





Iowa's Official Variety Trials

IOWA STATE UNIVERSITY

Department of Agronomy

A summary of replicated research by Iowa Crop Improvement Association.



Iowa Crop Improvement Association

Iowa Crop Performance Tests—Soybeans

is conducted each year to provide information farmers need to select the best varieties for their production conditions. Yield trial information, testing procedures, and more can be found at **croptesting.iastate.edu.**

Testing Procedures

Seed companies, lowa Crop Improvement Association, and Iowa State University are eligible to enter varieties in the Iowa Crop Performance Tests—Soybeans. There are three testing districts and five testing sites within each district (Figure 1). Entries were subdivided into experiments based on relative maturity, providing an early-season and full-season test within each district. In 2021, over 136 varieties from 14 companies were tested in more than 170 district-by-variety combinations.

Each entry was replicated four times in four-row plots at a planting rate of 140,000 seeds per acre at each location. Row spacing was 30 inches, plot length was 20 feet, and planted row length was 17.4 feet. The center two rows of each plot were harvested with a soybean plot combine. A moisture determination was made from each plot and yields were corrected to 13 percent moisture. Yield determinations are based on a 20 foot plot, which includes the planted row plus the alley. This is because area in alleys may contribute to the yield of plants at the ends of planted rows.

Information Layout

Tables 3-5 contain two-year averages of agronomic information from a maximum of five locations each year. Current year district averages are shown in Tables 6-11, and entries are reported in either the early-season or full-season tests within each district. These tables contain a mean yield and adjusted gross value based on all locations within the district. In addition, there are yield estimates based on the western fields and the eastern fields within a district. In these estimates, the location in the center of the district is used in both subcomponents. Each of these tables also contains the single-location yield for each entry. More detailed information is available at croptesting.iastate.edu.



Least Squares Means

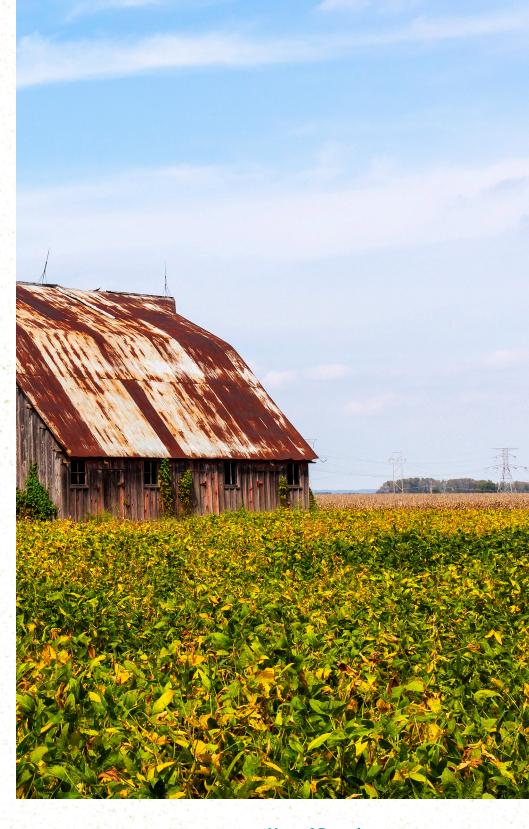
All trait means in all tables were computed using least squares means. In cases where some values are missing, this provides the best estimates of trait values across replications, locations, and years. Least squares means are not equivalent to simple arithmetic means like those computed in a spreadsheet program using raw data or location means. Least squares means should always be used in multiple-comparison tests like the lowa Crop Performance Tests.

Interpretation of Results

Statistical analysis identifies the portion of yield differences due to variation in soil types, soil fertility, moisture availability, insect infestation, and diseases; plus any variation due to planting and harvesting techniques. The least significant difference (LSD) values for yield represent, in bushels per acre, the amount of yield variation that could be due to variations in the factors just mentioned. In comparing varieties, yield differences greater than the LSD value can be attributed to differences in the yield potential of these varieties; yield differences less than the LSD value are not statistically different and could have been due to other factors.

Maturity ratings for varieties are estimates and may vary across seasons. Yield comparisons should be made among varieties of similar maturity.

Growing conditions vary at each location. Stressful conditions, such as drought, extended periods of high temperature, or excess rainfall may affect some locations more than others. It is important to select varieties having stable performance over a range of environmental conditions because it is not certain how next year's growing season will develop. High yields for two or more consecutive years indicate stable performance. If two-year means are not available, regional averages consisting of several locations should be used to make selection decisions. Performance data from a single location have a very low predictive probability and should not be relied upon for variety selection decisions.



Supplemental yield and agronomic information about specific varieties may be obtained from seed dealers, crop consultants, and from neighbors who have grown these varieties.

Use of Data in Advertisements

Specific advertising statements by a company about the performance of its entries must accurately reflect the published data.

Iowa Crop Performance Tests staff pictured below (left to right): Ryan Budnik, Todd Nelson, & Aaron Sassman.



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The presentation of data for the varieties tested does not imply endorsement by the authors or the agencies conducting the test.

Iowa Crop Performance Tests offers unbiased, third-party information to Iowa growers on the adaptation and performance of corn hybrids and soybean varieties. The latest results are available at **croptesting.iastate.edu.**

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For More Information

- For more information about the lowa Crop Performance Tests, see croptesting.iastate.edu.
- For information about Iowa Crop Improvement Association, visit iowacrop.org.
- For questions or comments contact:

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Figure 1.
Test locations for the 2021 Iowa Crop Performance Tests—Soybean

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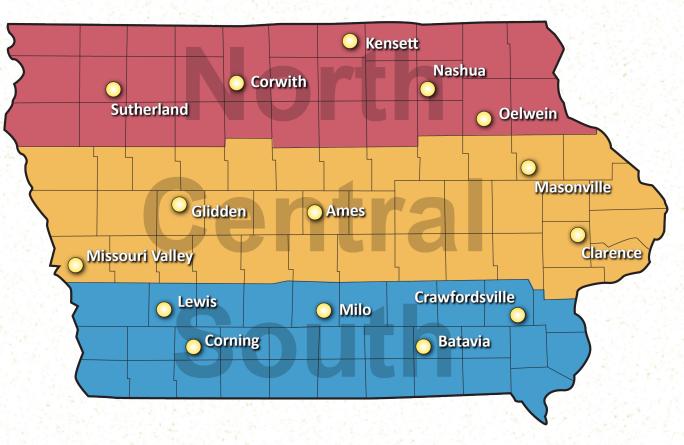


Table 1. General information for the 2021 soybean test.

Location and Cooperator	Soil Type	Planting Date	Harvest Date	Avg Yield Bu/Acre
North				
Sutherland, Terry Tuttle	Marcus/Primghar/Galva silty clay loam	3-May	8-Oct	65.6
Corwith, Norm & Jonathan Chambers	Canisteo clay loam, Kossuth silty clay loam	4-May	12-Oct	66.0
Kensett, Justin Faber	Moland/Merton loam	5-May	Discard	
Nashua, Ken Pecinovsky	Readlyn silt loam, Kenyon loam	5-May	18-Oct	54.0
Oelwein, Heath Geiselman	Clyde clay loam	7-May	20-Oct	60.2
Central				
Missouri Valley, Dean McIntosh	Kennebec silt loam	13-May	8-Oct	87.8
Glidden, David & Andy Theilen	Clarion loam, Bemis moraine, Nicollet loam	4-May	4-0ct	61.9
Ames, Mike Fiscus	Canisteo, Clarion, Nicolett, Bemis moraine	7-May	9-0ct	80.3
Masonville, Dennis Lindsay	Kenyon loam	7-May	6-Oct	60.5
Clarence, Dave Elijah	Tama/Muscatine silty clay loam	7-May	18-Oct	83.4
South		1.5		
Lewis, Dallas Maxwell	Marshall/Exira silty clay laom	6-May	15-Oct	75.5
Corning, Chris Gaesser	Macksburg-Nira, Macksburg silty clay loam	6-May	15-Oct	69.1
Milo, Craig & Adam Hill	Givin silt loam	5-May	29-Sep	66.1
Batavia, Pat Hammes	Taintor silty clay loam	6-May	30-Sep	53.6
Crawfordsville, Cody Schneider	Mahaska silty clay loam	6-May	5-Oct	70.9

Table 2. Seed treatment and other data descriptions.

Seed Treatment

ACL+ILVO Acceleron Standard + ILeVO

CM CruiserMaxx

CMV CruiserMaxx Vibrance

CruiserMaxx Vibrance + Saltro CMV+Salt

E-VIP+Salt Elevate VIP + Saltro

LMGN Lumisena + Evergol Energy + L2030G + Gaucho

No Seed Treatment None

Eclipse Trio and N-force + Saltro Other

PV+ILVO Poncho-VOTiVO + ILeVO

Herb Tech: Herbicide Technology

Conventional, no herbicide traits

E3 Enlist E3

LLGT27 Balance GT + LL

RR2X Roundup Ready 2 Xtend

RR2XF Roundup Ready 2 XtendFlex

Yield: Bushels per acre, adjusted to 13% moisture basis

MG: Maturity group indicated by variety name

AGV: Adjusted Gross Value, based on a price per bushel of \$10.50 and does not include shrinkage factors

In 2021, we evaluated over 136 varieties from 14 companies, in more than 170 district-by-variety combinations. Entries were distributed in three districts and two experiments per district.

Each experiment was grown at five locations, with four replicates of each entry at each location.

Table 3. North district 2-year means, 2020-2021.

