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North Dakota Soybean

Variety Trial Results for 2020 and Selection Guide

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Variety trial data from all NDSU Research Extension Centers for all crops can be found at www.ag.ndsu.edu/varietytrials. Several herbicide traits are represented in the tables: RR = Roundup Ready, RRXT = RR2Xtend, XT = Xtend, GT = glyphosate tolerant, LL = Liberty Link and GT27 = Liberty Link GT27.

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Soybean Variety Selection

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Selection

Soybean variety selection should be based on maturity, yield, seed quality, lodging, iron-deficiency chlorosis tolerance and disease reactions. In most years, later-maturing varieties tend to yield more than early maturing varieties when evaluated at the same location.

After determining a suitable maturity for the farm, comparing yields of varieties that are of similar maturity is important. Although late maturity increases yield potential, later-maturing varieties are more risky to grow than earlier-maturing varieties because an early fall frost may kill a late-maturing variety before the beans have completely filled in the pods, which will reduce yield and percent of oil greatly.

Soybean Maturity

Soybeans respond to day length and heat units, so the actual calendar date a variety will mature is highly influenced by latitude; each variety has a narrow range of north to south adaptation. Soybean yield and quality are affected if a season-ending freeze occurs before a variety reaches physiological maturity. Dates of maturity are listed in the performance tables and indicate when varieties were physiologically mature.

Physiological maturity has been reached when 95% of the pods have reached the mature color. Varieties may have different mature pod color. Usually, harvest can commence approximately seven to 14 days after the soybean crop is physiologically mature. Relative maturity ratings also are provided for many of the varieties entered in the trials at various locations. Relative maturity ratings for private varieties were provided by the companies entering the variety in the trial.

Varieties of maturity groups 00 (double zero), 0 (zero) and 1 are suitable for eastern North Dakota and northwestern Minnesota. Maturity group 00 is very early and primarily is grown in the northern Red River Valley and the north-central area of North Dakota. Maturity group 0 is adapted to Traill, Cass and Richland counties and other counties with similar latitudes. Maturity group 1 primarily is suitable for southern areas. These maturity groups are further subdivided. For example, a 0.1 maturity group is an early group 0 variety and a 0.9 is a late-maturity group 0 variety.

The best way to select a high-yielding variety is to use data averaged across several locations and years. Because weather conditions are unknown in advance, averaging across several years' data will identify how a variety might perform across different weather conditions. Selecting a variety that has performed well in dry and normal rainfall conditions is the best way to identify a variety that does relatively well, regardless of weather fluctuations.

Phytophthora

Phytophthora root rot is one of the most important disease problems of soybeans in North Dakota. Phytophthora root rot tends to be more of a problem in the Red River Valley and on poorly drained, heavy soils, but the disease can cause significant stand reduction and yield loss in other areas when conditions are favorable for disease development. Management tools available to reduce Phytophthora root rot include selection of a resistant variety, use of a fungicide seed treatment, tile drainage and crop rotation.

Most varieties have Phytophthora root rot-resistance genes, and each gene confers resistance to a different race (or races) of Phytophthora. For example, a gene that may confer resistance to Race 3 may not confer resistance to Race 4, and vice versa.

Phytophthora is a variable pathogen, and many races of the pathogen exist in North Dakota. No gene guarantees control of the pathogen. Consequently, monitoring your fields for Phytophthora root rot every year is important. If the disease is widespread, the pathogen likely has overcome the gene being used, and the gene should not be used in future plantings.

Similarly, continually rotating effective genes is very important. Lack of gene or crop rotation can speed the development of new races. In some North Dakota fields, the pathogen already has become resistant to multiple genes. Fungicide seed treatments with activity against Phytophthora may help prevent early infection.

However, seed treatments do not provide season-long control and over time, the pathogen can become resistant to them. Consequently, fungicide seed treatments and resistance genes should be rotated. The most effective strategy would include the use of fungicide seed treatments, planting varieties with genetic resistance, water management (surface and subsurface drainage) and crop rotation.

White Mold

Varieties have genetic differences for tolerance or resistance to white mold. Varieties that are less susceptible to white mold should be grown on fields where white mold has a history of causing problems. The same pathogen causing white mold in soybeans causes white mold in other crops (dry bean, sunflower, pea, canola, etc.). Consequently, recent white mold problems in **any crop** in that field should be noted, and crop rotation with nonhosts, such as wheat, barley or corn, is preferred for white mold management.

Fungicides are labeled for management/suppression of white mold, but applications must be made on a preventive basis. Efficacy may be inconsistent (particularly in high disease-pressure environments) and economics in low disease-risk environments are often not favorable.

Iron-deficiency Chlorosis

Iron-deficiency chlorosis (IDC) is a major problem in the eastern part of North Dakota. Iron chlorosis symptoms might be present during the two- to seven-trifoliolate leaf stages. Plants tend to recover and start to turn green again during the late vegetative, flowering and pod-filling stages. However, IDC during the early vegetative stages can reduce yield potential severely.

Some varieties are more tolerant to IDC than others. For high-pH soils with known IDC problems, select an iron chlorosis-tolerant variety of suitable maturity that is high yielding. For varieties tested in 2020, IDC scores are provided in Tables 3 and 4.

Soybean Cyst Nematode

Soybean cyst nematode (SCN), *Heterodera glycines*, is a small parasitic roundworm that attacks the roots of soybean plants. Nematodes often are undetected because above-ground symptoms are uncommon until a 15% to 30% yield loss has occurred.

Soybean cyst nematode has been confirmed in many soybean-growing counties in North Dakota. Growers are strongly urged to test their soils for SCN. If a positive sample for SCN is found, growers should begin managing SCN actively.

Crop rotation and resistance are the most important management tools against this disease. Two sources of resistance to SCN – PI88788 and Peking – are effective in the majority of the soybean fields in the state. However, the nematode is adapting to the genetic resistance, so varieties with PI88788 and Peking should be rotated. Importantly, the level of resistance in varieties is variable, even if they contain the same source of resistance. So selecting the most resistant variety possible and monitoring the field for SCN is important.

For SCN management, a rotation out of soybean for two to three years is beneficial. Dry edible beans are susceptible to SCN and should not be used as a rotation crop for managing SCN. Nematicide seed treatments also are available and may help manage SCN; however, they are not a substitute for resistance and rotation. More information of soybean cyst nematode can be found at www.thescncoalition.com.

General Information About Tables

The agronomic data presented in this publication are from replicated research plots using experimental designs that enable the use of statistical analysis. The least significant difference (LSD) numbers beneath the columns in tables are derived from the statistical analyses and only apply to the numbers in the column in which they appear. If the difference between two varieties exceeds the LSD 0.10 or 0.05 value, it means that with 90% or 95% probability, the higher-yielding variety has a significant yield advantage. If the difference between two varieties is less than the LSD value, then the variety yields are considered similar.

The abbreviation NS is used to indicate no significant difference for that trait among any of the varieties. The CV is a measure of variability in the trial. The CV stands for coefficient of variation and is expressed as a percentage. Large CVs indicate that a large amount of variation could not be attributed to differences in the varieties.

In the tables, the mean indicates the average of the observations in the column. Soybean yield, and oil and protein information are adjusted to 13% moisture content in the seed. **The oil and protein content data are not intended to be compared among locations.** Maturity date indicates physiological maturity, which is the date when 95% of the pods are brown or tan. At Langdon, the maturity date indicates the day when one pod on the main stem obtained the mature brown or tan color.

Look for trends for the desired trait among different experimental sites and years. Table 2 provides the full company name, abbreviated company name used in the tables and a website for the company.

Presentation of data for the varieties tested does not imply approval or endorsement by the authors or agencies conducting the tests. NDSU approves the reproduction of any table in this publication only if no portion is deleted, appropriate footnotes are given, the order of the data is not rearranged and NDSU is credited for the data.

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Table 1. Agronomic Characteristics of Public Soybean Varieties Suitable for North Dakota Production.

Variety	Maturity	Fargo Relative		Hilum Color	Remarks ¹
	Group	Maturity	Height		
ND18008GT	00.8	Early	Med.	Black	1,2,7,9
ND17009GT	00.9	Early	Med.	Black	7
ND Rolette	00.9	Early	Med.	Buff	1,2,8
ND Henson	0.0	Early	Med.	Black	1,2
ND Benson	0.4	Med.	Med.	Buff	1,2,6,8
ND Stutsman	0.7	Med. Late	Med.	Yellow	1,3,8
Prosoy	0.8	Med. Late	Tall	Yellow	4,5

¹ Remarks: 1 = Good iron chlorosis resistance; 2 = Resistant to races 1-4 of Phytophthora root rot; 3 = Resistant to races 1 - 3 of Phytophthora root rot; 4 = Susceptible to Phytophthora root rot; 5 = Tofu bean; 6 = resistant to soybean cyst nematode (SCN); 7 = Glyphosate resistant; 8 = Tolerant to metribuzin herbicide; 9 = tolerance to soybean aphid.

Table 2. Full Company Name, Abbreviated Name Used in Tables and Website.

Company	Abbreviated	Website
Albert Lea Seed	Viking	www.alseed.com
BASF	BASF	agriculture.basf.com/us/en/Crop-Protection/Credezn.html
BioGene	BioGene	www.biogeneseeds.com
Brushvale Seed Inc.	Brushvale	www.brushvaleseed.com
Dahlman Seed Co.	Dahlman	www.dahlmanseed.com
Dairyland Seed Co. Inc.	Dairyland	www.dairylandseed.com
DuPont Pioneer	Pioneer	www.pioneer.com
Dyna-Gro Seed	Dyna-Gro	www.dynagroseed.com
Golden Harvest	Golden H.	www.goldenharvestseeds.com/soybeans
Hefty Seed Co.	Hefty	www.heftyseed.com
Innictis Seed Solutions	Innictis	www.innictisseed.com/products/soybeans/107
Integra Fortified Seed	Integra	www.wilburellisagribusiness.com/integra-seed/
Legacy Seeds Inc.	Legacy	www.legacyseeds.com
Legend Seeds Inc.	Legend	www.legendseeds.net
LG Seeds	LG Seeds	www.lgseeds.com
N.D. Foundation Seed	NDSU	www.ag.ndsu.edu/fss/
P3 Genetics	P3 Genetics	www.petersonfarmsseed.com/p3-soybeans/
Peterson Farms Seed	Peterson	www.petersonfarmsseed.com
Prograin	Prograin	www.prograin.ca/ca/en/seeds/
Proseed Inc.	Proseed	www.proseed.net
REA hybrids	REA	www.rea-hybrids.com
Richland IFC	Richland	www.richlandifc.com
Sevita International	Sevita	www.sevitagenetics.com
Stine	Stine	www.stinseed.com/soybeans
Syngenta NK Brand	Syng NK	www.syngenta-us.com/seed
Thunder Seed Inc.	Thunder	www.thunderseeds.com
University of Minnesota	U of M	www.mncia.org/
WinField Croplan	Croplan	www.winfieldunited.com/

Table 3. 2020 NDSU Enlist, GT27, Roundup Ready and Xtend Soybean Iron-deficiency Chlorosis Trial - Author, T. Helms (Page 1 of 3).

