>	<b>293</b>	<b>10</b>	<b>2</b>	<b>1.36</b>	<b>18</b>
<b>Coefficient of variation [3]</b>		<b>18</b>	<b>13</b>	<b>33</b>	<b>28</b>	<b>13</b>	<b>1</b>	<b>3</b>	<b>6</b>

\* Green cotyledon type pea; \*\*Very poor yield; \*\*\*poor yield - water stress

[1] Yield adjusted to 13% moisture.

[2] Coefficient of Variation (CV) indicates the quality of a trial, and lower than 15 indicates a high quality trial. For CV>15, there was higher than expected variability in the field or the data and the results should be used with caution.

## NEBRASKA PEA VARIETY TRIALS 2018 - 2020

Variety	Brand	Yield (bu/a)[1]	Test Weight (lbs/bu)	Flowering Julian days	Flowering June day	Seed Protein (% dry basis)
<b>Two year averages</b>						
CDC Spectrum	Meridian Seeds	22	50	165	14	26.69
DS Admiral	Pulse USA	21	52	164	13	25.69
CDC Saffron	Meridian Seeds	20	51	165	14	26.52
CDC Inca	Meridian Seeds	19	54	166	15	26.56
LG Sunrise	Pulse USA	19	49	164	13	25.94
AAC Carver	Meridian Seeds	18	51	164	14	25.20
AAC Profit	Valesco Genetics	18	54	166	15	26.74
Durwood	Pulse USA	18	53	164	13	26.23
Jetset	Meridian Seeds	18	50	164	13	26.52
PRO 133-6243	ProGene Plant Res.	18	49	161	11	25.87
PRO 143-6230	ProGene Plant Res.	18	49	163	12	27.14
SW Midas	Pulse USA	18	52	165	15	25.72
DL Apollo	Pulse USA	18	50	164	14	26.98
Salamanca	Valesco Genetics	18	51	165	14	27.12
Nette 2010	Pulse USA	17	51	164	13	25.44
LG Amigo	Pulse USA	17	49	163	13	26.46
<b>Average of all entries</b>		<b>18</b>	<b>50</b>	<b>164</b>	<b>13</b>	<b>26.19</b>
<b>LSD [Difference required at 5% sign.]</b>		<b>13</b>	<b>7</b>	<b>2</b>	<b>2</b>	<b>2.18</b>
<b>Coefficient of variation [3]</b>		<b>11</b>	<b>9</b>	<b>2</b>	<b>1</b>	<b>2</b>
<b>Three year averages</b>						
CDC Spectrum	Meridian Seeds	33	58	163	13	25.74
CDC Saffron	Meridian Seeds	32	59	163	12	24.95
AAC Profit	Valesco Genetics	32	60	164	13	26.09
CDC Inca	Meridian Seeds	31	60	164	14	25.75
AAC Carver	Meridian Seeds	30	60	163	12	23.38
Durwood	Pulse USA	29	59	162	12	25.38
LG Sunrise	Pulse USA	28	58	162	12	24.59
DS Admiral	Pulse USA	28	59	162	11	24.44
Salamanca	Valesco Genetics	28	59	163	12	26.15
Nette 2010	Pulse USA	28	59	162	11	24.48
Jetset	Meridian Seeds	27	58	162	11	24.18
SW Midas	Pulse USA	26	59	163	12	24.05
LG Amigo	Pulse USA	25	58	161	11	25.40
DL Apollo	Pulse USA	24	58	166	16	26.90
<b>Average of all entries</b>		<b>29</b>	<b>59</b>	<b>163</b>	<b>12</b>	<b>24.77</b>
<b>LSD [Difference required at 5% sign.]</b>		<b>13</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>2.02</b>
<b>Coefficient of variation [2]</b>		<b>10</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>1</b>

[1] Yield adjusted to 13% moisture.

[2] Coefficient of Variation (CV) indicates the quality of a trial, and lower than 15 indicates a high quality trial. For CV>15, there was higher than expected variability in the field or the data and the results should be used with caution.