North	early	/-season	varieties	, MG ≤ 2.2

Company	Variety	MG	Herb Tech	Yield Bu/A	NW Yield Bu/A	NE Yield Bu/A	AGV \$
Pioneer	P21A28X	2.1	RR2X	64.8	65.4	64.7	713
Dyna-Gro	S21EN81	2.1	E3	63.9	65.3	64.3	703
Credenz	CZ 2121GTLL	2.1	LLGT27	62.8	63.0	63.7	691
Renk	G2190GL	2.1	LLGT27	62.5	64.0	62.8	688
Credenz	CZ 1660GTLL	1.6	LLGT27	61.3	62.3	62.0	674
Iowa State	IAS19C3	1.9	Conv	61.2	62.7	61.1	673
Renk	G2150E	2.1	E3	61.1	60.9	61.9	672
NuTech/G2 Genetics	22N02E	2.2	E3	60.9	62.0	61.1	670
NuTech/G2 Genetics	20N04E	2.0	E3	60.2	61.4	59.9	662
Dyna-Gro	S19EN21	1.9	E3	60.0	60.6	60.0	661
Viking	2155N	2.1	Conv	58.2	60.2	58.0	640
Viking	2188AT12N	2.2	Conv	56.5	61.0	53.3	622
Viking	2018N	2.0	Conv	55.7	56.8	55.7	613
Viking	O.e1993	1.9	Conv	54.2	55.5	53.2	596
Viking	1940KN	1.9	Conv	52.7	55.4	51.3	579
Experiment Mean				60.1	61.5	59.8	
LSD(0.25)				2.6	3.4	3.6	

North full-season varieties, MG > 2.2

Company	Variety	MG	Herb Tech	Yield Bu/A	NW Yield Bu/A	NE Yield Bu/A	AGV \$
Pioneer	P27A17X	2.7	RR2X	67.8	66.7	69.6	746
Credenz	CZ 2760GTLL	2.7	LLGT27	64.7	65.0	64.3	711
Cornelius	CB24X64	2.4	RR2X	63.9	64.7	63.7	703
Renk	G2550E	2.5	E3	63.6	63.3	64.3	699
Renk	RS248NX	2.4	RR2X	62.6	64.6	62.7	688
Xitavo	XO 2501E	2.5	E3	62.3	62.7	62.5	686
NuTech/G2 Genetics	24N04E	2.4	E3	61.6	63.0	61.2	677
Iowa State	IAS25C1	2.5	Conv	61.0	63.6	60.1	671
Viking	2340KN	2.3	Conv	60.2	61.2	59.6	663
Viking	2418N	2.4	Conv	60.2	62.5	57.9	662
Experiment Mean				63.4	64.1	63.6	
LSD(0.25)				2.6	3.4	3.6	



Table 4. Central district 2-year means, 2020-2021.

Central	early-	season	varieties,	MG < 2.7
Gennai	earry-:	seasun	varieties,	IVIU \ Z.

Company	Variety	MG	Herb Tech	Yield Bu/A	CW Yield Bu/A	CE Yield Bu/A	AGV \$
Cornelius	CB27X81	2.7	RR2X	70.0	68.4	69.4	770
Renk	G2550E	2.5	E3	69.3	68.3	71.7	763
Pioneer	P27A17X	2.7	RR2X	69.0	66.3	70.9	759
Credenz	CZ 2760GTLL	2.7	LLGT27	68.5	66.1	70.8	754
Xitavo	XO 2501E	2.5	E3	67.8	65.4	69.5	746
Credenz	CZ 2550GTLL	2.5	LLGT27	67.8	66.4	69.0	746
Dyna-Gro	S27EN89	2.7	E3	67.5	66.6	67.6	742
Renk	RS248NX	2.4	RR2X	66.5	65.2	67.2	731
Viking	0.2702	2.7	Conv	65.9	65.6	66.4	725
P3 Genetics	2126E	2.6	E3	65.6	63.2	67.2	721
NuTech/G2 Genetics	24N04E	2.4	E3	64.9	62.7	67.4	714
Iowa State	IAS25C1	2.5	Conv	64.8	63.7	64.8	713
Viking	2418N	2.4	Conv	61.8	61.3	63.0	680
Experiment Mean				65.8	63.8	67.3	
LSD(0.25)				2.6	3.8	3.1	

Central full-season varieties, MG > 2.7

Company	Variety	MG	Herb Tech	Yield Bu/A	CW Yield Bu/A	CE Yield Bu/A	AGV \$
Xitavo	X0 3131E	3.1	E3	69.6	67.5	72.9	766
Credenz	CZ 3099GTLL	3.0	LLGT27	68.6	67.2	68.9	755
NuTech/G2 Genetics	31N06E	3.1	E3	68.5	66.9	71.4	753
Iowa State	IAS31C1	3.1	Conv	67.4	66.0	68.7	742
Pioneer	P31A22X	3.1	RR2X	67.2	66.6	67.4	739
P3 Genetics	1928E	2.8	E3	66.9	65.3	68.1	736
Xitavo	XO 2921E	2.9	E3	66.4	65.1	67.6	730
NuTech/G2 Genetics	30N05E	3.0	E3	65.6	64.5	67.8	722
NuTech/G2 Genetics	28N02E	2.8	E3	65.2	61.8	68.8	717
Experiment Mean				67.3	66.2	68.6	
LSD(0.25)				2.6	3.8	3.1	

Table 5. South district 2-year means, 2020-2021.

South early-season varieties, $MG \le 3.2$

Company	Variety	MG	Herb Tech	Yield Bu/A	SW Yield Bu/A	SE Yield Bu/A	AGV \$
NuTech/G2 Genetics	31N06E	3.1	E3	71.0	72.6	72.5	782
Xitavo	X0 3131E	3.1	E3	70.3	73.1	69.6	774
Credenz	CZ 3099GTLL	3.0	LLGT27	68.9	72.4	68.4	758
Pioneer	P31A22X	3.1	RR2X	67.2	72.5	64.1	740
NuTech/G2 Genetics	28N02E	2.8	E3	66.1	69.1	64.5	727
NuTech/G2 Genetics	30N05E	3.0	E3	65.3	68.1	64.2	718
Xitavo	XO 2921E	2.9	E3	63.7	68.2	60.7	701
Iowa State	IAS31C1	3.1	Conv	62.1	67.5	58.1	683
Experiment Mean				65.4	69.7	63.0	
LSD(0.25)				2.7	3.1	5.3	

South full-season varieties, MG > 3.2

Company	Variety	MG	Herb Tech	Yield Bu/A	SW Yield Bu/A	SE Yield Bu/A	AGV \$
Credenz	CZ 3309GTLL	3.3	LLGT27	71.3	74.3	72.2	785
NuTech/G2 Genetics	35N03E	3.5	E3	70.7	73.1	69.6	778
Xitavo	XO 3651E	3.6	E3	70.6	73.9	68.3	777
P3 Genetics	2136E	3.6	E3	69.8	74.4	66.6	768
Credenz	CZ 3750GTLL	3.7	LLGT27	68.3	71.6	65.9	751
NuTech/G2 Genetics	39N05E	3.9	E3	68.0	71.5	65.9	748
NuTech/G2 Genetics	39N04E	3.9	E3	67.8	70.1	66.6	746
Xitavo	XO 3341E	3.3	E3	67.1	72.7	64.5	738
P3 Genetics	2039E	3.9	E3	67.0	70.1	66.0	736
Pioneer	P33A53X	3.3	RR2X	66.6	71.7	64.6	733
NuTech/G2 Genetics	34N06E	3.4	E3	66.1	69.3	65.2	727
Pioneer	P37A27X	3.7	RR2X	61.1	64.4	55.4	673
Experiment Mean				68.4	71.9	66.6	
LSD(0.25)				2.7	3.1	5.3	



				-	trict Me			<u> 1.2</u>		Single	Location	Yield	
Company	Variety	MG	Herb Tech	Yield Bu/A	NW Yield	NE Yield		Sutl	nerland	Corwith	Kensett	Nashua	0elweii
Pioneer	P21A28X	2.1	RR2X	66.9	69.0	63.7		_	65.6	72.7		60.1	69.5
Xitavo	XO 1822E	1.8	E3	64.9	71.0	59.5			67.7	69.5		60.0	61.8
Xitavo	XO 1632E	1.6	E3	64.5	69.7	61.8			69.8	67.2		58.4	62.8
Golden Harvest	GH2102XF	2.1	RR2XF	64.4	66.3	60.6			67.7	66.3		57.6	65.7
P3 Genetics	2218E	1.8	E3	64.4	69.9	59.0			67.5	71.0		54.6	64.2
Golden Harvest	GH1802E3	1.8	E3	62.9	66.4	61.4			62.1	69.6		56.2	64.3
Renk	G2260E	2.2	E3	62.6	69.0	55.5			68.0	68.2		53.4	59.7
Renk	G2150E	2.1	E3	62.5	66.5	58.6			67.9	66.0		52.2	64.6
Xitavo	XO 2181E	2.1	E3	62.5	69.4	57.1			67.9	69.2		51.3	61.9
Dyna-Gro	S21EN81	2.1	E3	62.3	67.2	59.5			69.4	65.0		51.3	64.0
Credenz	CZ 2121GTLL	2.1	LLGT27	62.2	64.1	58.7			69.1	61.9		51.0	67.3
Renk	G2190GL	2.1	LLGT27	61.8	65.7	57.5			69.1	61.6		55.5	60.4
P3 Genetics	2220E	2	E3	61.8	66.6	55.6			63.7	68.0		56.1	59.1
NuTech/G2 Genetics	22N02E	2.2	E3	61.7	62.8	60.4			63.5	65.0		53.4	64.9
Golden Harvest	GH2292E3	2.2	E3	61.6	64.1	58.7			66.5	60.7	-	55.5	63.3
Xitavo	X0 2282E	2.2	E3	61.0	62.6	58.5			61.6	63.6	This	58.6	59.8
Cornelius	CB21XF55	2.1	RR2X	60.7	62.5	57.6			63.9	62.2	; te	55.0	61.3
Credenz	CZ 1660GTLL	1.6	LLGT27	60.7	61.6	58.9			64.4	61.4	S	52.4	64.7
Xitavo	XO 1971E	1.9	E3	60.4	62.5	56.1			64.2	61.0	st wa	49.6	66.7
Cornelius	CB20XF71	2	RR2XF	60.4	66.7	56.3			64.9	65.5	~ ~	48.9	62.1
P3 Genetics	2222E	2.2	E3	60.2	63.1	56.8			62.7	63.5	S	52.8	61.3
Cornelius	CB22XF02	2.2	RR2XF	60.2	67.0	52.0			66.5	65.8	disc	49.4	58.2
Asgrow	AG20XF1	2	RR2XF	60.0	66.6	54.9			66.3	66.8	SC	53.9	52.5
Renk	G2060E	2	E3	60.0	70.0	52.8			67.9	67.2	ar	52.2	53.1
Iowa State	IAS19C3	1.9	Conv	59.9	62.1	57.2			65.6	60.8	Q	53.2	60.9
Dyna-Gro	S19EN21	1.9	E3	59.9	63.9	56.7			65.7	61.6	ed	47.8	64.9
Dyna-Gro	S21XF72	2.1	RR2XF	59.8	64.7	54.8			64.0	65.1		54.5	56.5
Virtue Seeds	V2122	2.1	Conv	59.6	66.9	53.2			68.7	67.9		47.7	55.3
Renk	RS212NFX	2.1	RR2XF	59.5	64.6	54.3			59.9	69.6		52.2	56.1
Viking	2018N	2	Conv	59.5	64.2	56.8			63.5	60.9		53.2	60.3
NuTech/G2 Genetics	20N04E	2	E3	59.5	64.1	55.3			65.8	63.0		51.1	57.5
NuTech/G2 Genetics	21N06E	2.1	E3	58.2	61.8	55.0			66.3	58.4		49.1	59.0
Viking	2155N	2.1	Conv	58.1	64.8	49.7			66.7	62.3		51.5	51.1
Iowa State	IA2102	2	Conv	57.9	62.9	52.0			61.9	64.7		52.1	52.7
Xitavo	X0 1761E	1.7	E3	56.8	60.3	55.9			61.5	59.0		48.0	59.4
NuTech/G2 Genetics	18N02E	1.8	E3	55.8	60.5	51.6			63.7	57.8		48.5	52.7
Viking	0.2244AT	2.2	Conv	55.5	59.7	52.3			59.3	59.9		51.2	51.9
Viking	2188AT12N	2.2	Conv	55.2	64.9	46.5			65.1	61.9		51.0	41.4
Viking	O.e1993	1.9	Conv	52.0	58.0	45.1			58.6	56.9		46.2	46.8
Viking	1940KN	1.9	Conv	51.6	59.3	45.5			63.8	55.3		41.7	44.4
Experiment Mean				60.2			7		65.2	64.1		52.5	59.1
Minimum Mean				51.6				ş Çivl	58.6	55.3		41.7	41.4
Maximum Mean				66.9				1	69.8	72.7		60.1	69.5
LSD(0.25)			Water William	2.9					2.2	3.2		4.6	4.2
Coefficient of Variabil	itu			6.3					3.7	5.2		9.0	7.3