Company	Variety	2-site Mean IDC ¹	Company	Variety	2-site Mean IDC ¹
BASF	CZ0419	2.6	Dyna-Gro	SX203007X	2.7
BASF	CZ0590	2.5	Golden H.	GH00629X	2.2
BASF	CZ0729	2.4	Golden H.	GH00833E3	2.2
BASF	CZ1139	2.3	Golden H.	GH0145X	2.3
BASF	CZ1280	3.1	Golden H.	GH0294E3	2.5
BASF	CZ1331	2.2	Golden H.	GH0325E3	2.3
Biogene	BG8000	2.5	Golden H.	GH0443X	1.9
Biogene	BG8007	2.1	Golden H.	GH0543X	2.7
Biogene	BG8008	2.4	Golden H.	GH0715E3	2.4
Dahlman	1004E3N	2.2	Golden H.	GH0749X	2.6
Dahlman	1102E3N	2.9	Golden H.	GH0936X	2.6
Dahlman	1108E3N	2.6	Golden H.	GH1184E3	2.4
Dahlman	1111E3N	2.4	Golden H.	GH1225X	2.5
Dahlman	6004XN	2.2	Golden H.	GH1362E3	2.4
Dahlman	6010XN	2.4	Hefty	H006X0	2.2
Dahlman	68008XN	2.2	Hefty	H01X0	2.7
Dahlman	6903XN	1.9	Hefty	H02X9	2.2
Dairyland	DSR-0119E	2.6	Hefty	H04X8	2.9
Dairyland	DSR-0577E	2.1	Integra	20097	2.8
Dairyland	DSR-0645E	2.3	Integra	20215	2.5
Dairyland	DSR-07147E	2.1	Integra	40089N	2.1
Dairyland	DSR-0717E	2.7	Integra	40129N	2.1
Dairyland	DSR-0847E	2.5	Integra	40201N	2.9
Dairyland	DSR-0920E	2.1	Integra	40300N	2.3
Dairyland	DSR-1032E	2.4	Integra	40511	2.0
Dairyland	E8-210E	2.2	Integra	40831N	2.4
Dairyland	E9-201E	1.6	Integra	40999N	2.2
Dyna-Gro	S005XT38	2.3	Integra	41041N	2.7
Dyna-Gro	S007XT27	2.4	Integra	50060N	2.1
Dyna-Gro	S009XT49	2.7	Integra	50081N	2.6
Dyna-Gro	S009XT68	2.2	Integra	500871N	2.5
Dyna-Gro	S02EN71	3.0	Integra	50309N	1.8
Dyna-Gro	S03XT29	1.9	Integra	50510	2.4
Dyna-Gro	S04EN21	2.3	Integra	50990N	2.2
Dyna-Gro	S04XT77	2.3	Integra	51229N	2.1
Dyna-Gro	S04XT91	2.4	Integra	40999N	1.9
Dyna-Gro	S07EN61	2.4	Innvictis	A00979X	2.6
Dyna-Gro	S07XT28	2.5	Innvictis	A00918X	2.3
Dyna-Gro	S09EN41	2.5	Legacy	LS-0638N	2.9
Dyna-Gro	S09XT50	2.1	Legacy	LS-0738N	2.5
Dyna-Gro	S10XT71	2.6	Legacy	LS00639N RR2X	2.4
Dyna-Gro	S11EN40	2.6	Legacy	LS00930 RR2X	2.5
Dyna-Gro	S13XT89	2.3	Legacy	LS012-20	2.6
Trial Mean		2.4	Trial Mean		2.4
LSD 0.05		0.2	LSD 0.05		0.2
LSD 0.10		0.2	LSD 0.10		0.2
CV		14.7	CV		14.7

Table 3. 2020 NDSU Enlist, LLGT27, Roundup Ready and Xtend Soybean Iron-deficiency Chlorosis Trial - Author, T. Helms (Page 2 of 3).

Company	Variety	2-site		Company	Variety	2-site	
		Mean	IDC ¹			Mean	IDC ¹
Legacy	LS0239N RR2X	2.0		P3 Genetics	P3 2109E	3.0	
Legacy	LS0319 LLGT27	2.5		P3 Genetics	P3 2110E	2.8	
Legacy	LS0320N E3	2.4		Peterson	18X008N	2.7	
Legacy	LS0429 E3	1.9		Peterson	19EN008	2.1	
Legacy	LS0438	2.7		Peterson	19EN04	2.0	
Legacy	LS061-20	2.3		Peterson	19X03N	2.1	
Legacy	LS082-20	3.0		Peterson	20X05	2.2	
Legacy	LS0830N	2.3		Peterson	20X09	2.3	
Legacy	LS0930N	2.4		Peterson	2110E	2.6	
Legacy	LS102-20	2.6		Peterson	21X007	3.0	
Legacy	LS111-20	2.6		Peterson	21X04	2.3	
Legend	005E953N	2.3		Pioneer	P00A49X	2.2	
Legend	009E955N	1.8		Pioneer	P00A75X	2.4	
Legend	009X852N	2.6		Pioneer	P03A17X	1.9	
Legend	03X852N	1.8		Pioneer	P03A26X	2.0	
Legend	05E065N	2.3		Pioneer	P10A84X	1.7	
Legend	0638N RR2X	2.3		Proseed	50-10RR2Y	2.7	
Legend	08E127N	2.8		Proseed	EL21-03	2.5	
Legend	09X960N	2.5		Proseed	EL21-23	2.6	
Legend	10E125N	2.7		Proseed	EL80-093	2.1	
Legend	12E053N	2.3		Proseed	EL90-53	2.5	
Legend	131GT132N	2.2		Proseed	EL91-33	2.3	
LG Seeds	LGS00663RX	2.3		Proseed	XT20-07	2.4	
LG Seeds	LGS00899RX	2.7		Proseed	XT20-40	2.3	
LG Seeds	LGS0111RX	2.3		Proseed	XT20-70	2.9	
LG Seeds	LGS0333E3	2.2		Proseed	XT60-09	2.0	
LG Seeds	LGS0355RX	2.1		Proseed	XT60-40	2.2	
LG Seeds	LGS0400RX	2.5		Proseed	XT70-09	2.6	
LG Seeds	LGS0595RX	2.1		Proseed	XT70-60	2.2	
LG Seeds	LGS0735RX	2.8		Proseed	XT79-09N	3.0	
LG Seeds	LGS1221RX	2.5		Proseed	XT80-20	2.0	
LG Seeds	LGS1337RX	2.7		Proseed	XT80-60N	2.5	
NDSU	ND17009GT	3.1		Proseed	XT90-50	2.2	
NDSU	ND18008GT	2.8		REA	RX00749	2.4	
P3 Genetics	P3 1911E	2.5		REA	RX00810	2.3	
P3 Genetics	P3 2002E	2.5		REA	RX0411	2.3	
P3 Genetics	P3 2003E	2.6		REA	RX0520	2.3	
P3 Genetics	P3 2005E	2.5		REA	RX0721	1.9	
P3 Genetics	P3 2013E	2.3		REA	RX0929	2.4	
P3 Genetics	P3 2106B	2.5		REA	RX1030	2.6	
P3 Genetics	P3 2106E	2.1		REA	RX1529	2.5	
P3 Genetics	P3 2107B	2.1		Stine	003EB62	2.3	
P3 Genetics	P3 2108E	2.6		Stine	01EA63	2.6	
Trial Mean		2.4		Trial Mean		2.4	
LSD 0.05		0.2		LSD 0.05		0.2	
LSD 0.10		0.2		LSD 0.10		0.2	
CV		14.7		CV		14.7	

Table 3. 2020 NDSU Enlist, LLGT27, Roundup Ready and Xtend Soybean Iron-deficiency Chlorosis Trial - Author, T. Helms (Page 3 of 3).

Company	Variety	2-site Mean IDC ¹	Company	Variety	2-site Mean IDC ¹
Stine	05EA23	2.5	Thunder	39005 R2Y	2.0
Stine	06EC20	2.5	Thunder	SB8001	2.5
Stine	07EA36	2.9	Thunder	SB8009N	2.2
Stine	08EC22	3.1	Thunder	SB8010N	2.6
Stine	09EA02	2.1	Thunder	SB81006	2.7
Syng NK	S006-R7X	2.8	Thunder	SB8104N	2.4
Syng NK	S008-E3	2.0	Thunder	SB87009	2.2
Syng NK	S01-C4X	2.3	Thunder	SB88007N	2.8
Syng NK	S02-F9X	3.1	Thunder	SB8805N	2.7
Syng NK	S03-E3	2.3	Thunder	SB8807N	2.6
Syng NK	S03-S6X	2.6	Thunder	SB8903N	2.0
Syng NK	S04-Q7X	2.0	Thunder	SN8906N	2.4
Syng NK	S05-N5X	2.8	Thunder	TE7003N	2.3
Syng NK	S07-Q4X	2.8	Thunder	TE71008N	2.1
Syng NK	S09-D4X	2.4	Thunder	TE7101N	3.1
Syng NK	S12-T2X	2.7	Thunder	TE7107N	2.4
Syng NK	S12-U9X	2.6	Thunder	TE7110N	2.7
Trial Mean		2.4	Trial Mean		2.4
LSD 0.05		0.2	LSD 0.05		0.2
LSD 0.10		0.2	LSD 0.10		0.2
CV		14.7	CV		14.7

¹IDC score was 1-5, with 1-green, 3-yellow, 5-dead tissue.



Table 4. 2020 NDSU Conventional Soybean Iron-deficiency Chlorosis Trial - Author, T. Helms.

Company	Variety	2-site Mean IDC ¹	Company	Variety	2-site Mean IDC ¹
Richland	MK0249	1.7	NDSU	ND Henson	2.4
Richland	MK0603	1.8	Prograin	Atena	2.4
NDSU	ND Stutsman	1.9	Brushvale	BS1512	2.5
NDSU	ND Rolette	1.9	Legacy	LC0070-20	2.6
NDSU	ND Dickey	1.9	Sevita	Astor	2.6
Legacy	LC130-20	1.9	Brushvale	BS1282	2.7
Richland	MK0508	2.0	Prograin	Hana	2.7
NDSU	ND Benson	2.0	Richland	MK146	2.7
Brushvale	BS1345	2.1	Richland	MK808CN	2.8
Prograin	Marula	2.2	Legacy	LC0090-20	2.8
NDSU	ProSoy	2.2	Sevita	Panorama	2.8
Prograin	Maya	2.3	NDSU	Sargent	2.8
Richland	MK1016	2.3	Brushvale	BS1146	2.9
Legacy	LC020-20	2.3	Legacy	LC0080-20	2.9
Richland	MK41	2.4	Legacy	LC120-20	3.1
NDSU	ND1406HP	2.4	Sevita	Skyline	3.4
Mean		2.4	Mean		2.4
LSD 0.05		0.3	LSD 0.05		0.3
LSD 0.10		0.2	LSD 0.10		0.2
CV		17.2	CV		17.2

¹IDC score was 1-5, with 1-green, 3-yellow, 5-dead tissue.