## NEBRASKA SPRING WHEAT TRIAL - 2020

### LOCATIONS, COOPERATORS, PLANTING AND HARVEST DATES OF PLOTS

Location	Cooperator	Latitude	Longitude	Planted	Harvested	Average Yield (bu/a)
Cheyenne County	UNL High Plains Ag Lab; Sidney, NE	41.233966	-103.003239	3/26/200	7/24/2020	9.7
Dawes County	Mark Detzen; Whitney, NE	42.6889	-103.2244	4/9/2020	7/27/2020	15.2
Perkins County	UNL Stumpf International Wheat Center; Grant, NE	40.850604	-101.695796	3/11/2020	7/23/2020	11.9
Red Willow County	Peters Seed Farm; McCook, NE	40.156667	-100.806389	3/13/2020	7/23/2020	22.5

### SPRING WHEAT VARIETY TRIAL YIELDS - 2020

#### CHEYENNE, DAWES, RED WILLOW, AND PERKINS COUNTIES

Variety	Brand	Cheyenne	Dawes	Red Willow	Perkins	Average	Test
		Yield (bu/a)[1]	Yield (bu/a)	Yield (bu/a)	Yield (bu/a)	Yield (bu/a)	Weight (lb/bu)
LCS Cannon	Limagrain Cereal Seeds	9.7	17.1	14.2	25.9	16.7	57.7
ND VitPro	NDCIA[2]	9.6	14.8	13.7	28.8	16.7	56.4
WB9606	WestBred	10.7	16.8	11.2	26.9	16.4	58.5
ND Frohberg	NDCIA	11.6	17.0	10.8	24.9	16.0	56.8
WB9590	WestBred	9.7	14.7	13.1	25.7	15.8	55.4
LCS Rebel	Limagrain Cereal Seeds	10.7	17.7	11.2	23.0	15.7	61.3
Surpass	South Dakota State University	11.1	.	12.0	23.3	15.4	59.9
WB7202CLP	WestBred	7.4	15.9	12.8	23.4	14.9	53.2
WB7696	WestBred	6.4	14.8	11.3	26.3	14.7	62.2
LCS Trigger	Limagrain Cereal Seeds	11.1	16.2	9.1	22.4	14.7	55.2
CP3530	CROPLAN by WinfieldUnited	7.3	16.1	12.0	22.9	14.6	63.4
WB9719	WestBred	10.6	14.3	13.4	19.9	14.6	53.3
Prevail	South Dakota State University	8.5	.	14.4	18.3	13.7	52.4
Boost	South Dakota State University	10.9	14.4	11.6	17.5	13.6	.
LNR-2076	Limagrain Cereal Seeds	11.4	11.6	10.7	20.4	13.5	53.2
CP3915	CROPLAN by WinfieldUnited	9.6	13.5	9.8	17.4	12.6	56.6
SY Rustler	AgriPro-Syngenta	8.1	13.3	10.7	14.8	11.7	56.6
<b>Mean performance of all entries in the trial.</b>		<b>9.7</b>	<b>15.2</b>	<b>11.9</b>	<b>22.5</b>	<b>14.8</b>	<b>57.0</b>
<b>Standard error</b>		<b>1.4</b>	<b>1.7</b>	<b>2.0</b>	<b>4.7</b>	<b>1.4</b>	<b>3.5</b>
<b>LSD [3]</b>		<b>2.4</b>	<b>2.9</b>	<b>NS</b>	<b>NS</b>	<b>.</b>	<b>.</b>
<b>Coefficient of variation [4]</b>		<b>15.8</b>	<b>10.7</b>	<b>.</b>	<b>.</b>	<b>.</b>	<b>.</b>

[1] Yield values corrected to 12% moisture.

[2] NDCIA; North Dakota Crop Improvement Association

[3] For differences between varieties that are equal to or greater than the LSD value, the chance that the difference is significant is 90%.

[4] Coefficient of Variation (CV) indicates the quality of a trial, and lower than 15 indicates a high quality trial. For CV>15, there was higher than expected variability in the field or the data and the results should be used with caution.