Table 7. North district, 2021 district and single-location means. Full-season test, MG > 2.2.

				Dis	trict Me	ans		Single	Location	Yield	
Company	Variety	MG	Herb Tech	Yield Bu/A	NW Yield	NE Yield	Sutherland	Corwith	Kensett	Nashua	Oelwein
Pioneer	P27A17X	2.7	RR2X	70.9	71.9	70.3	70.1	73.1		65.8	74.9
Pioneer	P25A04X	2.5	RR2X	68.7	68.4	69.0	63.9	72.0		65.6	72.0
Pioneer	P23A15X	2.3	RR2X	66.9	69.3	64.6	67.0	71.8		59.1	69.6
Golden Harvest	GH2562XF	2.5	RR2XF	66.2	69.2	62.1	67.1	72.3		56.4	68.6
Renk	G2550E	2.5	E3	66.0	66.7	65.9	68.7	66.1		61.1	68.6
NuTech/G2 Genetics	26N06E	2.6	E3	65.5	72.3	60.4	69.1	74.9		53.0	64.9
Credenz	CZ 2760GTLL	2.7	LLGT27	65.2	68.0	62.1	66.3	69.9		61.6	62.9
Credenz	CZ 2550GTLL	2.5	LLGT27	64.7	69.8	61.4	67.4	70.5	-	54.7	66.5
Dyna-Gro	S25EN02	2.5	E3	64.2	69.5	59.6	67.4	72.0	⊒.	58.8	59.2
Cornelius	CB24X64	2.4	RR2X	63.9	69.9	60.4	65.0	72.2	S	54.5	63.7
Renk	RS248NX	2.4	RR2X	63.7	67.1	61.3	66.0	69.5	9	53.9	66.1
Xitavo	X0 2472E	2.4	E3	63.6	65.6	60.4	64.7	67.7	This test was	56.5	65.9
Golden Harvest	GH2442E3	2.4	E3	63.5	66.6	59.6	64.1	71.0	\{\}	54.5	64.7
Asgrow	AG22XF2	2.2	RR2XF	63.5	68.5	61.4	67.4	66.9	Se	56.2	63.5
Golden Harvest	GH2722XF	2.7	RR2XF	63.5	68.4	58.3	66.0	71.2		53.9	63.4
Cornelius	CB23XF63	2.3	RR2XF	63.2	66.6	62.4	66.0	65.8	disca	48.8	72.1
Dyna-Gro	S23ES32	2.3	E3	63.2	67.1	58.8	67.1	67.9	a	57.6	59.6
P3 Genetics	2223E	2.3	E3	63.1	67.3	57.8	64.8	71.5	rded.	56.8	59.8
Xitavo	XO 2501E	2.5	E3	63.1	68.5	56.5	65.8	69.1	е	56.1	60.6
Viking	2418N	2.4	Conv	63.0	69.1	57.6	69.4	67.9		52.9	61.3
Renk	RS242NXF	2.4	RR2XF	62.7	64.0	61.9	63.6	66.5		57.4	62.9
Cornelius	CB24XF18	2.4	RR2XF	62.6	63.3	63.0	65.0	63.8		57.2	65.1
Dyna-Gro	S24XF12	2.4	RR2XF	61.6	63.3	58.6	63.4	64.1		59.1	59.7
Viking	2340KN	2.3	Conv	61.5	66.8	58.5	65.2	67.1		54.8	59.7
NuTech/G2 Genetics	24N04E	2.4	E3	61.2	65.8	56.7	65.7	66.2		57.0	56.7
Credenz	CZ 2360GTLL	2.3	LLGT27	61.2	66.7	54.2	66.8	68.2		52.8	56.5
Iowa State	IAS25C1	2.5	Conv	58.1	62.2	51.6	66.1	61.6		55.3	50.0
Experiment Mean				63.9			66.3	68.9		56.7	63.6
Minimum Mean				58.1			63.4	61.6		48.8	50.0
Maximum Mean				70.9			70.1	74.9		65.8	74.9
LSD(0.25)				2.9			2.2	3.2		4.6	4.2
Coefficient of Variabili	ity			6.3			3.7	5.2		9.0	7.3



Table 8. Central district, 2021 district and single-location means. Early-season test, MG ≤ 2.7.