Soybean plants with IDC scores; 1 is green and 5 is dead tissue.

Table 5. 2020 NDSU Enlist, GT27, RR and Xtend Soybean Cyst Nematode Yield Trial - Author, C. Miranda.

Company	Variety	Prosper	Wyndmere	2-site Avg.
		------(bu/a)-----		
Dahlman	1102E3N	16.5	70.2	43.4
Dahlman	1108E3N	37.7	53.5	45.6
Dahlman	6004XN	16.3	71.2	43.7
Dahlman	6903XN	21.3	58.5	39.9
Dyna-Gro	S09XT50	15.9	62.5	39.2
Dyna-Gro	S10XT71	39.4	67.3	53.3
Dyna-Gro	S11EN40	31.1	60.5	45.8
Golden H.	GH0443X	28.9	67.4	48.1
Golden H.	GH0749X	39.0	69.6	54.3
Golden H.	GH1225X	35.3	57.7	46.5
Golden H.	GH1362E3	25.3	65.9	45.6
Integra	40831N	15.7	60.4	38.1
Integra	40999N	30.2	65.5	47.8
Integra	41041N	39.1	64.3	51.7
Integra	50990N	36.2	68.1	52.2
REA	RX0411	31.8	54.5	43.2
REA	RX0721	30.2	72.9	51.5
REA	RX0929	31.1	66.3	48.7
REA	RX1030	28.6	65.0	46.8
Syng NK	S07-Q4X	23.9	69.0	46.4
Syng NK	S09-D4X	42.9	59.5	51.2
Syng NK	S12-T2X	29.3	62.1	45.7
Syng NK	S14-U9X	36.0	60.0	48.0
Mean		29.6	64.0	46.8
CV %		42.3	11.5	23.7
LSD 0.05		17.7	10.4	11.0
LSD 0.10		14.8	8.7	9.2

Prosper - Planted: May 27 Harvested: Oct. 7. Previous crop: wheat.

Wyndmere - Planted: May 11. Harvested: Oct. 7. Previous crop: corn.

Maturity was not recorded in these locations due to frost damage.

Table 6. 2020 NDSU Combined SCN-infested Soil Soybean non-GMO Variety Trial - Author, C. Miranda.

Company	Variety	Prosper	Wyndmere	2-site Avg.
		------(bu/a)-----		
NDSU	ND Benson	32.4	61.8	47.1
NDSU	ND Dickey	32.6	59.7	46.2
Richland	MK 146	36.1	58.9	47.5
Richland	MK 41	33.3	52.7	43.0
Richland	MK 808CN	28.7	69.0	48.9
Sevita	Skyline	34.1	52.3	46.3
Mean		32.9	59.1	46.5
CV %		22.0	8.6	15.3
LSD 0.05		11.9	7.7	7.4
LSD 0.10		9.7	6.3	6.2

Prosper - Planted: May 27 Harvested: Oct. 7. Previous crop: wheat.

Wyndmere - Planted: May 11. Harvested: Oct. 7. Previous crop: corn.

Maturity was not recorded in these locations due to frost damage.

Table 7. 2020 NDSU Enlist, GT27, RR and Xtend Soybean, Central Location - Grandin - Author, C. Miranda.

Company/ Brand	Variety	Seed Yield	
		Grandin	2-yr. Avg.
		------(bu/a)-----	
BASF	CZ0419	57.8	46.1
BASF	CZ0590	62.1	--
BASF	CZ0729	60.3	52.2
Dairyland	DSR-0645E	63.0	--
Dairyland	DSR-0717E	61.1	51.9
Dairyland	DSR-0847E	59.5	47.8
Dairyland	DSR-0920E	60.2	--
Dyna-Gro	S04EN21	61.7	--
Dyna-Gro	S04XT91	65.5	--
Dyna-Gro	S07EN61	59.9	--
Dyna-Gro	S07XT28	60.2	51.1
Golden H.	GH0443X	62.1	--
Golden H.	GH0715E3	67.6	--
Golden H.	GH0749X	64.7	47.3
Integra	40511	62.5	--
Integra	50510	60.7	43.6
Integra	40831N	58.9	--
Legacy	LS061-20	64.7	--
Legacy	LS-0638N	62.6	46.3
Legacy	LS-0738N	62.0	50.1
Legacy	LS082-30	63.3	--
Legend	03X852N	62.2	46.8
Legend	05E065N	62.0	--
LG Seeds	LGS0333E3	61.9	--
LG Seeds	LGS0400RX	64.6	51.2
LG Seeds	LGS0595RX	61.6	--
LG Seeds	LGS0735RX	62.6	49.7
P3 Genetics	2005E	64.0	51.3
P3 Genetics	2106B	60.5	--
P3 Genetics	2106E	62.2	--
P3 Genetics	2107B	58.9	--
Proseed	EL90-53	58.9	--
Proseed	XT20-40	66.1	--
Proseed	XT20-70	61.0	--
Proseed	XT80-60N	62.6	51.1
REA	RX0411	61.3	--
REA	RX0520	61.6	46.5
REA	RX0721	65.4	--
Stine	05EA23	62.3	--
Stine	06EC23	64.4	--
Stine	07EA36	61.6	51.7
Stine	08EC22	62.3	--
Syng NK	S01-C4X	62.6	46.5
Syng NK	S04-Q7X	59.5	--
Syng NK	S07-Q4X	64.0	45.5
Syng NK	S09-D4X	67.0	51.6
Mean		62.2	48.9
CV %		4.9	--
LSD 0.05		5.0	--
LSD 0.10		4.2	--

Planted: May 19. Harvested: Oct 2. Previous crop: wheat.

¹Maturity was not recorded in this location due to frost damage.

Table 8. 2020 NDSU Conventional Soybean, Central Location - Grandin - Author, C. Miranda.

Company/ Brand	Variety	Seed Yield	
		Grandin	2-yr. Avg.
		------(bu/a)-----	
Legacy	LC020-20	48.3	--
Legacy	LC032-20	61.1	--
NDSU	ND Benson	59.2	44.8
NDSU	ND Dickey	62.0	--
NDSU	ND Rolette	62.0	41.4
NDSU	ND13-4810 ¹	61.3	--
Prograin	Marula	48.7	--
Prograin	Maya	50.5	--
Richland	MK0249	47.7	30.3
Richland	MK0508	46.8	--
Richland	MK0603	57.2	36.9
Richland	MK8080CN	54.8	--
Sevita	Astor	41.5	31.1
Sevita	Panorama	58.4	--
Roundup Ready Checks			
RR2Y Check#1	0.3	63.3	--
RR2Y Check#2	0.5	62.9	--
RR2Y Check#3	0.8	61.4	--
RR2Y Check#4	0.9	59.2	--
Mean		55.9	36.9
CV %		7.9	--
LSD 0.05		7.3	--
LSD 0.10		6.1	--

Planted: May 19. Harvested: Oct 2. Previous crop: wheat.

Maturity was not recorded in this location due to frost damage.

¹Tofu variety.

Table 9. 2020 NDSU Conventional Soybean, Southern Locations in North Dakota - Author, C. Miranda.

Company/ Brand	Variety	Maturity ¹ (date)	Seed Yield			
			Fairmount	Milnor	2020 2-site Avg.	2-yr. Avg.
Brushvale	BS1146	9/29	54.6	22.9	38.7	39.8
Brushvale	BS1282	9/25	55.1	38.3	46.7	45.3
Brushvale	BS1345	9/29	62.4	29.2	45.8	44.6
Brushvale	BS1512	9/27	59.7	42.2	50.9	50.3
Legacy	LC120-20	9/23	39.3	33.8	36.5	--
Legacy	LC130-20	9/32	44.1	44.5	44.3	--
NDSU	ND Benson	9/10	52.9	44.2	48.5	48.3
NDSU	ND Dickey	9/20	61.0	37.6	49.3	--
NDSU	ND13-4810 ²	9/20	57.6	35.8	46.7	--
Prograin	Atena	9/30	42.3	43.0	42.7	--
Richland	MK1016	9/15	47.5	31.7	39.6	33.9
Richland	MK146	9/29	61.0	46.5	53.7	46.2
Richland	MK41	9/20	57.3	42.9	50.1	46.0
Richland	MK808CN	9/18	60.9	38.0	49.5	42.2
Sevita	Skyline	9/22	59.0	38.6	48.8	45.7
Roundup Ready Checks						
RR2Y Check#1	0.3	9/14	63.6	59.0	61.3	--
RR2Y Check#2	0.5	9/16	62.3	50.5	56.4	--
RR2Y Check#3	0.8	9/20	76.9	40.4	58.7	--
RR2Y Check#4	0.9	9/21	73.3	41.8	57.5	--
Mean		9/22	57.4	40.0	48.7	44.2
CV %		9.2	12.2	33.6	23.3	--
LSD 0.05		3.4	11.6	22.3	13.0	--
LSD 0.10		2.9	9.6	18.6	10.9	--

Planted: Fairmount, May 8. Harvested: Oct. 6. Previous crop: corn.

Planted: Milnor, June 3. Harvested Oct 7. Previous crop: fallow.

¹Maturity is date of 95% brown or tan pods.

²Tofu variety.

Table 10. 2020 NDSU Enlist, GT27, RR and Xtend Soybean, Southern Locations in North Dakota - Author, C. Miranda.