## SPRING WHEAT VARIETY TRIAL PROTEIN CONTENT - 2020 CHEYENNE, DAWES, RED WILLOW, AND PERKINS COUNTIES

Variety	Brand	Cheyenne Protein (%) <sup>[1]</sup>	Dawes Protein (%)	Red Willow Protein (%)	Perkins Protein (%)	Average Protein (%)
LCS Cannon	Limagrain Cereal Seeds	13.1	12.4	17.9	16.0	14.8
ND VitPro	NDCIA <sup>[2]</sup>	14.2	13.5	18.8	14.9	15.4
WB9606	WestBred	12.9	12.2	17.4	14.7	14.3
ND Frohberg	NDCIA	14.1	14.0	18.7	15.6	15.6
WB9590	WestBred	14.4	14.2	19.1	15.4	15.8
LCS Rebel	Limagrain Cereal Seeds	13.6	12.5	19.5	16.4	15.5
Surpass	South Dakota State University	12.7	.	18.5	16.0	15.7
WB7202CLP	WestBred	12.7	11.9	18.4	15.8	14.7
WB7696	WestBred	12.7	12.5	19.1	15.4	14.9
LCS Trigger	Limagrain Cereal Seeds	13.2	12.3	19.1	17.0	15.4
CP3530	CROPLAN by WinfieldUnited	13.5	13.0	19.2	15.1	15.2
WB9719	WestBred	13.6	13.5	18.8	15.6	15.4
Prevail	South Dakota State University	13.2	.	18.2	16.5	16.0
Boost	South Dakota State University	14.7	14.0	18.4	16.8	16.0
LNR-2076	Limagrain Cereal Seeds	14.0	13.0	18.0	15.4	15.1
CP3915	CROPLAN by WinfieldUnited	13.6	13.5	19.7	16.8	15.9
SY Rustler	AgriPro-Syngenta	13.7	14.2	18.7	16.6	15.8
<b>Mean performance of all entries in the trial.</b>		<b>13.5</b>	<b>13.1</b>	<b>18.7</b>	<b>15.9</b>	<b>15.4</b>
<b>Standard error</b>		<b>0.4</b>	<b>0.5</b>	<b>0.3</b>	<b>0.9</b>	<b>0.5</b>
<b>LSD <sup>[3]</sup></b>		<b>0.7</b>	<b>0.9</b>	<b>0.5</b>	<b>NS</b>	<b>.</b>
<b>Coefficient of variation <sup>[4]</sup></b>		<b>4.5</b>	<b>5.8</b>	<b>3.1</b>	<b>.</b>	<b>.</b>

[1] Grain protein values corrected to 14% moisture.

[2] NDCIA; North Dakota Crop Improvement Association

[3] For differences between varieties that are equal to or greater than the LSD value, the chance that the difference is significant is 90%.

[4] Coefficient of Variation (CV) indicates the quality of a trial, and lower than 15 indicates a high quality trial. For CV>15, there was higher than expected variability in the field or the data and the results should be used with caution.

## SPRING WHEAT VARIETY TRIAL QUALITY DATA\* - 2020 CHEYENNE, DAWES, RED WILLOW, AND PERKINS COUNTIES

Variety	Falling Number (sec) [1]	SKCS Data [2]		Flour Characteristics [3]		Farinograph Data [4]		Baking Data [5]		
		Hardness Index	TKW (g)	Flour Protein (%)	Flour Extraction (%)	Absorption (%)	Stability (minutes)	Mix time, low (minutes)	Volume (cc)	Height (in)
CP3530	407.5	71.0	25.7	16.0	69.8	67.1	22.9	20.0	2600	4.78
CP3915	427.5	71.9	23.9	14.8	69.4	64.6	17.1	19.0	2717	4.93
LCS Cannon	400.5	75.6	26.2	13.9	70.8	64.5	20.5	19.5	2675	4.92
LCS Rebel	423.3	69.2	27.3	15.0	70.6	66.7	23.3	20.0	2642	4.80
LCS Trigger	448.5	78.9	26.2	13.5	70.7	67.2	15.4	9.0	2675	4.68
LNR-2076	392.0	70.1	25.2	14.2	71.1	63.1	23.2	18.0	2575	4.51
ND Frohberg	403.0	68.5	26.4	15.1	70.5	66.1	21.4	17.5	2688	4.62
ND VitPro	420.5	71.2	25.8	15.2	72.3	65.6	16.4	20.0	2600	4.56
Prevail	363.0	68.4	27.3	15.0	70.1	66.1	18.7	20.0	2575	4.68
Surpass	374.5	70.0	23.4	14.4	73.0	64.1	14.8	19.0	2800	4.92
SY Rustler	369.0	73.2	26.4	15.6	69.5	66.5	16.0	19.0	2700	4.62
WB7202CLP	380.5	70.8	25.2	14.3	71.1	62.9	23.2	-	-	-
WB7696	368.7	65.8	26.6	14.8	72.4	63.0	22.6	18.0	2775	4.75
WB9590	373.7	66.7	26.6	15.7	71.4	64.9	21.9	20.0	2650	4.56
WB9606	355.5	70.5	26.8	13.6	71.3	64.5	13.8	12.3	2683	4.78
WB9719	380.7	72.4	26.0	15.0	69.8	65.4	22.9	20.0	2750	4.98
<b>Mean of all entries.</b>	<b>393.0</b>	<b>70.9</b>	<b>25.9</b>	<b>14.7</b>	<b>70.9</b>	<b>65.1</b>	<b>19.6</b>	<b>18.1</b>	<b>2674</b>	<b>4.74</b>
<b>Standard error</b>	<b>26.8</b>	<b>3.2</b>	<b>1.1</b>	<b>0.7</b>	<b>1.1</b>	<b>1.4</b>	<b>3.5</b>	<b>3.2</b>	<b>69</b>	<b>0.15</b>

\*Quality Data is from Ardent Mills.