Company					Dis	strict Me	ans	Single Location Yie				eld		
Renk G2550E 2.5 E3 78.2 75.2 74.2 91.6 60.7 87.8 61.5	Company	Variety	MG			CW Yield	CE Yield	Missouri Valley	Glidden	Ames		Clarence		
Credenz			2.5							87.8	61.5	89.3		
Pioneer	Cornelius	CB27X81	2.7	RR2X	77.2	76.8	74.8	90.8	66.7	79.4	65.5	84.2		
Golden Harvest GH2722XF 2.7 RR2XF 76.1 73.6 75.0 89.2 56.1 81.2 67.1 Xitavo XO 2501E 2.5 E3 75.7 76.9 71.9 86.3 66.1 79.7 63.2 Viking 0.2702 2.7 Conv 75.5 75.2 69.5 88.9 64.2 84.3 58.6 NuTech/G2 Genetics 26N06E 2.6 E3 75.2 77.5 80.5 90.9 62.6 74.6 62.1 Credenz CZ 2550GTLL 2.5 LLGT27 75.2 79.0 71.2 91.0 65.9 78.6 62.4 Viking 2418N 2.4 Conv 74.7 73.9 70.8 90.1 56.4 84.2 59.0 Pioneer P25A04X 2.5 RR2X 74.6 77.9 75.9 89.4 66.0 75.7 59.4 Cornelius CB26XF76 2.6 RR2XF 74.6 74.3 69.3 87.7 63.1 79.9 58.9 P3 Genetics 2126E 2.6 E3 74.6 71.7 73.4 86.5 58.2 79.1 65.5 Dyna-Gro S27EN89 2.7 E3 74.3 72.6 70.5 83.7 56.3 80.9 83.1 60.7 Pioneer P23A15X 2.3 RR2X 73.8 78.5 69.3 82.9 68.7 78.5 63.1 Renk RS248NX 2.4 RR2X 73.5 70.0 70.5 83.7 56.3 80.1 63.1 Golden Harvest GH2562XF 2.5 RR2XF 73.4 72.2 72.3 83.2 59.3 81.5 64.0 Credenz CZ 2360GTLL 2.3 LLGT27 73.2 72.7 68.3 79.5 63.3 80.5 59.7 Golden Harvest GH2292E3 2.2 E3 72.9 71.7 74.9 88.9 57.6 73.6 61.6 Dyna-Gro S25EN02 2.5 E3 72.0 71.7 74.9 88.9 57.6 73.6 61.6 Dyna-Gro S25EN02 2.5 E3 72.0 75.5 67.7 83.3 61.9 78.0 56.0 lowa State IAS25C1 2.5 Conv 71.9 74.1 63.4 86.1 62.1 78.6 53.0 NuTech/G2 Genetics CH2042E3 2.4 E3 71.9 72.9 71.0 86.4 59.0 76.9 60.3 Golden Harvest GH242E3 2.4 E3 71.9 67.3 71.5 80.3 58.1 78.8 57.6 Renk RS242NXF 2.4 RR2XF 71.7 70.8 67.2 79.2 60.8 77.4 62.0 Asgrow AG24XF1 2.4 RR2XF 71.7 70.8 67.2 79.2 60.8 77.4 62.0 Asgrow AG24XF1 2.4 RR2XF 71.7 71.5 65.9 83.0 60.0 73.3 54.7 Cornelius CB27XF34 2.7 RR2XF 70.1 66.6 72.6 78.3 53.4 73.3 53.0 Maximum Mean	Credenz	CZ 2760GTLL	2.7	LLGT27	76.8	75.4	78.4	90.6	58.6	83.3	62.4	87.2		
Xitavo XO 2501E 2.5 E3 75.7 76.9 71.9 86.3 66.1 79.7 63.2 Viking 0.2702 2.7 Conv 75.5 75.2 69.5 88.9 64.2 84.3 58.6 NuTech/G2 Genetics 26N06E 2.6 E3 75.2 77.5 80.5 90.9 62.6 74.6 62.1 Credenz CZ 2550GTLL 2.5 LLGTZ 75.2 79.0 71.2 91.0 65.9 78.6 62.4 Viking 2418N 2.4 Conv 74.7 73.9 70.8 90.1 56.4 84.2 59.0 Pioneer P25A04X 2.5 RR2X 74.6 77.9 75.9 89.4 66.0 75.7 59.4 Cornelius CB26XF76 2.6 RR2XF 74.6 74.3 69.3 87.7 63.1 79.9 58.9 P3 Genetics 2126E 2.6 E3 74.6 71.7 73.4	Pioneer	P27A17X	2.7	RR2X	76.8	74.4	79.6	91.3	57.3	80.5	69.1	86.2		
Xitavo XO 2501E 2.5 E3 75.7 76.9 71.9 86.3 66.1 79.7 63.2 Viking 0.2702 2.7 Conv 75.5 75.2 69.5 88.9 64.2 84.3 58.6 NuTech/G2 Genetics 26N06E 2.6 E3 75.2 77.5 80.5 90.9 62.6 74.6 62.1 Viking 2418N 2.4 Conv 74.7 73.9 70.8 90.1 56.4 84.2 59.0 Pioneer P25A04X 2.5 RR2X 74.6 77.9 75.9 89.4 66.0 75.7 59.4 Cornelius CB26XF76 2.6 RR2XF 74.6 77.3 75.9 89.4 66.0 75.7 59.4 Cornelius CB26XF76 2.6 RR2XF 74.6 71.7 73.4 86.5 58.2 79.1 65.5 Dyna-Gro S27EN89 2.7 E3 74.6 71.7 73.4	Golden Harvest		2.7		76.1	73.6	75.0					86.7		
Viking 0.2702 2.7 Conv 75.5 75.2 69.5 88.9 64.2 84.3 58.6 NuTech/G2 Genetics 26N06E 2.6 E3 75.2 77.5 80.5 90.9 62.6 74.6 62.1 Credenz CZ 2550GTLL 2.5 LLGT27 75.2 79.0 71.2 91.0 65.9 78.6 62.4 Viking 2418N 2.4 Conv 74.7 73.9 70.8 90.1 56.4 84.2 59.0 Pioneer P25A04X 2.5 RR2X 74.6 77.9 75.9 89.4 66.0 75.7 59.4 Cornelius CB26K76 2.6 RR2XF 74.6 71.7 73.4 86.5 58.2 79.1 65.5 Dyna-Gro S27EN89 2.7 E3 74.3 72.6 70.5 85.8 60.9 83.1 60.7 Renk RS248NX 2.3 RR2X 73.5 70.0 70.5	Xitavo	XO 2501E	2.5	E3	75.7	76.9			66.1			84.2		
NuTech/G2 Genetics												82.9		
Credenz CZ 2550GTLL 2.5 LLGT27 75.2 79.0 71.2 91.0 65.9 78.6 62.4 Viking 2418N 2.4 Conv 74.7 73.9 70.8 90.1 56.4 84.2 59.0 Pioneer P25A04X 2.5 RR2X 74.6 77.9 75.9 89.4 66.0 75.7 59.4 Cornelius CB26XF76 2.6 RR2XF 74.6 74.3 69.3 87.7 63.1 79.9 58.9 P3 Genetics 2126E 2.6 E3 74.6 71.7 73.4 86.5 58.2 79.1 65.5 Dyna-Gro S27EN89 2.7 E3 74.3 72.6 70.5 85.8 60.9 83.1 60.7 Pioneer P23A15X 2.3 RR2X 73.8 78.5 69.3 82.9 68.7 78.5 63.1 Renk RS248NX 2.4 RR2X 73.5 70.0 70.5 <td< td=""><td>ŭ .</td><td></td><td></td><td>E3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>84.6</td></td<>	ŭ .			E3								84.6		
Viking 2418N 2.4 Conv 74.7 73.9 70.8 90.1 56.4 84.2 59.0 Pioneer P25A04X 2.5 RR2X 74.6 77.9 75.9 89.4 66.0 75.7 59.4 Cornelius CB26XF76 2.6 RR2XF 74.6 74.3 69.3 87.7 63.1 79.9 58.9 P3 Genetics 2126E 2.6 E3 74.6 71.7 73.4 86.5 58.2 79.1 65.5 Dyna-Gro S27EN89 2.7 E3 74.3 72.6 70.5 85.8 60.9 83.1 60.7 Pioneer P23A15X 2.3 RR2X 73.8 78.5 69.3 82.9 68.7 78.5 63.1 Renk RS248NX 2.4 RR2X 73.5 70.0 70.5 83.7 56.3 80.1 63.1 Golden Harvest GH2562XF 2.5 RR2XF 73.4 72.2 72.3	Credenz	CZ 2550GTLL	2.5	LLGT27	75.2	79.0	71.2	91.0	65.9	78.6	62.4	80.4		
Pioneer P25A04X 2.5 RR2X 74.6 77.9 75.9 89.4 66.0 75.7 59.4 Cornelius CB26XF76 2.6 RR2XF 74.6 74.3 69.3 87.7 63.1 79.9 58.9 P3 Genetics 2126E 2.6 E3 74.6 71.7 73.4 86.5 58.2 79.1 65.5 Dyna-Gro S27EN89 2.7 E3 74.3 72.6 70.5 85.8 60.9 83.1 60.7 Pioneer P23A15X 2.3 RR2X 73.8 78.5 69.3 82.9 68.7 78.5 63.1 Renk RS248NX 2.4 RR2X 73.5 70.0 70.5 83.7 56.3 80.1 63.1 Golden Harvest GH2562XF 2.5 RR2XF 73.4 72.2 72.3 83.2 59.3 81.5 64.0 Credenz CZ 2360GTLL 2.3 LLGT27 73.2 72.7 68.3												84.6		
Cornelius CB26XF76 2.6 RR2XF 74.6 74.3 69.3 87.7 63.1 79.9 58.9 P3 Genetics 2126E 2.6 E3 74.6 71.7 73.4 86.5 58.2 79.1 65.5 Dyna-Gro S27EN89 2.7 E3 74.3 72.6 70.5 85.8 60.9 83.1 60.7 Pioneer P23A15X 2.3 RR2X 73.8 78.5 69.3 82.9 68.7 78.5 63.1 Renk RS248NX 2.4 RR2X 73.5 70.0 70.5 83.7 56.3 80.1 63.1 Golden Harvest GH2562XF 2.5 RR2XF 73.4 72.2 72.3 83.2 59.3 81.5 64.0 Credenz CZ 2360GTLL 2.3 LLGT27 73.2 72.7 68.3 79.5 63.3 80.5 59.7 Golden Harvest GH2292E3 2.2 E3 72.9 71.7 74.												83.5		
P3 Genetics 2126E 2.6 E3 74.6 71.7 73.4 86.5 58.2 79.1 65.5 Dyna-Gro S27EN89 2.7 E3 74.3 72.6 70.5 85.8 60.9 83.1 60.7 Pioneer P23A15X 2.3 RR2X 73.8 78.5 69.3 82.9 68.7 78.5 63.1 Renk RS248NX 2.4 RR2X 73.5 70.0 70.5 83.7 56.3 80.1 63.1 Golden Harvest GH2562XF 2.5 RR2XF 73.4 72.2 72.3 83.2 59.3 81.5 64.0 Credenz CZ 2360GTLL 2.3 LLGT27 73.2 72.7 68.3 79.5 63.3 80.5 59.7 Golden Harvest GH2292E3 2.2 E3 72.9 71.7 74.9 88.9 57.6 73.6 61.6 Dyna-Gro S25EN02 2.5 E3 72.0 75.5 67.7 <td></td> <td>83.9</td>												83.9		
Dyna-Gro S27EN89 2.7 E3 74.3 72.6 70.5 85.8 60.9 83.1 60.7 Pioneer P23A15X 2.3 RR2X 73.8 78.5 69.3 82.9 68.7 78.5 63.1 Renk RS248NX 2.4 RR2X 73.5 70.0 70.5 83.7 56.3 80.1 63.1 Golden Harvest GH2562XF 2.5 RR2XF 73.4 72.2 72.3 83.2 59.3 81.5 64.0 Credenz CZ 2360GTLL 2.3 LLGT27 73.2 72.7 68.3 79.5 63.3 80.5 59.7 Golden Harvest GH2292E3 2.2 E3 72.9 71.7 74.9 88.9 57.6 73.6 61.6 Dyna-Gro S25EN02 2.5 E3 72.0 75.5 67.7 83.3 61.9 78.0 56.0 Iowa State IAS25C1 2.5 Conv 71.9 74.1 63.4<	P3 Genetics			E3	74.6							83.0		