Company/ Brand	Variety	Maturity ¹ (date)	Seed Yield				
			Fairmount	Milnor	Horace	2020 3-site Avg.	2-yr. Avg.
			------(bu/a)-----				
BASF	CZ1139	9/27	55.6	52.7	13.1	40.5	--
BASF	CZ1280	9/29	59.3	56.8	13.8	43.3	--
BASF	CZ1331	10/01	58.9	48.2	6.5	37.9	--
Dahlman	1108E3N	9/28	60.1	56.5	8.2	41.6	--
Dahlman	1111E3N	9/27	53.5	59.1	17.7	43.5	--
Dahlman	6010XN	9/22	68.4	51.3	19.7	46.5	--
Dairyland	DSR-0645E	9/16	69.6	60.5	26.2	52.1	--
Dairyland	DSR-0717E	9/22	60.6	61.3	25.4	49.1	45.9
Dairyland	DSR-0847E	9/29	66.9	51.1	20.1	46.0	41.0
Dairyland	DSR-0920E	9/29	69.2	52.9	19.9	47.3	--
Dyna-Gro	S09EN41	9/21	73.7	60.6	8.6	47.7	--
Dyna-Gro	S10XT71	9/21	69.9	64.3	21.9	52.0	--
Dyna-Gro	S11EN40	9/26	73.6	61.8	21.4	52.3	--
Dyna-Gro	S13XT89	9/29	77.4	59.8	25.3	54.2	--
Golden H.	GH0749X	9/20	66.2	54.4	15.8	53.9	42.0
Golden H.	GH1225X	9/28	71.9	58.9	14.2	48.3	--
Golden H.	GH1362E3	9/28	69.4	52.9	15.0	45.7	--
Integra	40999N	9/27	59.0	54.1	15.2	42.8	--
Integra	41041N	9/28	62.7	53.2	7.2	41.1	--
Integra	50990N	9/21	56.2	59.6	19.7	45.2	--
Legacy	LS-0830N	9/24	64.5	58.8	11.5	44.9	--
Legacy	LS-0930N	9/24	56.4	45.5	21.1	41.0	--
Legacy	LS102-20	9/27	66.5	54.7	7.5	42.9	--
Legacy	LS111-20	9/28	68.5	53.9	16.7	46.3	--
Legend	08E127X	9/27	67.9	56.6	16.7	47.1	--
Legend	09X960N	9/19	65.8	53.0	18.3	45.7	--
Legend	10E125N	9/28	70.5	56.2	6.1	44.3	--
Legend	131GT132N	10/01	52.7	46.0	7.6	35.4	--
LG Seeds	LGS0735RX	9/26	68.4	56.1	17.2	47.2	42.0
LG Seeds	LGS1221RX	9/26	67.5	60.4	26.1	51.3	--
LG Seeds	LGS1337RX	9/27	64.6	56.2	11.2	44.0	--
P3 Genetics	1911E	9/27	69.2	48.9	17.8	45.3	--
P3 Genetics	2013E	9/28	69.2	57.6	17.3	48.0	--
P3 Genetics	2110E	9/30	45.0	47.8	3.5	35.7	--
Peterson	20X09	9/25	74.7	54.2	15.9	48.3	--
Proseed	EL21-03	9/28	57.2	49.1	7.0	37.7	--
Proseed	EL21-23	9/28	68.4	60.3	21.9	50.2	--
Proseed	EL91-33	9/29	70.2	55.5	17.0	47.6	--
REA	RX0929	9/23	66.4	57.5	22.2	48.7	--
REA	RX1030	9/26	65.1	50.0	18.7	44.6	--
Stine	09EA02	9/26	67.6	53.5	14.7	45.2	40.0
Syng NK	S07-Q4X	9/21	72.2	53.1	11.8	45.7	--
Syng NK	S09-D4X	9/26	66.1	61.9	17.2	48.4	42.3
Syng NK	S12-T2X	9/27	72.5	56.1	13.2	47.2	--
Syng NK	S14-U9X	9/27	65.4	51.5	13.0	43.3	--
Mean		9/25	65.4	55.2	15.7	45.7	42.2
CV %		8.3	12.7	10.5	22.9	14.8	--
LSD 0.05		3.4	13.5	9.5	6.0	6.3	--
LSD 0.10		2.9	11.3	7.9	5.0	5.3	--

Planted: Fairmount, May 8. Harvested: Oct. 6. Previous crop: corn.

Planted: Milnor, June 3. Harvested Oct 7. Previous crop: fallow.

Planted: Horace, May 27. Harvested: Oct. 5. Previous crop: wheat.

¹Maturity is date of 95% brown or tan pods.

Table 11. 2020 Soybean - Dryland, Enlist, GT27, RR and Xtend - Carrington - Authors, M. Ostlie, B. Schatz and G. Endres.

Company/ Brand	Variety	Herbicide Trait	Mat. Group	Pod Maturity ¹ (date)	Plant Ht (inch)	Plant Ht (inch)	Seeds/ Lodge ² (0-9)	Test Pound	Seed Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed yield (bu/a)		
												2020	2-yr. Avg.	3-yr Avg.
Dairyland	DSR-0577E	Enlist E3	0.5	9/10	4	34	2	3,265	57.1	19.7	35.0	57.8	51.7	--
Dairyland	DSR-0645E	Enlist E3	0.6	9/11	4	33	2	3,306	57.0	20.2	32.2	58.6	--	--
Dairyland	DSR-07147E	Enlist E3	0.7	9/14	3	31	2	3,521	56.8	19.5	34.1	56.3	--	--
Dairyland	DSR-0847E	Enlist E3	0.8	9/17	4	34	2	3,672	59.0	19.6	33.8	57.0	62.7	--
Dyna-Gro	S03XT29	RR2X	0.3	9/8	5	34	4	3,780	56.7	19.0	33.9	62.0	65.8	55.2
Dyna-Gro	S04EN21	Enlist E3	0.4	9/10	4	33	2	3,203	56.5	19.5	34.2	59.9	--	--
Dyna-Gro	S04XT91	RR2X	0.4	9/9	4	34	1	3,170	56.7	20.3	31.7	63.4	--	--
Integra	40201N	Enlist E3	0.2	9/7	3	28	1	3,508	56.7	19.1	33.9	57.0	--	--
Integra	40300N	Enlist E3	0.3	9/6	5	32	1	3,841	55.7	18.5	34.3	63.7	--	--
Integra	50309N	RR2X	0.3	9/8	5	34	4	3,664	56.3	19.5	32.9	63.3	64.8	55.5
Integra	20215	RR2Y	0.2	9/5	3	31	2	3,378	56.2	19.7	33.3	60.1	--	--
Legacy	LS 061-20	LLGT27	0.6	9/15	4	36	4	3,582	59.1	20.1	33.2	56.5	--	--
Legacy	LS-0320N	Enlist E3	0.3	9/5	3	30	1	3,543	55.5	19.2	33.3	61.4	--	--
Legacy	LS-0429	Enlist E3	0.4	9/9	3	33	2	3,333	57.0	19.6	35.0	61.5	--	--
Legacy	LS-0438	RR2X	0.4	9/11	4	39	3	3,367	56.5	19.9	34.0	66.2	66.0	55.3
Legacy	LS-0319	LLGT27	0.3	9/10	3	32	2	3,373	57.6	19.6	35.0	63.5	--	--
Legend	LS 009E955N	Enlist	0.9	9/6	2	32	2	4,445	56.6	19.5	34.0	54.4	--	--
Legend	LS 009X852N	RR2X	0.9	9/2	3	32	1	3,410	55.9	20.3	33.5	53.2	--	--
Legend	LS 05E065N	Enlist	0.5	9/10	4	34	3	3,227	56.9	20.2	31.8	63.1	--	--
Legend	LS 03X852N	RR2X	0.3	9/8	3	34	3	3,676	56.9	19.5	32.8	56.7	--	--
LG Seeds	LGS0400RX	RR2X	0.4	9/7	3	33	2	3,228	56.3	20.1	32.4	63.6	66.3	54.1
LG Seeds	LGS0595RX	RR2X	0.5	9/7	3	30	1	2,858	56.7	20.6	33.1	62.6	--	--
NDSU	ND17009GT	GT	00.9	9/5	3	34	2	3,218	58.8	19.5	35.9	53.7	55.0	47.1
NDSU	ND18008GT	GT	00.8	9/12	4	33	3	3,934	58.1	19.6	32.5	59.2	54.6	46.0
P3 Genetics	2005E	Enlist E3	0.5	9/10	3	33	2	3,474	56.3	20.4	31.7	61.1	--	--
P3 Genetics	2106E	Enlist E3	0.6	9/11	4	32	2	3,601	57.3	19.3	34.8	59.9	--	--
Peterson	20X05	RR2X	0.5	9/9	4	34	2	2,939	57.0	20.2	32.8	62.0	63.4	--
Peterson	21X04	RR2X	0.4	9/8	4	32	1	3,203	55.6	20.3	32.2	64.5	--	--
Peterson	19X03N	RR2X	0.3	9/8	4	35	3	3,806	56.8	18.8	34.3	67.2	64.5	55.7
Proseed	XT60-09	RR2X	0.9	9/6	3	35	2	3,576	56.6	19.2	33.5	58.8	--	--
Proseed	XT60-40	RR2X	0.4	9/7	3	34	2	3,401	56.5	19.5	34.3	60.3	63.3	56.5
Proseed	XT70-60	RR2X	0.6	9/11	3	37	2	3,655	57.2	19.5	32.7	55.6	--	--
Proseed	XT80-20N	RR2X	0.2	9/9	4	31	3	3,530	56.6	19.5	33.1	60.3	60.9	51.5
Proseed	XT90-50	RR2X	0.5	9/9	4	34	3	2,987	57.1	19.8	33.8	59.3	--	--
REA	RX0520	RR2X	0.5	9/10	4	36	2	2,908	57.1	19.4	33.6	57.5	63.4	--
REA	RX0721	RR2X	0.7	9/10	4	39	3	3,436	57.2	19.6	33.4	68.9	--	--
REA	RX0411	RR2X	0.4	9/9	3	42	2	3,271	57.3	20.5	31.6	64.4	--	--
Syng NK	S01-C4X	RR2X	0.1	9/3	3	34	1	3,488	57.0	19.5	32.9	56.8	--	--
Syng NK	S02-F9X	RR2X	0.2	9/2	3	30	1	3,789	56.7	20.0	32.6	59.5	61.8	--
Syng NK	S03-S6X	RR2X	0.3	9/5	3	33	2	3,464	55.8	19.7	32.3	62.9	59.8	--
Syng NK	S04-Q7X	RR2X	0.4	9/8	3	34	2	3,258	56.7	19.7	33.8	65.0	--	--
Syng NK	S05-N5X	RR2X	0.5	9/9	4	32	1	3,394	56.9	19.9	32.1	73.3	74.9	--
Thunder	SB8104N	RR2X	0.4	9/8	4	31	1	3,216	56.8	20.4	32.0	63.2	--	--
Thunder	SB8805N	RR2X	0.5	9/9	4	33	2	3,589	56.0	19.9	34.6	57.9	--	--
Thunder	SB8906N	RR2X	0.6	9/10	4	39	2	3,255	56.4	19.7	33.1	63.5	64.2	52.7
Thunder	SB8903N	RR2X	0.3	9/8	3	32	3	3,839	57.0	19.3	33.6	58.3	61.5	52.5
Mean				9/9	4	33	2	3,447	56.8	19.7	33.4	60.8	62.5	52.9
CV %				1.7	29	10.2	46	5.1	1.2	2.1	2.0	9.8	--	--
LSD 0.05				2.6	1.5	4.7	1.3	245	0.9	0.6	0.9	8.2	--	--
LSD 0.10				2.2	1.2	4.0	1.1	206	0.8	0.5	0.8	6.9	--	--

Planted: May 19. Harvested: Sept. 22. Previous crop: flax.