[1] Values based on 12% moisture. The falling number is the time in seconds for a stirrer to fall through a hot slurry of ground wheat. The greater the amount of alpha-amylase in the wheat, the thinner the gelatinized starch paste, the faster the plunger will fall through the slurry, and thus lower the quality.

[2] SKCS Hardness Index classifies a true hard wheat as having a value above 50, preferably above 75. SKCS TKW is the thousand kernel weight as determined using a Single Kernel Characterization Machine. The values here are low for spring wheat, where TKW is generally above 30, but this is likely due to the difficult growing conditions.

[3] Flour protein is calculated as the percent protein of the ground flour and is adjusted to 14% moisture. Extraction % is the amount of flour produced from the whole grain.

[4] Farinograph data examines dough mixing. The absorption is the percentage of water absorbed by the flour. All entries met the minimum of 62, with most exceeding the ideal value of 64. Stability times were ideal with all varieties exceeding the preferred score of 13 minutes.

[5] Baking data includes mix time, where only a handful of varieties fell in the optimal window (13-18 minutes). Baking volume was greater than 2650 cc for most entries, and about half had an ideal bake height of more than 4.75".

# NEBRASKA FORAGE OATS VARIETY TRIALS - 2020

## CULTURAL PRACTICES

The irrigated forage oats trial conducted at Sidney (N.41.25122; W. 103.00290) in Cheyenne County was planted on April 24th and harvested on August 4th. 100 lbs/acre seed was planted into conventionally tilled soil. Individual plots were 8 rows wide with 7.5" spacing and 30 feet long. The plots were fertilized with 30 lbs/acre N with 48 lbs/acre N residual and 1.5 lbs/acre atrazine was used for weed control. Total water was 4 inches (irrigation) and 3.1 inches (rainfall).

## CHEYENNE CO. IRRIGATED FORAGE OATS VARIETY TRIAL - 2020

Variety	Brand	Dry Matter yield (lbs/a)	Crude Protein (% Dry Basis)	ADF (% Dry Basis)	TDN (% Dry Basis -ADF)	NE/Maint (Mcal/cwt Dry Basis -ADF)	NE/Gain (Mcal/cwt Dry Basis -ADF)	NE/Lact (Mcal/cwt Dry Basis -ADF)	Plant height (inch)
Kona	ProGene LLC	5633	14.5	35.2	62.4	63.0	36.6	65.3	30
NZA 739/7	ProGene LLC	5431	14.0	35.1	62.5	63.2	36.8	65.5	30
Goliath	ProGene LLC	5373	13.1	35.5	62.1	62.5	36.2	65.0	34
ND Heart	ND Crop Improvement	5325	11.5	37.5	59.9	59.2	33.2	62.5	35
Intimidator	ProGene LLC	5179	16.1	35.8	61.8	62.0	35.8	64.6	35
Proleaf 234	ProGene LLC	5084	16.0	33.8	64.1	65.4	38.8	67.1	29
Jerry	ProGene LLC	4973	11.5	37.0	60.4	60.0	34.0	63.2	34
Everleaf 156	ProGene LLC	4941	20.3	33.3	64.6	66.3	39.6	67.7	24
Monida	ProGene LLC	4926	14.2	34.5	63.3	64.3	37.8	66.3	29
Rockford	ND Crop Improvement	4923	13.5	35.3	62.3	62.9	36.6	65.3	31
Everleaf 256	ProGene LLC	4634	18.3	34.5	63.2	64.2	37.7	66.2	25
CS Camden	Meridian Seeds	4455	15.0	34.8	62.9	63.8	37.4	65.9	26
<b>Average of all entries</b>		<b>5073</b>	<b>14.8</b>	<b>35.1</b>	<b>62.4</b>	<b>63.1</b>	<b>36.7</b>	<b>65.4</b>	<b>30</b>
<b>LSD [1]</b>		<b>847</b>	<b>1.9</b>	<b>1.6</b>	<b>1.8</b>	<b>2.6</b>	<b>2.4</b>	<b>1.9</b>	<b>2.5</b>
<b>Coefficient of variation [2]</b>		<b>12</b>	<b>9</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>5</b>	<b>2</b>	<b>6</b>

[1] For differences between varieties that are equal to or greater than the LSD value, the chance that the difference is significant is 95%.

[2] Coefficient of Variation (CV) indicates the quality of a trial, and lower than 15 indicates a high quality trial. For CV>15, there was higher than expected variability in the field or the data and the results should be used with caution.









## UNIVERSITY OF NEBRASKA VARIETY TESTING PROGRAM

<http://cropwatch.unl.edu/varietytest>

### **PROVIDED BY**

University of Nebraska-Lincoln Extension  
Institute of Agriculture and Natural Resources  
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