Pioneer P23A15X 2.3 RR2X 73.8 78.5 69.3 82.9 68.7 78.5 63.1 Renk RS248NX 2.4 RR2X 73.5 70.0 70.5 83.7 56.3 80.1 63.1 Golden Harvest GH2562XF 2.5 RR2XF 73.4 72.2 72.3 83.2 59.3 81.5 64.0 Credenz CZ 2360GTLL 2.3 LLGT27 73.2 72.7 68.3 79.5 63.3 80.5 59.7 Golden Harvest GH2292E3 2.2 E3 72.9 71.7 74.9 88.9 57.6 73.6 61.6 Dyna-Gro S25EN02 2.5 E3 72.0 75.5 67.7 83.3 61.9 78.0 56.0 lowa State IAS25C1 2.5 Conv 71.9 74.1 63.4 86.1 62.1 78.6 53.0 NuTech/G2 Genetics 24N04E 2.4 E3 71.9 72.9												81.0		
Renk RS248NX 2.4 RR2X 73.5 70.0 70.5 83.7 56.3 80.1 63.1 Golden Harvest GH2562XF 2.5 RR2XF 73.4 72.2 72.3 83.2 59.3 81.5 64.0 Credenz CZ 2360GTLL 2.3 LLGT27 73.2 72.7 68.3 79.5 63.3 80.5 59.7 Golden Harvest GH2292E3 2.2 E3 72.9 71.7 74.9 88.9 57.6 73.6 61.6 Dyna-Gro S25EN02 2.5 E3 72.0 75.5 67.7 83.3 61.9 78.0 56.0 Iowa State IAS25C1 2.5 Conv 71.9 74.1 63.4 86.1 62.1 78.6 53.0 NuTech/G2 Genetics 24N04E 2.4 E3 71.9 72.9 71.0 86.4 59.0 76.9 60.3 Golden Harvest GH2442E3 2.4 E3 71.9 67.3 71.5 80.3 58.1 78.8 57.6 Renk RS242NXF<												79.0		
Golden Harvest GH2562XF 2.5 RR2XF 73.4 72.2 72.3 83.2 59.3 81.5 64.0 Credenz CZ 2360GTLL 2.3 LLGT27 73.2 72.7 68.3 79.5 63.3 80.5 59.7 Golden Harvest GH2292E3 2.2 E3 72.9 71.7 74.9 88.9 57.6 73.6 61.6 Dyna-Gro S25EN02 2.5 E3 72.0 75.5 67.7 83.3 61.9 78.0 56.0 lowa State IAS25C1 2.5 Conv 71.9 74.1 63.4 86.1 62.1 78.6 53.0 NuTech/G2 Genetics 24N04E 2.4 E3 71.9 72.9 71.0 86.4 59.0 76.9 60.3 Golden Harvest GH2442E3 2.4 E3 71.9 67.3 71.5 80.3 58.1 78.8 57.6 Renk RS242NXF 2.4 RR2XF 71.7 70.8												81.6		
Credenz CZ 2360GTLL 2.3 LLGT27 73.2 72.7 68.3 79.5 63.3 80.5 59.7 Golden Harvest GH2292E3 2.2 E3 72.9 71.7 74.9 88.9 57.6 73.6 61.6 Dyna-Gro S25EN02 2.5 E3 72.0 75.5 67.7 83.3 61.9 78.0 56.0 Iowa State IAS25C1 2.5 Conv 71.9 74.1 63.4 86.1 62.1 78.6 53.0 NuTech/G2 Genetics 24N04E 2.4 E3 71.9 72.9 71.0 86.4 59.0 76.9 60.3 Golden Harvest GH2442E3 2.4 E3 71.9 67.3 71.5 80.3 58.1 78.8 57.6 Renk RS242NXF 2.4 RR2XF 71.7 70.8 67.2 79.2 60.8 77.4 62.0 Asgrow AG24XF1 2.4 RR2XF 70.1 71.7 <												78.2		
Golden Harvest GH2292E3 2.2 E3 72.9 71.7 74.9 88.9 57.6 73.6 61.6 Dyna-Gro S25EN02 2.5 E3 72.0 75.5 67.7 83.3 61.9 78.0 56.0 Iowa State IAS25C1 2.5 Conv 71.9 74.1 63.4 86.1 62.1 78.6 53.0 NuTech/G2 Genetics 24N04E 2.4 E3 71.9 72.9 71.0 86.4 59.0 76.9 60.3 Golden Harvest GH2442E3 2.4 E3 71.9 67.3 71.5 80.3 58.1 78.8 57.6 Renk RS242NXF 2.4 RR2XF 71.7 70.8 67.2 79.2 60.8 77.4 62.0 Asgrow AG24XF1 2.4 RR2XF 71.1 71.5 65.9 83.0 60.0 73.3 54.7 Cornelius CB27XF34 2.7 RR2XF 70.1 66.6 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>84.5</td></td<>												84.5		
Dyna-Gro S25EN02 2.5 E3 72.0 75.5 67.7 83.3 61.9 78.0 56.0 Iowa State IAS25C1 2.5 Conv 71.9 74.1 63.4 86.1 62.1 78.6 53.0 NuTech/G2 Genetics 24N04E 2.4 E3 71.9 72.9 71.0 86.4 59.0 76.9 60.3 Golden Harvest GH2442E3 2.4 E3 71.9 67.3 71.5 80.3 58.1 78.8 57.6 Renk RS242NXF 2.4 RR2XF 71.7 70.8 67.2 79.2 60.8 77.4 62.0 Asgrow AG24XF1 2.4 RR2XF 71.1 71.5 65.9 83.0 60.0 73.3 54.7 Cornelius CB27XF34 2.7 RR2XF 70.4 68.9 65.8 82.6 57.5 74.9 54.1 Dyna-Gro S24XF12 2.4 RR2XF 70.1 66.6 72.	Golden Harvest											81.8		
Iowa State IAS25C1 2.5 Conv 71.9 74.1 63.4 86.1 62.1 78.6 53.0 NuTech/G2 Genetics 24N04E 2.4 E3 71.9 72.9 71.0 86.4 59.0 76.9 60.3 Golden Harvest GH2442E3 2.4 E3 71.9 67.3 71.5 80.3 58.1 78.8 57.6 Renk RS242NXF 2.4 RR2XF 71.7 70.8 67.2 79.2 60.8 77.4 62.0 Asgrow AG24XF1 2.4 RR2XF 71.1 71.5 65.9 83.0 60.0 73.3 54.7 Cornelius CB27XF34 2.7 RR2XF 70.4 68.9 65.8 82.6 57.5 74.9 54.1 Dyna-Gro S24XF12 2.4 RR2XF 70.1 66.6 72.6 78.3 53.4 73.3 61.6 Experiment Mean 74.8 86.2 60.8 79.1 61.0 Minimum Mean 69.8 78.3 53.4 73.3 53.0 <tr< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>82.3</td></tr<>												82.3		
NuTech/G2 Genetics 24N04E 2.4 E3 71.9 72.9 71.0 86.4 59.0 76.9 60.3 Golden Harvest GH2442E3 2.4 E3 71.9 67.3 71.5 80.3 58.1 78.8 57.6 Renk RS242NXF 2.4 RR2XF 71.7 70.8 67.2 79.2 60.8 77.4 62.0 Asgrow AG24XF1 2.4 RR2XF 71.1 71.5 65.9 83.0 60.0 73.3 54.7 Cornelius CB27XF34 2.7 RR2XF 70.4 68.9 65.8 82.6 57.5 74.9 54.1 Dyna-Gro S24XF12 2.4 RR2XF 70.1 66.6 72.6 78.3 53.4 73.3 61.6 Experiment Mean 74.8 86.2 60.8 79.1 61.0 Minimum Mean 69.8 78.3 53.4 73.3 53.0 Maximum Mean 80.7 91.6 68.7 87.8 69.1	•											80.0		
Golden Harvest GH2442E3 2.4 E3 71.9 67.3 71.5 80.3 58.1 78.8 57.6 Renk RS242NXF 2.4 RR2XF 71.7 70.8 67.2 79.2 60.8 77.4 62.0 Asgrow AG24XF1 2.4 RR2XF 71.1 71.5 65.9 83.0 60.0 73.3 54.7 Cornelius CB27XF34 2.7 RR2XF 70.4 68.9 65.8 82.6 57.5 74.9 54.1 Dyna-Gro S24XF12 2.4 RR2XF 70.1 66.6 72.6 78.3 53.4 73.3 61.6 Experiment Mean 74.8 86.2 60.8 79.1 61.0 Minimum Mean 69.8 78.3 53.4 73.3 53.0 Maximum Mean 80.7 91.6 68.7 87.8 69.1												77.4		
Renk RS242NXF 2.4 RR2XF 71.7 70.8 67.2 79.2 60.8 77.4 62.0 Asgrow AG24XF1 2.4 RR2XF 71.1 71.5 65.9 83.0 60.0 73.3 54.7 Cornelius CB27XF34 2.7 RR2XF 70.4 68.9 65.8 82.6 57.5 74.9 54.1 Dyna-Gro S24XF12 2.4 RR2XF 70.1 66.6 72.6 78.3 53.4 73.3 61.6 Experiment Mean 74.8 86.2 60.8 79.1 61.0 Minimum Mean 69.8 78.3 53.4 73.3 53.0 Maximum Mean 80.7 91.6 68.7 87.8 69.1												83.6		
Asgrow AG24XF1 2.4 RR2XF 71.1 71.5 65.9 83.0 60.0 73.3 54.7 Cornelius CB27XF34 2.7 RR2XF 70.4 68.9 65.8 82.6 57.5 74.9 54.1 Dyna-Gro S24XF12 2.4 RR2XF 70.1 66.6 72.6 78.3 53.4 73.3 61.6 Experiment Mean 74.8 86.2 60.8 79.1 61.0 Minimum Mean 69.8 78.3 53.4 73.3 53.0 Maximum Mean 80.7 91.6 68.7 87.8 69.1												80.9		
Cornelius CB27XF34 2.7 RR2XF 70.4 68.9 65.8 82.6 57.5 74.9 54.1 Dyna-Gro S24XF12 2.4 RR2XF 70.1 66.6 72.6 78.3 53.4 73.3 61.6 Experiment Mean 74.8 86.2 60.8 79.1 61.0 Minimum Mean 69.8 78.3 53.4 73.3 53.0 Maximum Mean 80.7 91.6 68.7 87.8 69.1												85.1		
Dyna-Gro S24XF12 2.4 RR2XF 70.1 66.6 72.6 78.3 53.4 73.3 61.6 Experiment Mean 74.8 86.2 60.8 79.1 61.0 Minimum Mean 69.8 78.3 53.4 73.3 53.0 Maximum Mean 80.7 91.6 68.7 87.8 69.1	· ·											81.5		
Minimum Mean 69.8 78.3 53.4 73.3 53.0 Maximum Mean 80.7 91.6 68.7 87.8 69.1												83.1		
Maximum Mean 80.7 91.6 68.7 87.8 69.1	Experiment Mean				74.8			86.2	60.8	79.1	61.0	83.0		
	Minimum Mean				69.8	400		78.3	53.4	73.3	53.0	77.4		
LSD(0.25) 2.3 3.1 4.1 2.7 2.7	Maximum Mean				80.7			91.6	68.7	87.8	69.1	89.3		
	LSD(0.25)				2.3			3.1	4.1	2.7	2.7	4.9		
Coefficient of Variability 5.2 3.8 7.6 3.7 4.8	Coefficient of Variabili	ty			5.2			3.8	7.6	3.7	4.8	6.1		