¹Maturity is date of 95% brown or tan pods²Lodging: 0-none, 9-lying flat on the ground.

Table 12. 2020 Soybean - Irrigated, Conventional - Carrington - Authors, M. Ostlie, B. Schatz, H. Burgard and M. Hafner.

Company/ Brand	Variety	Mat. Group	Maturity ¹ (date)	Pod Ht (inch)	Plant Ht (inch)	Plant Lodge ² (0-9)	Seeds/ Pound (seeds)	Test Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed yield		
											2020	2-yr. Avg.	3-yr Avg.
NDSU	ND Benson	0.4	9/22	2	31	2	3,725	58.5	18.3	35.6	60.6	57.4	55.6
NDSU	ND Dickey	0.7	9/23	2	34	1	3,228	58.8	17.4	35.0	62.9	63.3	--
NDSU	ND Rolette	00.9	9/13	2	29	2	3,932	59.6	18.4	34.9	61.5	--	--
NDSU	ND Stutsman	0.7	9/21	1	36	1	3,763	60.2	18.2	33.8	60.7	61.0	60.3
Sevita	Panorama	0.3	9/20	3	28	1	2,828	58.3	17.6	37.3	60.7	59.0	--
Mean			9/19	2	31	1	3,279	58.9	18.3	35.1	61.3	61.1	60.3
CV %			1.0	46	7.8	69	2.5	0.8	1.2	0.9	8.9	--	--
LSD 0.05			1.6	NS	3.4	NS	117	0.6	0.3	0.4	7.8	--	--
LSD 0.10			1.4	1.2	2.9	NS	97	0.5	0.3	0.4	6.5	--	--

Planted: May 20. Harvested: Sept. 30. Previous crop: spring wheat.

¹Maturity is date of 95% brown or tan pods.

²Lodging: 0-none, 9-lying flat on the ground.

Table 13. 2020 Soybean - Irrigated, Enlist, GT27, RR and Xtend - Carrington - Authors, M. Ostlie, B. Schatz, H. Burgard and M. Hafner.

Company/ Brand	Variety	Herbicide Trait	Mat. Group	Maturity ¹ (date)	Pod Ht (inch)	Plant Ht (inch)	Seeds/ Pound (seeds)	Test Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed Yield (bu/a)	
											2020	2-yr. Avg.
Dairyland	DSR-0577E	Enlist E3	0.5	9/20	2	35	3,375	58.3	18.4	36.0	60.9	56.9
Dairyland	DSR-0645E	Enlist E3	0.6	9/20	2	32	3,447	57.9	18.5	34.2	61.2	--
Dairyland	DSR-0717E	Enlist E3	0.7	9/20	1	34	3,748	58.8	17.5	36.0	56.3	--
Dairyland	DSR-0847E	Enlist E3	0.8	9/22	2	32	3,754	59.5	17.0	35.6	55.6	62.4
Dyna-Gro	S03XT29	RR2X	0.3	9/11	2	30	3,631	58.1	18.5	34.4	61.7	65.0
Dyna-Gro	S04EN21	Enlist E3	0.4	9/17	2	33	3,219	58.6	18.8	34.8	65.2	--
Dyna-Gro	S04XT91	RR2X	0.4	9/18	2	33	3,163	59.1	19.0	33.7	67.7	--
Legacy	LS-0319	LLGT27	0.3	9/20	2	31	3,390	57.5	17.9	37.2	68.9	--
Legacy	LS-0320N	Enlist E3	0.3	9/15	2	30	3,804	57.8	18.1	34.0	64.6	--
Legacy	LS-0429	Enlist E3	0.4	9/19	2	34	3,390	58.2	18.4	35.8	60.0	--
Legacy	LS-0438	RR2X	0.4	9/17	2	34	3,381	57.8	18.6	36.1	61.0	67.2
Legacy	LS 061-20	LLGT27	0.6	9/22	4	32	3,657	60.6	18.7	34.6	62.0	--
LG Seeds	LGS0400RX	RR2X	0.4	9/13	1	33	3,129	57.7	19.1	33.3	63.5	67.2
LG Seeds	LGS0595RX	RR2X	0.5	9/17	2	30	2,913	58.4	19.4	34.1	62.8	--
LG Seeds	LGS0735RX	RR2X	0.7	9/21	2	34	3,494	58.5	17.8	34.6	59.1	62.8
NDSU	ND18008GT	GT	00.8	9/21	3	32	4,285	60.2	18.0	34.3	59.1	54.6
NDSU	ND17009GT	GT	00.9	9/8	1	32	2,932	61.8	19.0	36.9	59.7	59.8
Proseed	XT80-20N	RR2X	0.2	9/14	1	33	3,739	58.6	18.1	34.5	59.7	60.4
Proseed	XT60-40	RR2X	0.4	9/17	2	32	3,307	58.6	18.5	35.3	60.4	67.1
Proseed	XT90-50	RR2X	0.5	9/16	2	33	2,979	58.1	18.8	34.7	65.7	--
Proseed	XT70-60	RR2X	0.6	9/20	1	34	3,971	58.8	17.8	33.8	53.2	--
Proseed	XT60-09	RR2X	0.9	9/11	1	35	3,484	59.2	18.0	35.2	65.3	--
REA	RX0411	RR2X	0.4	9/16	2	39	3,491	58.8	19.3	33.4	58.4	--
REA	RX0520	RR2X	0.5	9/18	2	34	3,040	59.2	17.8	35.7	58.3	65.1
REA	RX0721	RR2X	0.7	9/19	2	35	3,603	58.3	18.1	35.0	66.4	--
Thunder	SB8906N	RR2X	0.6	9/19	2	34	3,440	58.1	17.9	35.3	58.6	65.3
Thunder	SB8807N	RR2X	0.7	9/19	2	35	3,980	58.7	17.6	34.4	56.7	61.4
Thunder	TE7107N	Enlist	0.7	9/21	3	31	3,415	60.3	17.2	35.9	53.3	--
Thunder	SB8009N	RR2X	0.9	9/21	1	33	3,815	59.4	17.5	35.2	60.2	66.0
Mean				9/18	2	33	3,482	58.8	18.3	35.0	60.9	62.9
CV %				1.7	47	5.3	4.3	1.1	1.8	1.3	7.9	--
LSD 0.05				3.0	NS	2.5	213	0.9	0.5	0.6	6.7	--
LSD 0.10				2.5	NS	2.1	178	0.8	0.4	0.5	5.6	--

Planted: May 21. Harvested: Sept. 30. Previous crop: corn.

¹Maturity is date of 95% brown or tan pods. The frost/freeze events of September 8 and 9 terminated the upper canopy pod set; however, remaining plant material remained viable.

Table 14. 2020 Soybean - Dryland, Conventional - Carrington - Authors, M. Ostlie, B. Schatz and G. Endres.

Company/ Brand	Variety	Mat. Group	Maturity ¹ (date)	Pod Ht (inch)	Plant Ht (inch)	Seeds/ Pound	Test Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed Yield	
										2020	3-yr. Avg.
NDSU	ND Benson	0.4	9/2	4	25	4,112	56.9	19.5	35.7	42.8	41.2
NDSU	ND Dickey	0.7	9/8	4	28	3,271	56.9	19.2	34.3	42.0	--
NDSU	ND Rolette	00.9	8/29	3	25	4,425	56.9	19.9	34.4	42.8	41.5
NDSU	ND Stutsman	0.7	9/4	4	28	3,750	57.6	20.0	33.7	50.7	47.1
Prograin	Hana	0.1	8/28	2	24	3,799	58.0	17.8	37.3	37.4	--
Prograin	Maya	0.1	8/28	2	24	3,448	59.2	17.2	38.1	37.4	--
Richland	MK808CN	0.8	9/5	2	28	4,302	58.3	20.1	33.9	38.2	35.3
Richland	MK0249	0.2	8/31	2	20	5,460	57.2	18.6	34.1	37.8	36.3
Richland	MK0508	0.8	9/4	3	27	6,004	58.2	18.1	34.8	36.0	30.3
Richland	MK0603	0.6	9/7	4	28	5,819	56.3	17.0	35.6	34.8	29.6
Sevita	Panorama	0.3	9/1	3	22	3,342	58.1	17.9	36.8	39.9	--
Mean			9/4	3	26	3,970	56.9	19.3	34.7	40.1	36.7
CV %			1.4	34	10.8	4.4	0.9	2.2	1.9	8.7	--
LSD 0.05			2.1	1.5	4.0	245	0.7	0.6	0.9	4.9	--
LSD 0.10			1.8	1.3	3.3	205	0.6	0.5	0.8	4.1	--

Planted: May 19. Harvested: Sept. 23. Previous crop: flax.

¹Maturity is date of 95% brown or tan pods.**Table 15. 2020 Soybean - Organic - Carrington - Authors, S. Zwinger and S. Schaubert.**

Company/ Brand	Variety	Mat. Group	Maturity ¹ (date)	Plant Ht (inch)	Plant Lodge (0-9)	Test Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed Yield (bu/a)
NDSU	ND Benson	0.4	--	37	3	55.0	19.4	36.4	46.3
NDSU	ND Bison	0.7	9/10	33	2	55.3	19.1	35.7	43.7
NDSU	ND Dickey	0.7	9/13	36	1	55.1	18.6	35.7	51.2
NDSU	ND Henson	0.0	9/4	31	2	55.3	19.1	36.2	45.8
NDSU	ND Rolette	00.9	9/15	31	1	54.5	19.4	35.2	44.0
NDSU	ND Stutsman	0.7	9/9	35	1	55.1	19.6	34.3	49.5
NDSU	ND1406HP	0.6	9/7	35	1	54.8	17.3	38.6	47.5
NDSU	Prosoy	0.9	9/11	40	5	54.8	18.1	37.9	44.8
NDSU	Sheyenne	0.7	9/9	34	2	55.0	19.1	35.2	44.5
NDSU	Traill	0.0	9/3	33	2	55.1	19.4	36.4	40.4
Viking	0.MN081CN	0.8	--	41	3	54.9	18.2	37.0	38.8
Viking	0.0654AT	0.6	--	35	2	55.8	18.5	37.4	41.8
Viking	0.1202N	1.2	--	36	3	54.9	17.8	36.1	46.4
Viking	1218N	1.2	--	38	2	54.9	18.7	36.3	44.1
Mean			9/7	35	2	55.0	18.8	36.2	45.1
CV %			1.3	7.8	45	0.6	2.0	1.7	7.5
LSD 0.05			2.0	3.9	1.2	0.4	0.5	0.9	4.8
LSD 0.10			1.7	3.3	1.0	0.4	0.4	0.7	4.0

Planted: May 20. Harvested: Sept 25. Previous crop: barley.

¹Maturity is date of 95% brown or tan pods. Varieties without maturity date did not reach PM by Sept. 9 frost.

Table 16. 2020 Soybean - Enlist, GT27, RR and Xtend - Dazey (Carrington REC) - Authors, M. Ostlie, B. Schatz and T. Indergaard.

Company/ Brand	Variety	Herbicide Trait	Mat. Group	Maturity ¹ (date)	Pod Ht (inch)	Plant Ht (inch)	Plant Lodge ² (0-9)	Test Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed Yield		
											2020	2-yr. Avg. ------(bu/a)-----	3-yr. Avg.
Dairyland	DSR-0645E	Enlist E3	0.6	9/14	4	28	0	53.7	18.4	33.1	50.5	--	--
Dairyland	DSR-0717E	Enlist E3	0.7	9/15	3	27	0.3	54.4	17.6	34.6	45.2	50.8	--
Dairyland	DSR-0847E	Enlist E3	0.8	9/18	4	28	0.5	56.2	17.2	35.1	50.4	48.7	--
Dairyland	DSR-0920E	Enlist E3	0.9	9/19	4	30	0.3	54.6	17.4	34.5	51.5	--	--
Dairyland	DSR-1032E	Enlist E3	1.0	9/15	4	29	0.5	54.9	17.2	35.1	44.2	--	--
Dyna-Gro	S07EN61	Enlist E3	0.7	9/15	4	29	0.5	55.2	17.4	35.6	55.3	--	--
Dyna-Gro	S07XT28	RR2X	0.7	9/14	3	28	0.3	54.5	17.7	34.6	41.0	49.1	54.7
Dyna-Gro	S09EN41	Enlist E3	0.9	9/17	4	28	0.3	55.8	15.9	36.6	50.3	--	--
Dyna-Gro	S09XT50	RR2X	0.9	9/17	4	30	0	55.3	16.8	35.1	39.5	48.9	--
Integra - GF	50510	RR2X	0.5	9/14	4	29	0.5	54.7	17.9	34.7	54.2	--	--
Integra - GF	40831N	Enlist	0.8	9/17	4	29	0.3	55.4	17.2	35.6	46.6	--	--
Legacy	LS 082-20	Enlist E3	0.8	9/14	4	29	0.3	54.9	18.0	34.0	52.0	--	--
Legacy	LS-0830N	RR2X	0.8	9/17	3	31	0	54.9	16.9	35.0	42.1	50.0	--
Legacy	LS-0930N	RR2X	0.9	9/18	4	29	0.5	54.7	18.0	33.5	49.5	--	--
Legacy	LS-102-20	Enlist E3	1.0	9/18	5	27	0	56.1	15.7	36.9	46.7	--	--
Legacy	LS-111-20	LLGT27	1.1	9/19	5	31	0	55.4	17.1	34.4	45.7	--	--
Legend	LS 08E127N	Enlist	0.8	9/15	4	29	0	54.9	18.0	34.2	52.0	--	--
Legend	LS 09X960N	RR2X	0.9	9/17	3	28	0.3	54.7	17.3	35.5	45.6	48.5	--
Legend	LS 10E125N	Enlist	1.0	9/17	4	28	0	56.2	15.9	36.5	45.6	--	--
LG Seeds	LGS0400RX	RR2X	0.4	9/12	3	26	0	53.5	18.6	32.7	49.8	--	--
LG Seeds	LGS0595RX	RR2X	0.5	9/13	3	27	0	54.2	18.8	33.6	48.8	--	--
LG Seeds	LGS0735RX	RR2X	0.7	9/16	4	30	0	55.0	16.8	34.9	44.2	45.7	--
NDSU	ND17009GT	GT	00.9	9/6	3	27	0	56.0	19.0	36.0	46.6	49.7	49.9
P3 Genetics	2005E	Enlist E3	0.5	9/13	3	28	0.3	53.5	18.3	33.5	54.0	--	--
P3 Genetics	2106E	Enlist E3	0.6	9/15	3	26	0.3	54.1	17.9	35.1	49.2	--	--
Peterson	20X05	RR2X	0.5	9/12	3	28	0.3	54.5	18.1	34.6	52.9	--	--
Proseed	XT60-40	RR2X	0.4	9/11	3	28	0	54.2	18.4	34.6	49.8	--	--
Proseed	XT70-60	RR2X	0.6	9/14	3	30	0.3	54.4	17.0	34.1	45.8	--	--
Proseed	XT80-20N	RR2X	0.2	9/10	3	28	0.3	54.5	17.4	34.0	42.4	--	--
Proseed	XT90-50	RR2X	0.5	9/13	3	30	0.3	54.7	18.1	34.4	48.3	--	--
Syng NK	S04-Q7X	RR2X	0.4	9/11	3	27	0	54.8	17.8	35.3	50.4	--	--
Syng NK	S05-N5X	RR2X	0.5	9/13	2	27	0	54.5	18.0	33.6	51.9	57.8	--
Syng NK	S07-Q4X	RR2X	0.7	9/16	3	25	0	54.5	17.0	35.5	42.3	48.7	--
Syng NK	S09-D4X	RR2X	0.9	9/17	3	29	0.3	55.6	17.6	34.1	48.5	55.3	--
Thunder	SB8010N	RR2X	1.0	9/18	4	28	0.5	54.7	18.0	33.6	47.4	--	--
Thunder	SB8807N	RR2X	0.7	9/14	4	28	0	54.7	17.2	34.0	43.4	49.7	--
Thunder	TE7107N	Enlist	0.7	9/16	4	27	0.3	55.6	17.3	35.7	43.1	--	--
Thunder	TE7110N	Enlist	1.0	9/18	3	26	0.3	55.8	15.8	36.8	44.9	--	--
Mean				9/15	3.5	28	0.2	54.9	17.5	34.7	47.7	50.2	52.3
CV %				0.9	27	6.2	204	0.8	1.4	1.1	7.8	--	--
LSD 0.05				1.4	1.3	2.5	NS	0.6	0.3	0.5	5.2	--	--
LSD 0.10				1.2	1.1	2.1	NS	0.5	0.3	0.4	4.4	--	--

Planted: May 28. Harvested: Oct. 6. Previous crop: spring wheat.

¹Maturity is date of 95% brown or tan pods.²Lodging: 0-none, 9-lying flat on the ground.

Table 17. 2020 Soybean - Irrigated, Enlist, RR and Xtend - Oakes (Carrington REC) - Authors, K. Cooper, H. Eslinger and S. Nelson.

Company/ Brand	Variety	Mat. Group	Maturity ¹ (date)	Plant Lodge ² (0-9)	Seeds/ Pound (seeds)	Test Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed Yield	
									2020	2-yr. ----- (bu/a) -----
Dairyland	DSR-0645E	0.6	9/9	0	2,871	55.9	19.6	33.6	65.5	--
Dairyland	DSR-07147E	0.7	9/17	0	2,975	56.1	19.7	34.1	67.2	--
Dairyland	DSR-0847E	0.8	9/18	0.5	3,217	57.6	19.4	33.6	66.7	74.6
Dairyland	DSR-0920E	0.9	9/20	0	2,926	56.5	18.7	35.1	65.2	--
Dairyland	DSR-1032E	1.0	9/17	0.3	3,044	57.3	19.2	34.9	59.0	--
Dyna-Gro	S09XT50	0.9	9/20	0	2,853	57.3	19.1	33.9	66.9	69.4
Dyna-Gro	S10XT71	1.0	9/20	0	3,025	56.3	20.1	32.0	67.7	--
Dyna-Gro	S11EN40	1.1	9/20	0	2,958	57.7	17.7	34.5	64.6	68.8
Integra	4104N	1.0	9/20	0	3,128	57.5	18.3	35.2	68.1	--
Integra	41220N	1.2	9/21	0	2,653	57.0	18.7	33.9	64.4	--
Legacy	LS-0830N	0.8	9/20	0	3,128	57.2	18.9	34.3	65.3	68.3
Legacy	LS-0903N	0.9	9/20	0.3	3,128	56.6	20.0	32.0	65.7	--
Legacy	LS-102-20	1.0	9/20	0.3	2,965	57.7	18.5	35.1	68.0	--
Legacy	LS1320-N	1.1	9/21	0.8	2,945	57.1	18.6	34.0	66.9	--
Legacy	LS 082-20	0.8	9/18	0	3,172	56.7	20.0	33.2	63.3	--
LG Seeds	LGS0735RX	0.7	9/20	0	2,668	56.8	19.1	33.9	67.4	--
LG Seeds	LGS1221RX	1.2	9/20	0.3	2,637	56.7	19.0	33.7	66.3	--
P3 Genetics	1911E	1.1	9/19	0.3	2,700	57.4	19.2	33.5	61.7	--
P3 Genetics	2013E	1.3	9/21	0	3,150	56.8	18.6	33.7	66.6	--
P3 Genetics	2109E	0.9	9/18	0.3	2,881	56.8	19.9	33.5	61.5	--
Proseed	EL21-03	1.0	9/20	0	2,732	57.9	18.3	35.3	47.2	--
Proseed	EL21-23	1.2	9/20	0.8	3,194	57.3	20.1	31.8	64.0	--
Proseed	EL91-33	1.3	9/21	0.3	3,150	56.9	18.6	33.7	63.8	71.5
REA	RX1030	1.0	9/19	0	2,945	57.2	19.3	34.2	63.6	68.7
REA	RX1529	1.5	9/21	0.8	2,766	56.1	18.9	34.3	68.7	72.5
REA	RX0929	0.9	9/18	0	2,971	56.7	18.8	34.9	66.2	67.2
Mean			9/19	0.2	2,956	57.0	19.1	33.9	64.7	69.5
CV %			1.0	193	6.0	0.4	0.8	0.8	11.2	--
LSD 0.05			1.7	0.5	489	0.3	0.2	0.4	10.2	--
LSD 0.10			1.4	0.4	375	0.3	0.2	0.3	8.5	--

Planted: May 26. Harvested: Oct. 2. Previous crop: field corn.

¹Maturity is date of 95% brown or tan pods.²Lodging: 0-none, 9-lying flat on the ground.

Table 18. 2020 Soybean - Irrigated, Conventional - Oakes (Carrington REC) - Authors, K. Cooper, H. Eslinger and S. Nelson.