Table 9. Central district, 2021 district and single-location means. Full-season test, MG > 2.7.

				Dis	strict Me	ans		Single	Location	n Yield	
Company	Variety	MG	Herb Tech	Yield Bu/A	CW Yield	CE Yield	Missouri Valley	Glidden	Ames	Mason- ville	Clarence
Pioneer	P28A42X	2.8	RR2X	80.7	84.1	79.1	96.6	66.8	86.2	66.8	85.8
NuTech/G2 Genetics	31N06E	3.1	E3	78.6	78.5	74.1	90.7	66.3	86.7	62.3	87.2
Iowa State	IAS31C1	3.1	Conv	76.9	78.5	78.4	90.5	66.2	79.9	61.3	84.8
Dyna-Gro	S29EN62	2.9	E3	76.7	78.5	64.5	92.0	63.8	89.9	59.4	79.8
P3 Genetics	2229E	3	E3	76.7	79.7	69.6	91.7	66.2	82.6	62.9	81.8
Xitavo	X0 3131E	3.1	E3	76.6	75.2	78.7	88.4	62.2	84.0	62.7	85.0
Dyna-Gro	S28EN22	2.8	E3	76.6	74.2	73.4	88.0	64.6	78.2	62.2	88.0
Asgrow	AG29XF2	2.9	RR2XF	76.5	75.5	76.6	86.9	60.5	85.2	62.0	85.9
Golden Harvest	GH2922E3	2.9	E3	76.5	80.0	68.4	91.1	67.8	80.6	62.1	80.5
Xitavo	X0 2832E	2.8	E3	76.5	77.2	71.7	90.5	62.9	83.6	58.4	87.4
Cornelius	CB31XF42	3.1	RR2XF	76.5	78.0	72.0	87.5	66.3	84.3	60.7	85.0
Cornelius	CB29XF09	2.9	RR2XF	76.5	71.8	73.3	89.5	57.4	85.1	61.0	89.2
Renk	RS322NXF	3.2	RR2XF	76.4	76.1	69.9	89.5	64.9	79.1	60.2	86.8
P3 Genetics	2231E	3.1	E3	76.3	79.3	77.4	90.6	66.1	76.1	58.2	89.2
NuTech/G2 Genetics	29N02E	2.9	E3	76.0	79.0	71.3	91.8	58.6	82.8	65.0	81.9
Golden Harvest	GH3132E3	3.1	E3	75.8	77.0	69.0	91.4	63.1	80.7	60.7	82.5
Renk	G2960E	2.9	E3	75.8	79.3	73.9	90.1	62.0	84.5	56.6	87.6
Pioneer	P31A22X	3.1	RR2X	75.1	78.8	67.2	94.8	62.4	80.7	58.1	80.2
Dyna-Gro	S31XF82	3.1	RR2XF	75.0	73.5	67.9	85.9	64.2	80.0	59.5	83.0
Don Mario	DM28F52	2.8	RR2XF	74.8	73.7	66.1	92.1	61.2	85.1	54.8	80.7
P3 Genetics	1928E	2.8	E3	74.6	72.1	78.0	90.7	57.8	77.7	64.4	83.2
Credenz	CZ 3099GTLL	3	LLGT27	74.3	77.5	70.9	87.1	68.5	78.0	57.6	78.9
Golden Harvest	GH3192XF	3.1	RR2XF	74.2	74.5	72.3	87.4	59.3	83.8	61.6	79.5
Golden Harvest	GH2872XF	2.8	RR2XF	74.1	74.2	69.0	87.3	61.7	79.7	58.4	84.0
Xitavo	XO 2921E	2.9	E3	74.1	77.7	70.4	92.5	63.1	75.2	57.4	84.3
NuTech/G2 Genetics	30N05E	3	E3	73.9	75.7	71.8	86.0	63.6	78.9	60.7	82.2
NuTech/G2 Genetics	28N02E	2.8	E3	73.5	71.0	74.0	82.9	57.5	80.6	59.4	87.3
Dyna-Gro	S28XF92S	2.8	RR2XF	72.7	74.9	66.4	85.7	62.4	78.8	55.3	81.8
Asgrow	AG26XF2	2.6	RR2XF	71.8	70.0	73.9	82.4	57.7	75.5	62.3	80.6
Virtue Seeds	V3122	3.1	Conv	69.8	73.8	58.9	82.5	63.6	76.8	50.6	77.8
Experiment Mean				74.8			89.1	63.0	81.3	60.1	83.7
Minimum Mean				69.8			82.4	57.4	75.2	50.6	77.8
Maximum Mean				80.7			96.6	68.5	89.9	66.8	89.2
LSD(0.25)				2.3			3.1	4.1	2.7	2.7	4.9
Coefficient of Variability				5.2			3.8	7.6	3.7	4.8	6.1



Table 10. South district, 2021 district and single-location means. Early-season test, MG ≤ 3.2.

			District Means			Single Location Yield					
Company	Variety	MG	Herb Tech	Yield Bu/A	SW Yield	SE Yield	Lewis	Corning	Milo	Batavia	Crawfords- ville
NuTech/G2 Genetics	31N06E	3.1	E3	73.4	74.8	69.8	78.7	75.1	70.5	62.8	78.7
Xitavo	X0 3131E	3.1	E3	71.7	73.8	66.8	84.2	68.4	69.1	57.8	78.6
Credenz	CZ 3099GTLL	3	LLGT27	69.5	74.1	67.8	78.5	66.6	71.2	55.9	73.8
Pioneer	P28A42X	2.8	RR2X	68.1	73.9	63.6	79.7	73.9	68.9	52.7	64.9
NuTech/G2 Genetics	30N05E	3	E3	67.6	69.6	66.9	77.6	67.9	64.1	54.6	73.4
Dyna-Gro	S29EN62	2.9	E3	67.2	71.9	62.3	76.2	71.7	66.5	57.0	64.4
Pioneer	P31A22X	3.1	RR2X	67.0	73.6	61.5	77.8	70.5	68.9	49.5	68.0
Viking	0.3118N	3.1	Conv	66.7	67.1	64.7	73.9	66.0	64.4	58.1	71.1
Dyna-Gro	S31XF82	3.1	RR2XF	66.7	67.8	64.6	69.4	69.8	66.2	58.3	70.5
Dyna-Gro	S28EN22	2.8	E3 .	66.5	70.4	63.5	73.9	71.3	65.7	51.6	69.8
Virtue Seeds	V3122	3.1	Conv	66.1	66.4	64.3	72.4	68.3	60.2	59.5	71.4
NuTech/G2 Genetics	29N02E	2.9	E3	66.1	72.2	63.2	75.6	73.5	65.7	48.6	67.1
NuTech/G2 Genetics	28N02E	2.8	E3	65.8	69.6	61.2	75.4	66.8	64.0	53.2	71.0
Asgrow	AG31XF2	3.1	RR2XF	65.2	70.8	57.6	72.8	73.6	67.0	53.7	59.9
Xitavo	XO 2921E	2.9	E3	65.2	69.1	62.2	75.0	70.1	62.9	51.0	66.0
Xitavo	XO 2832E	2.8	E3	64.2	69.1	57.4	76.5	67.4	60.9	51.0	65.9
Renk	RS322NXF	3.2	RR2XF	62.9	67.4	58.8	72.8	66.1	58.8	50.0	67.1
Renk	G2960E	2.9	E3	62.4	69.5	56.7	75.8	68.1	63.8	41.5	63.3
Don Mario	DM28F52	2.8	RR2XF	61.3	65.5	57.4	66.9	64.9	66.0	39.8	67.0
Iowa State	IAS31C1	3.1	Conv	61.2	66.2	57.4	73.9	62.6	61.5	39.8	68.1
Viking	3144N	3.1	Conv	55.5	60.3	54.3	65.9	59.9	53.3	32.1	66.6
Experiment Mean				67.1			74.9	68.7	64.7	51.4	68.9
Minimum Mean	100 일본 10일 경기			53.9			65.9	59.9	53.3	32.1	59.9
Maximum Mean				73.4			84.2	75.1	71.2	62.8	78.7
LSD(0.25)				2.8			3.1	2.8	2.5	4.7	2.8
Coefficient of Variability				5.1			4.4	4.2	4.3	8.6	4.3

Table 11. South district, 2021 district and single-location means. Full-season test, MG > 3.2.