Company/ Brand	Variety	Mat. Group	Maturity ¹ (date)	Plant Lodge ² (0-9)	Seeds/ Pound (seeds)	Test Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed Yield	
									2020	3-yr. Avg.
Brushvale	BS1146	1.1	9/20	0.5	2,915	56.5	18.4	36.9	60.7	--
Brushvale	BS1512	1.5	9/19	0.5	2,617	56.7	18.7	35.7	56.3	--
Legacy	LS 120-20	1.2	9/21	0.8	2,737	56.1	19.3	35.4	52.9	--
Legacy	LS 130-20	1.3	9/21	0.3	2,853	55.9	18.7	35.9	53.5	--
NDSU	ND Dickey	0.7	9/13	0	2,550	56.4	18.9	35.0	65.1	--
NDSU	ND Stutsman	0.7	9/17	0.3	2,689	57.0	19.5	34.2	66.7	72.8
Prograin	Atena	1.2	9/20	0	2,786	58.0	18.2	36.7	58.5	--
Sevita	Panorama	0.3	9/7	0	2,974	56.4	18.1	38.1	57.7	--
Sevita	Skyline	1.1	9/19	0.3	2,727	57.4	18.9	37.7	57.2	--
Mean			9/17	0.3	2,761	56.7	18.7	36.2	58.7	72.8
CV %			1.6	143	9.9	0.8	0.9	0.9	6.2	--
LSD 0.05			2.6	0.6	401	0.7	0.2	0.5	5.3	--
LSD 0.10			2.2	0.5	332	0.5	0.2	0.4	4.4	--

Planted: May 26. Harvested: Oct. 2. Previous crop: field corn.

¹Maturity is date of 95% brown or tan pods.²Lodging: 0-none, 9-lying flat on the ground.**Table 19. 2020 Soybean - Conventional - Dazey (Carrington REC) - Authors, M. Ostlie, B. Schatz and T. Indergaard.**

Company/ Brand	Variety	Mat. Group	Maturity ¹ (date)	Pod Ht (inch)	Plant Lodge ² (0-9)	Plant Height (inch)	Test Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed Yield	
										2020	3-yr. Avg.
Legacy	LS 020-20	0.2	9/10	3	1.0	30	57.8	18.6	35.5	49.0	--
Legacy	LS 120-20	1.2	9/16	3	0.7	30	57.7	17.1	36.0	32.8	--
Legacy	LS 130-20	1.3	9/21	4	0	33	59.0	16.5	35.8	33.2	--
NDSU	ND Benson	0.4	9/12	3	0	29	57.6	18.3	35.3	49.6	54.7
NDSU	ND Dickey	0.7	9/15	2	0	28	57.5	17.0	35.0	45.4	--
NDSU	ND Rolette	00.9	9/6	3	0.3	29	58.1	19.1	33.9	52.2	55.7
NDSU	ND Stutsman	0.7	9/17	2	0	28	57.6	18.4	33.4	55.6	58.6
Prograin	Marula	0.6	9/14	2	0	31	58.0	17.2	36.6	42.0	--
Prograin	Maya	0.6	9/12	3	0	30	57.8	17.8	35.7	45.4	--
Richland	MK0249	0.2	9/12	2	0	26	57.5	17.7	32.6	37.9	46.1
Richland	MK0508	0.8	9/14	2	1.7	29	58.3	16.7	34.1	34.4	45.3
Richland	MK0603	0.6	9/17	3	3.0	33	57.9	15.7	35.4	40.5	44.8
Richland	MK1016	1.0	9/18	3	2.0	35	58.5	15.6	36.0	40.5	46.2
Richland	MK146	1.1	9/20	3	0.3	33	57.9	16.1	38.1	42.9	56.1
Richland	MK41	1.1	9/16	2	1.0	33	57.3	16.4	37.4	50.8	57.2
Richland	MK808CN	0.8	9/13	4	1.7	32	58.2	18.8	32.9	44.2	59.2
Mean			9/14	3	0.7	31	57.9	17.3	35.2	43.5	52.4
CV %			1.5	28	95	7.4	0.8	2.0	1.4	7.8	--
LSD 0.05			2.7	1.2	0.7	3.6	0.7	0.6	0.8	6	--
LSD 0.10			2.3	1.0	0.6	3.0	0.6	0.5	0.7	5	--

Planted: May 28. Harvested: Oct. 6. Previous crop: spring wheat.

¹Maturity is date of 95% brown or tan pods.²Lodging score: 0-upright, 9-flat on ground.

Table 20. 2020 Soybean - Enlist, GT27, RR and Xtend - LaMoure (Carrington REC) - Authors, C. Miranda and B. Schatz.

Company/ Brand	Variety	Herbicide Trait	Maturity Group	Seed Yield		
				2020	2-yr. Avg.	3-yr. Avg.
				------(bu/a)-----		
Dairyland	DSR-0645E	Enlist E3	0.6	56.7	--	--
Dairyland	DSR-0717E	Enlist E3	0.7	64.6	59.0	--
Dairyland	DSR-0847E	Enlist E3	0.8	66.5	58.5	--
Dairyland	DSR-0920E	Enlist E3	0.9	63.4	--	--
Dairyland	DSR-1032E	Enlist E3	1.0	61.3	--	--
Dyna-Gro	S07EN61	Enlist E3	0.7	59.0	--	--
Dyna-Gro	S07XT28	RR2X	0.7	56.4	55.4	53.4
Dyna-Gro	S09EN41	Enlist E3	0.9	61.6	--	--
Dyna-Gro	S09XT50	RR2X	0.9	61.5	56.5	--
Dyna-Gro	S10XT71	RR2X	1.0	65.7	--	--
Dyna-Gro	S11EN40	Enlist E3	1.1	64.6	59.6	--
Integra	50990N	RR2X	0.9	60.7	57.4	--
Integra	40999N	Enlist	0.9	41.1	--	--
Legacy	LS 082-20	Enlist E3	0.8	60.1	--	--
Legacy	LS-0830N	RR2X	0.8	57.8	56.6	--
Legacy	LS-0930N	RR2X	0.9	56.2	--	--
Legacy	LS-102-20	Enlist E3	1.0	49.1	--	--
Legacy	LS-111-20	LLGT27	1.1	63.2	--	--
LG Seeds	LGS0595RX	RR2X	0.5	67.7	--	--
LG Seeds	LGS0735RX	RR2X	0.7	65.2	58.0	--
LG Seeds	LGS1221RX	RR2X	1.2	69.4	--	--
P3 Genetics	1911E	Enlist E3	1.1	64.5	--	--
P3 Genetics	2108E	Enlist E3	0.8	61.2	--	--
P3 Genetics	2109E	Enlist E3	0.9	61.9	--	--
Proseed	EL21-03	Enlist E3	1.0	52.7	--	--
Proseed	EL21-23	Enlist E3	1.2	63.6	--	--
Proseed	EL91-33	Enlist E3	1.3	64.7	57.7	--
Syng NK	S09-D4X	RR2X	0.9	69.3	--	--
Syng NK	S12-T2X	RR2X	1.2	70.6	--	--
Syng NK	S14-U9X	RR2X	1.4	74.9	--	--
Thunder	SB8009N	RR2X	0.9	59.8	--	--
Thunder	SB8010N	RR2X	1.0	71.6	--	--
Thunder	TE7110N	Enlist	1.0	62.5	--	--
Mean				62.1	57.6	53.4
CV %				12.6	--	--
LSD 0.05				12.8	--	--
LSD 0.10				10.7	--	--

Planted: May 20. Harvested: Oct. 1. Previous crop corn.

The frost and freeze of Sept. 8 and 9 resulted in varieties not reaching maturity, hence data not reported.

Table 21. 2020 Soybean - Conventional - LaMoure (Carrington REC) - Authors, C. Miranda and B. Schatz.

Company/ Brand		Maturity Group	Seed Yield	
			2020	3-yr. Avg.
------(bu/a)-----				
Brushvale	BS1146	1.1	53.0	--
Brushvale	BS1512	1.5	51.4	--
NDSU	ND Benson	0.4	51.0	45.9
NDSU	ND Dickey	0.7	60.4	--
Richland IFC	MK0508	0.8	38.2	31.0
Richland IFC	MK0603	0.6	46.7	41.9
Richland IFC	MK1016	1.0	47.8	36.8
Richland IFC	MK146	1.1	47.1	47.1
Richland IFC	MK41	1.1	46.6	45.8
Richland IFC	MK808CN	0.8	48.1	42.3
Sevita	Skyline	1.1	48.9	--
Mean			49.0	41.5
CV %			10.3	--
LSD 0.05			8.7	--
LSD 0.10			7.2	--

Planted: May 20. Harvested Oct. 1. Previous crop: corn.

The frost and freeze of Sept. 8 and 9 resulted in varieties not reaching maturity, hence data not reported.

Table 22. 2020 Soybean - Enlist, GT27, RR and Xtend - Wishek (Carrington REC) - Authors, M. Ostlie, B. Schatz and T. Indergaard.

Company/ Brand	Variety	Maturity		Pod	Plant	Seeds/	Test	Seed	Seed	Seed Yield	
		Group	Maturity ¹ (date)	Ht (inch)	Ht (inch)	Pound	Weight (lb/bu)	Oil (%)	Protein (%)	2020 ----- (bu/a)	2-yr. Avg. -----
LG Seeds	LGS0595RX	0.5	9/13	5	31	2,534	54.0	20.0	34.3	73.0	--
LG Seeds	LGS0735RX	0.7	9/16	5	37	3,377	53.8	18.7	34.9	64.5	58.1
P3 Genetics	2106E	0.6	9/15	5	29	3,336	53.6	18.6	36.8	60.5	--
P3 Genetics	2109E	0.9	9/16	6	34	3,505	54.0	19.3	35.0	61.0	--
Proseed	EL21-03	1.0	9/17	6	29	3,537	54.7	17.0	36.9	50.8	--
Proseed	EL21-23	1.2	9/17	5	34	3,492	54.0	19.4	33.4	57.5	--
Proseed	EL91-33	1.3	9/18	8	36	3,386	55.1	17.7	34.9	47.1	41.5
REA	RX0411	0.4	9/12	5	40	3,161	54.3	19.7	33.8	67.6	--
REA	RX0520	0.5	9/14	6	36	2,756	54.2	18.8	36.2	62.6	51.8
REA	RX0721	0.7	9/13	6	36	3,240	53.8	19.3	34.4	71.9	--
REA	RX0929	0.9	9/15	5	33	3,384	53.8	18.5	36.1	61.5	58.1
REA	RX1030	1.0	9/15	4	30	3,157	53.9	19.1	34.9	62.7	55.8
Syng NK	S05-N5X	0.5	9/12	3	30	2,983	54.2	19.5	34.4	68.8	--
Syng NK	S07-Q4X	0.7	9/14	4	33	3,010	54.0	18.8	36.1	63.9	--
Syng NK	S09-D4X	0.9	9/16	6	34	3,072	54.4	19.5	33.1	64.6	--
Mean			9/15	5	33	3,195	54.1	18.9	35.0	62.5	53.1
CV %			1.1	27	8.6	3.7	0.8	1.3	1.5	8.0	--
LSD 0.05			1.8	2.0	4.1	170	0.6	0.3	0.8	7.0	--
LSD 0.10			1.5	1.7	3.4	142	0.5	0.3	0.6	5.9	--

Planted: May 27. Harvested: Sept. 25. Previous crop: spring wheat.