				Dis	strict Me	ans		Singl	e Locat	tion Yield	
Company	Variety	MG	Herb Tech	Yield Bu/A	SW Yield	SE Yield	Lewis	Corning	Milo	Batavia	Crawfords- ville
Credenz	CZ 3309GTLL	3.3	LLGT27	72.3	72.6	71.0	72.5	72.7	73.7	63.0	77.8
Cornelius	CB37XF97	3.7	RR2XF	71.8	74.1	70.3	78.8	70.9	72.2	61.6	75.7
Dyna-Gro	S33EN42	3.3	E3	71.0	71.2	69.1	76.8	70.2	68.7	63.0	76.1
NuTech/G2 Genetics	35N03E	3.5	E3	70.3	71.1	65.4	78.7	70.1	66.9	64.8	71.7
Xitavo	XO 3651E	3.6	E3	70.2	72.3	65.4	81.9	70.3	69.5	54.9	74.4
Credenz	CZ 3930GTLL	3.8	LLGT27	70.1	73.5	69.8	77.8	68.4	76.7	53.3	74.1
Xitavo	XO 3861E	3.4	E3	69.8	72.9	69.2	83.0	65.9	67.9	57.5	75.6
Asgrow	AG35XF1	3.5	RR2XF	69.8	71.7	68.4	74.7	71.4	69.0	60.5	72.8
Renk	G3460ES	3.4	E3	69.0	72.0	68.0	79.6	68.2	68.8	54.6	74.6
Dyna-Gro	S37XF42	3.7	RR2XF	69.0	71.5	67.4	78.3	67.8	69.2	54.5	73.3
Dyna-Gro	S33XF62	3.3	RR2XF	68.8	70.7	68.9	74.4	70.8	66.7	59.1	73.8
P3 Genetics	2136E	3.6	E3	68.6	73.7	63.2	80.8	71.6	69.4	49.0	72.1
NuTech/G2 Genetics	37N01E	3.7	E3	68.3	73.0	64.9	78.6	70.2	68.0	57.7	66.9
P3 Genetics	2234E	3.4	E3	68.3	72.4	62.2	80.6	70.6	64.2	50.2	75.5
Dyna-Gro	S35ES82	3.5	E3	68.1	75.6	61.1	77.4	76.9	71.6	43.2	71.2
NuTech/G2 Genetics	39N04E	3.9	E3	68.1	71.2	66.0	78.3	70.6	62.9	55.2	74.0
NuTech/G2 Genetics	39N05E	3.9	E3	67.7	69.1	64.2	73.1	70.4	65.6	59.7	68.1
NuTech/G2 Genetics	34N06E	3.4	E3	67.6	69.8	68.4	73.8	67.9	65.4	59.6	72.8
Xitavo	X0 3341E	3.3	E3	67.6	71.7	65.8	76.7	68.8	68.8	49.4	73.5
Pioneer	P33A53X	3.3	RR2X	67.4	70.2	61.5	77.1	73.2	62.0	52.1	71.5
Credenz	CZ 3750GTLL	3.7	LLGT27	67.2	67.0	64.5	75.7	66.6	62.9	59.3	70.4
Renk	G3660E	3.6	E3	67.1	71.7	63.8	81.8	67.6	65.7	51.2	70.2
P3 Genetics	2039E	3.9	E3	67.1	68.2	67.9	69.9	67.5	68.1	59.5	72.2
Cornelius	CB35XF65	3.5	RR2XF	66.7	66.5	66.0	70.9	67.5	63.7	59.9	71.7
Cornelius	CB39XF19	3.9	RR2XF	65.8	67.1	64.7	70.7	64.0	64.5	53.2	76.4
Pioneer	P37A27X	3.7	RR2X	53.9	57.0	48.5	55.7	64.2	52.9	36.6	60.3
Experiment Mean				67.1			76.1	69.4	67.1	55.5	72.6
Minimum Mean				53.9			55.7	64.0	52.9	36.6	60.3
Maximum Mean				73.4		경상하다	83.0	76.9	76.7	64.8	77.8
LSD(0.25)		in the		2.8			3.1	2.8	2.5	4.7	2.8
Coefficient of Variabilit	y)			5.1			4.4	4.2	4.3	8.6	4.3



Table 12. Entrant Information.

Asgrow: I	Bayer Cr	op Science,	St. Louis, MO		www.de	kalbasgro	owdeltap	ine.com	(800) 7	68-6387
4.77.5			Seed	*11	North	North	Central	Central	South	South
Variety		Herb Tech	Treatment		Early	Full	Early	Full	Early	Full
AG20XF1	Service of	RR2XF	ACL+ILVO		X	Section 1		13-1-10		
AG22XF2		RR2XF	ACL+ILVO			X				
AG23XF0		RR2XF	ACL+ILVO			Χ	Χ			
AG24XF1		RR2XF	ACL+ILVO				Χ			
AG26XF2		RR2XF	ACL+ILVO					Χ		
AG29XF2		RR2XF	ACL+ILVO					Χ		3.5
AG31XF2		RR2XF	ACL+ILVO						Χ	
AG35XF1		RR2XF	ACL+ILVO							Χ

Cornelius: Corne	elius Seed, Be	llevue, IA	www.co	rneliusse	ed.com		(800) 2	18-1862
		Seed	North	North	Central	Central	South	South
Variety	Herb Tech	Treatment	Early	Full	Early	Full	Early	Full
CB20XF71	RR2XF	CMV+Salt	X					
CB21XF55	RR2X	CMV+Salt	X					
CB22XF02	RR2XF	CMV+Salt	X					
CB23XF63	RR2XF	CMV+Salt		Χ				
CB24X64	RR2X	CMV+Salt		Χ				
CB24XF18	RR2XF	CMV+Salt		X				
CB26XF76	RR2XF	CMV+Salt			Χ			
CB27X81	RR2X	CMV+Salt			Χ			
CB27XF34	RR2XF	CMV+Salt			Χ			
CB29XF09	RR2XF	CMV+Salt				Χ		
CB31XF42	RR2XF	CMV+Salt				Χ		
CB35XF65	RR2XF	CMV+Salt						X
CB37XF97	RR2XF	CMV+Salt						Χ
CB39XF19	RR2XF	CMV+Salt						X

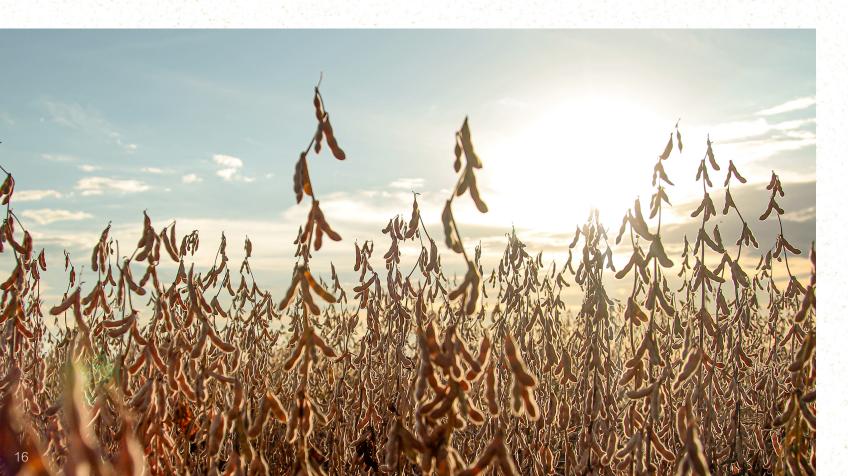


 Table 12. Entrant Information. Continued

Credenz: BASF, G	riswold, IA		www.ag	riculture.	basf.com	1	(877) 3	65-4287
		Seed	North	North	Central	Central	South	South
Variety	Herb Tech	Treatment	Early	Full	Early	Full	Early	Full
CZ 1660GTLL	LLGT27	PV+ILVO	X			14.00		149.0
CZ 2121GTLL	LLGT27	PV+ILVO	Χ					
CZ 2360GTLL	LLGT27	PV+ILVO		X	Χ			
CZ 2550GTLL	LLGT27	PV+ILVO		X	Χ			
CZ 2760GTLL	LLGT27	PV+ILVO		X	Χ			
CZ 3099GTLL	LLGT27	PV+ILVO				Χ	Χ	
CZ 3309GTLL	LLGT27	PV+ILVO						Χ
CZ 3750GTLL	LLGT27	PV+ILVO						Χ
CZ 3930GTLL	LLGT27	PV+ILVO						Χ

DonMario: Do	onMario Semillas	s, Champaign, IL		www.do	nmario.c		(217) 560-6370		
		Seed	12	North	North	Central	Central	South	South
Variety	Herb Tech	Treatment	hyd i	Early	Full	Early	Full	Early	Full
DM28F52	RR2XF	CMV	£ 74.		1 1 2 2 3		Χ	X	

Dyna-Gro: Cro	p Production Ser	vices, Wall Lake, IA	www.dy	nagrosee	d.com		(712)6	64-2444
		Seed	North	North	Central	Central	South	South
Variety	Herb Tech	Treatment	Early	Full	Early	Full	Early	Full
S19EN21	E3	E-VIP+Salt	Χ					
S21EN81	E3	E-VIP+Salt	Χ					
S21XF72	RR2XF	E-VIP+Salt	X					
S23ES32	E3	E-VIP+Salt		X				
S24XF12	RR2XF	E-VIP+Salt		X	Χ			
S25EN02	E3	E-VIP+Salt		X	Χ			
S27EN89	E3	E-VIP+Salt			X			
S28EN22	E3	E-VIP+Salt				Χ	Χ	
S28XF92S	RR2XF	E-VIP+Salt				Χ		
S29EN62	E3	E-VIP+Salt				Χ	Χ	
S31XF82	RR2XF	E-VIP+Salt				Χ	Χ	
S33EN42	E3	E-VIP+Salt						X
S33XF62	RR2XF	E-VIP+Salt						X
S35ES82	E3	E-VIP+Salt						X
S37XF42	RR2XF	E-VIP+Salt						Χ

Golden Harvest	:: Syngenta, Mi	nnetonka, MN	www.go	oldenharv	estseeds	.com	(612) 6	56-8152
		Seed	North	North	Central	Central	South	South
Variety	Herb Tech	Treatment	Early	Full	Early	Full	Early	Full
GH1802E3	E3	CMV+Salt	Χ					
GH2102XF	RR2XF	CMV+Salt	Χ					
GH2292E3	E3	CMV+Salt	X		Χ			
GH2442E3	E3	CMV+Salt		Χ	Χ			
GH2562XF	RR2XF	CMV+Salt		Χ	Χ			
GH2722XF	RR2XF	CMV+Salt		X	Χ			
GH2872XF	RR2XF	CMV+Salt				X		
GH2922E3	E3	CMV+Salt				Χ		
GH3132E3	E3	CMV+Salt				X		
GH3192XF	RR2XF	CMV+Salt				X		

Iowa State: Iow	a State Unive	rsity, Ames, IA	www.CA	D.iastate	.edu		(515) 2	94-9442
		Seed	North	North	Central	Central	South	South
Variety	Herb Tech	Treatment	Early	Full	Early	Full	Early	Full
IA2102	Conv	CMV	Χ	The both of				
IAS19C3	Conv	CMV	Χ					
IAS25C1	Conv	CMV		Χ	Χ			
IAS31C1	Conv	CMV				X	Χ	

NuTech/G2 (Genetics: NuTech S	eed, LLC, Ames, IA	www.ni	utechseed	.com		(515)2	32-1997
	보 (항상) 보통하다.	Seed	North	North	Central	Central	South	South
Variety	Herb Tech	Treatment	Early	Full	Early	Full	Early	Full
18N02E	E3	LMGN	X					
20N04E	E3	LMGN	X					
21N06E	E3	LMGN	X					
22N02E	E3	LMGN	X					
24N04E	E3	LMGN		Χ	Χ			
26N06E	E3	LMGN		Χ	Χ			
28N02E	E3	LMGN				Χ	Χ	
29N02E	E3	LMGN				. X	Χ	
30N05E	E3	LMGN				X	Χ	
31N06E	E3.	LMGN				Χ	Χ	
34N06E	E3	LMGN						X
35N03E	E3	LMGN						X
37N01E	E3	LMGN						Χ
39N04E	E3	LMGN						X
39N05E	E3	LMGN						X

ornelius Seed,	Bellevue, IA		www.co	rneliusse	ed.com		(800) 2	18-1862
	Seed	7,425	North	North	Central	Central	South	South
Herb Tech	Treatment	ya bi	Early	Full	Early	Full	Early	Full
E3	CMV+Salt			A Maria Carlo		Χ		
E3	CMV+Salt							X
E3	CMV+Salt				Χ			
E3	CMV+Salt							X
E3	CMV+Salt		Χ					
E3	CMV+Salt		Χ					
E3	CMV+Salt		Χ					
E3	CMV+Salt			X				
E3	CMV+Salt					Х		
E3	CMV+Salt					Χ		
E3	CMV+Salt							Χ
	Herb Tech E3	Herb Tech Treatment E3 CMV+Salt	Seed Herb Tech Treatment E3 CMV+Salt	Seed North Herb Tech Treatment Early E3 CMV+Salt X E3 CMV+Salt X E3 CMV+Salt X E3 CMV+Salt	Seed North Full E3 CMV+Salt X E3 CMV+Salt	Seed North Full Early E3 CMV+Salt	SeedNorthNorth EarlyCentral FullCentral EarlyE3CMV+SaltXE3CMV+SaltXE3CMV+SaltXE3CMV+SaltXE3CMV+SaltXE3CMV+SaltXE3CMV+SaltXE3CMV+SaltXE3CMV+SaltXE3CMV+SaltXE3CMV+SaltXE3CMV+SaltXE3CMV+SaltXE3CMV+SaltX	Seed North Early Full Central Full Early E3 CMV+Salt

 Table 12. Entrant Information. Continued

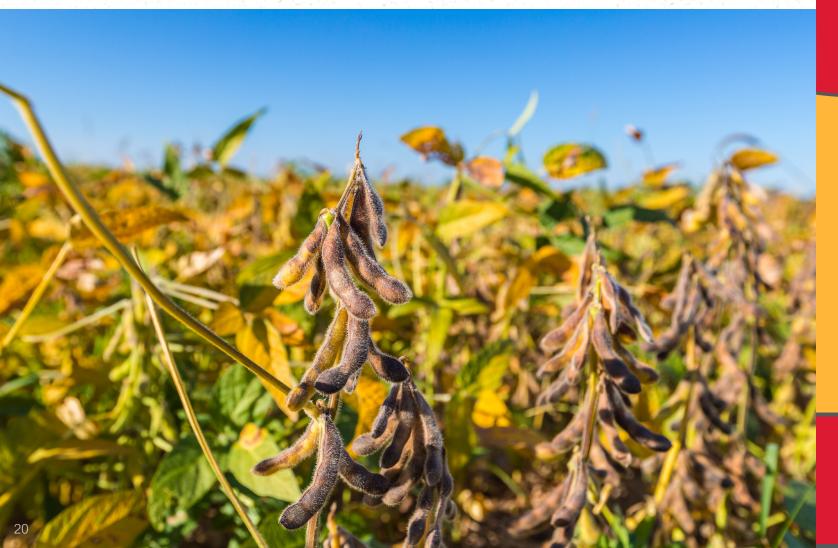
Pioneer: Corteva, Johnston, IA			www.pi	oneer.con	n	(833) 267-8382			
		Seed	North	North	Central	Central	South	South	
Variety	Herb Tech	Treatment	Early	Full	Early	Full	Early	Full	
P21A28X	RR2X	CMV	Χ						
P23A15X	RR2X	CMV		X	Χ				
P25A04X	RR2X	CMV		X	Χ				
P27A17X	RR2X	CMV		X	Χ				
P28A42X	RR2X	CMV				Χ	Χ		
P31A22X	RR2X	CMV				Χ	Χ		
P33A53X	RR2X	CMV						X	
P37A27X	RR2X	CMV						Χ	

Renk: Renk Seed Co., Sun Prairie, WI			www.re	www.renkseed.com				(800) BUY RENK		
		Seed	North	North	Central	Central	South	South		
Variety	Herb Tech	Treatment	Early	Full	Early	Full	Early	Full		
G2060E	E3	Other	X							
G2150E	E3	Other	X							
G2190GL	LLGT27	Other	X							
G2260E	E3	Other	X							
G2460ES	E3	Other								
G2550E	E3	Other		Χ	Χ					
G2960E	E3	Other				X	Χ			
G3460ES	E3	Other						Χ		
G3660E	E3	Other						Х		
RS212NFX	RR2XF	Other	X							
RS242NXF	RR2XF	Other		Χ	Χ					
RS248NX	RR2X	Other		Χ	Χ					
RS322NXF	RR2XF	Other				X	Χ			

Viking: Albert Lea Seed House, Albert Lea, MN				www.alseed.com			
	Seed	North	North	Central	Central	South	South
Herb Tech	Treatment	Early	Full	Early	Full	Early	Full
Conv	CM	Χ					
Conv	CM	Χ					
Conv	CM	Χ					
Conv	CM	Χ					
Conv	CM		X				
Conv	CM		X	Χ			
Conv	None					Χ	
Conv	CM	Χ					
Conv	None			Χ			
Conv	None					Χ	
Conv	None	Χ					
	Herb Tech Conv Conv Conv Conv Conv Conv Conv Conv	Seed Herb Tech Treatment Conv CM Conv None Conv None Conv None Conv None	Seed North Herb Tech Treatment Early Conv CM X Conv CM Conv CM Conv CM Conv CM Conv CM Conv None Conv None Conv None Conv None	Seed North North Herb Tech Treatment Early Full Conv CM X Conv None Conv CM X	Seed North Full Central Early Conv CM X X X X Conv CM X X X X Conv None Conv CM X	Seed North North Central Full Herb Tech Treatment Early Full Early Full Conv CM X X Conv CM X X Conv None Conv CM X Conv None	Seed North North Early Full Early Full Early Conv CM X X Conv CM X X Conv CM X X X X X X X X X X X X X X X X X X X

Virtue Seeds: De	www.virtueseeds.com			(217) 560-6371				
		Seed	North	North	Central	Central	South	South
Variety	Herb Tech	Treatment	Early	Full	Early	Full	Early	Full
V2122	Conv	CMV	Χ	- Colored				
V3122	Conv	CMV				Χ	Χ	

		www.xitavosoybeanseed.com			
North	North	Central	Central	South	South
Early	Full	Early	Full	Early	Full
X	10.00				Sec. 18
Χ					
X					
X					
X					
Χ					
	Χ				
	Χ	Χ			
			Χ	Χ	
			Χ	Χ	
			Χ	Χ	
					Χ
					Χ
					X
	X X X X	Early Full X X X X X X X X X	Early Full Early X X X X X X X X X X X	Early Full Early Full X X X X X X X X X X X X X X X X X X	Early Full Early Full Early X X X X X X X X X X X X X X X X X X





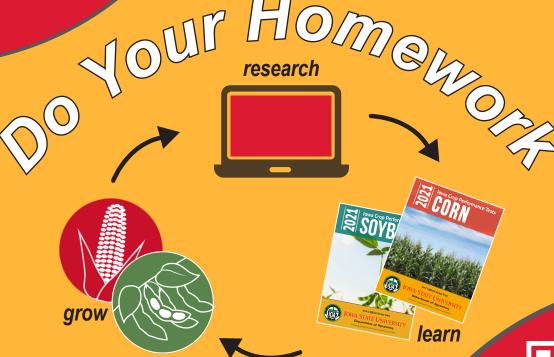
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 - ✓ Vigor & Stand
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- Save Time & Money
- Accurate & Consistent Results.



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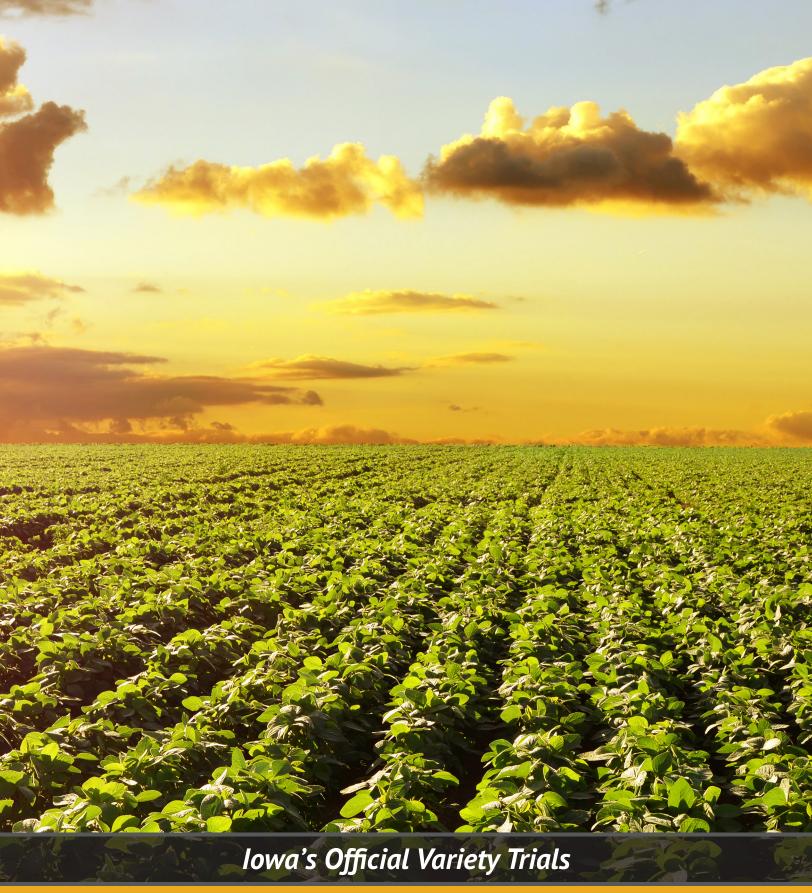
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