¹Maturity is date of 95% brown or tan pods.**Table 23. 2020 Soybean - Conventional - Wishek (Carrington REC) - Authors, M. Ostlie, B. Schatz and T. Indergaard.**

Company/ Brand	Variety	Maturity		Pod	Plant	Seeds/	Test	Seed	Seed	Seed Yield	
		Group	Maturity ¹ (date)	Ht (inch)	Ht (inch)	Pound	Weight (lb/bu)	Oil (%)	Protein (%)	2020 ----- (bu/a)	3-yr. Avg. -----
NDSU	ND Benson	0.4	9/8	4	22	3,747	54.5	20.0	35.8	40.6	36.9
NDSU	ND Dickey	0.7	9/9	3	26	3,073	54.0	19.9	34.2	48.3	--
NDSU	ND Stutsman	0.7	9/9	4	29	3,546	54.7	20.4	33.6	47.7	42.7
Richland	MK1016	1.0	9/14	3	29	6,110	55.1	18.6	35.0	36.1	33.5
Richland	MK146	1.1	9/17	4	27	3,570	53.8	19.0	35.4	36.6	40.4
Richland	MK41	1.1	9/14	4	27	3,385	54.6	18.8	35.5	39.9	39.8
Richland	MK808CN	0.8	9/15	4	30	3,744	54.7	21.3	32.2	39.7	39.0
Richland	MK0508	0.8	9/13	4	30	5,358	55.0	19.3	33.3	40.2	36.0
Richland	MK0603	0.6	9/13	5	28	5,495	54.4	18.2	34.5	36.4	33.0
Sevita	Skyline	1.1	9/16	6	30	3,308	55.6	19.7	35.9	46.3	--
Mean			9/13	4	28	4,134	54.6	19.5	34.5	41.2	37.6
CV %			1.3	35	10.3	4.5	0.7	1.3	1.1	12.8	--
LSD 0.05			2.1	NS	4.2	271	0.5	0.4	0.6	7.6	--
LSD 0.10			1.7	NS	3.5	225	0.4	0.3	0.5	6.3	--

Planted: May 27. Harvested: Sept. 25. Previous crop: spring wheat.

¹Maturity is date of 95% brown or tan pods.

Table 24. 2020 Soybean - Enlist, GT, RR and Xtend - Langdon - Authors, B. Hanson and L. Henry.

Company/ Brand	Variety	Herbicide Trait	Maturity Group	Maturity ¹ (date)	Plant Height (inch)	Plant Lodge (0-9)	Seed Oil (%)	Seed Protein (%)	Seed Yield (bu/a)		
									2020	2-yr. Avg.	2-site Avg. ²
Biogene	BG8000	RR2XT	00.9	9/14	34	0	15.2	34.0	58.4	55.9	57.2
Biogene	BG8007	RR2XT	00.7	9/11	35	2	15.7	32.9	57.4	51.3	57.8
Biogene	BG8008	RR2XT	00.8	9/11	31	1	15.6	33.2	57.4	52.0	58.2
Dahlman	1102E3N	E3	0.2	9/19	30	1	14.9	33.3	62.4	--	62.7
Dahlman	68008XN	RR2XT	00.8	9/13	34	1	15.9	32.4	56.9	--	57.4
Dyna-Gro	S007XT27	RR2XT	00.7	9/12	29	1	15.7	32.9	57.1	54.6	56.0
Dyna-Gro	S009XT49	RR2XT	00.9	9/14	35	1	15.5	33.0	64.1	58.3	63.7
Dyna-Gro	S009XT68	RR2XT	00.9	9/16	36	1	14.3	34.9	63.4	58.8	64.3
Dyna-Gro	SX203007X	RR2XT	00.7	9/10	36	2	15.6	31.9	59.6	--	61.8
Golden H.	GH00833E3	E3	00.8	9/14	30	1	15.7	32.9	57.0	--	58.0
Golden H.	GH0145X	RR2XT	0.1	9/13	34	1	15.4	33.0	61.4	55.8	62.5
Inn victis	A00918X	RR2XT	00.9	9/16	38	1	14.8	34.6	61.6	--	56.5
Inn victis	A00979X	RR2XT	00.9	9/17	29	1	15.0	34.5	61.7	--	61.6
Integra	20097	RR2Y	00.9	9/14	35	1	16.0	34.0	63.8	59.2	63.1
Integra	40089N	E3	00.8	9/14	29	2	15.8	32.8	55.8	56.1	59.0
Integra	50060N	RR2XT	00.6	9/11	34	1	15.4	33.6	58.6	--	56.9
Integra	50081N	RR2XT	00.8	9/8	30	0	15.2	34.7	57.4	--	58.1
Legacy	LS 012--20	E3	0.1	9/17	31	2	15.2	34.3	65.6	--	64.2
Legacy	LS-00639N RR2X	RR2XT	00.6	9/10	35	1	15.3	33.8	60.5	55.3	59.4
Legacy	LS-00930 RR2X	RR2XT	00.9	9/16	29	1	14.8	34.9	54.3	54.9	57.0
Legacy	LS-0239N RR2X	RR2XT	0.2	9/18	33	2	14.4	33.9	64.5	60.7	63.9
Legend	LS 005E953N	E3	00.5	9/14	31	2	15.5	32.9	53.3	50.4	--
Legend	LS 009E955N	E3	00.9	9/17	31	1	15.2	33.8	50.1	47.5	--
Legend	LS 009X852N	RR2XT	00.9	9/11	33	0	15.9	32.8	60.7	56.2	--
LG Seeds	LGS00663RX	RR2XT	00.6	9/10	32	1	15.8	33.4	63.0	56.8	61.7
LG Seeds	LGS00899RX	RR2XT	00.8	9/14	34	1	15.7	32.8	59.0	55.4	59.1
LG Seeds	LGS0111RX	RR2XT	0.1	9/18	37	2	15.1	34.2	62.8	59.6	60.4
NDSU	ND17009GT	GT	00.9	9/12	35	2	15.9	35.7	55.3	50.7	55.1
Peterson	18X008N	RR2XT	00.8	9/13	33	0	16.0	33.1	60.4	56.0	63.2
Peterson	19EN008	E3	00.8	9/14	33	2	15.9	33.2	57.7	55.8	59.0
Peterson	21X007	RR2XT	00.7	9/9	34	1	15.8	32.0	59.3	--	59.4
Pioneer	P00A49X	RR2XT	0.0	9/12	32	1	16.0	32.8	58.0	55.7	57.7
Pioneer	P00A75X	RR2XT	0.0	9/17	31	1	16.0	32.4	56.1	--	58.7
Pioneer	P03A17X	RR2XT	0.2	9/17	30	0	16.1	32.8	53.3	49.8	55.3
Pioneer	P01A84X	RR2XT	0.1	9/17	33	2	15.5	33.6	53.2	53.0	55.4
Proseed	50-10RR2Y	RR2Y	0.1	9/16	38	1	15.7	34.0	59.2	56.2	60.2
Proseed	EL80-093	E3	00.9	9/17	32	2	15.0	33.8	50.9	--	53.7
Proseed	XT20-07	RR2XT	00.7	9/11	33	2	15.3	32.5	57.8	--	57.2
Proseed	XT60-09	RR2XT	00.9	9/16	38	1	14.2	34.9	62.0	58.4	61.3
Proseed	XT70-09N	RR2XT	00.9	9/14	34	1	15.7	33.1	58.5	--	59.8
REA	RX00749	RR2XT	00.7	9/15	38	1	14.9	34.4	60.9	53.1	--
Stine	003EB62	E3	00.8	9/16	30	2	15.6	32.8	53.6	--	--
Stine	01EA63	E3	0.1	9/17	31	1	14.6	34.5	60.8	55.8	--
Syng NK	S006-R7X	RR2XT	00.6	9/7	31	0	16.2	33.5	63.8	55.6	--
Syng NK	S008-E3	E3	00.8	9/13	30	1	15.2	32.9	58.2	--	61.7
Thunder	39005 R2Y	RR2Y	00.5	9/10	29	0	15.8	34.0	61.8	--	61.7
Thunder	SB8001	RR2XT	0.1	9/16	30	2	15.2	34.6	54.0	54.1	57.7
Thunder	SB81006	RR2XT	00.6	9/8	34	2	16.1	31.7	58.8	--	60.8
Thunder	SB87009	RR2XT	00.9	9/15	39	1	14.7	34.3	61.7	--	59.5
Thunder	SB88007N	RR2XT	00.7	9/14	33	0	15.6	33.1	56.3	53.5	54.7
Thunder	TE71008N	E3	00.8	9/12	33	2	15.6	33.8	59.2	--	60.8
Mean				9/14	33	1	15.4	33.5	58.8	55.0	59.4
CV %				1.3	6.3	76	1.4	1.3	7.8	--	--
LSD 0.05				2.1	2.9	1.2	0.4	0.9	6.2	--	--
LSD 0.10				1.8	2.4	1.0	0.4	0.7	5.2	--	--

Planted: May 22. Harvested: Sept. 29.

¹Date of physiological maturity at R7 stage (one pod on the main stem is mature brown or tan color).²2-site average of northern region. Langdon REC and Pembina County (Cavalier).

Table 25. 2020 Soybean - Conventional - Langdon - Authors, B. Hanson and L. Henry.

Company/ Brand		Maturity		Plant	Plant	Seed	Seed	Seed Yield		
Variety	Group	Maturity ¹	Height	Lodge	Oil	Protein	2020	2-yr. Avg.	2-site Avg. ²	
		(date)	(inch)	(0-9)	(%)	(%)	------(bu/a)-----			
Conventional										
Legacy	LS 0070-20	00.7	9/8	35	1.3	15.6	35.4	50.0	--	55.2
Legacy	LS 0080-20	00.7	9/8	31	1.0	15.0	35.8	46.7	--	52.6
Legacy	LS 0090-20	00.8	9/11	32	0.8	14.6	38.7	52.1	--	53.8
Legacy	LS 020-20	0.2	9/11	35	1.3	15.0	35.0	52.7	--	56.1
NDSU	ND Benson	0.4	9/18	31	1.3	15.4	33.8	46.6	43.9	54.0
NDSU	ND Rolette	00.9	9/13	32	1.8	15.9	33.1	49.6	46.6	59.6
Prograin	Hana	0.1	9/12	30	1.0	14.7	37.5	49.3	--	57.2
Prograin	Maya	00.7	9/12	32	0.0	14.0	38.0	46.9	--	52.8
Richland IFC	MK0249	0.2	9/15	21	1.3	15.0	32.6	41.4	37.9	48.2
Sevita	Astor	0.2	9/18	32	0.5	15.5	36.6	46.7	43.7	54.3
Roundup Ready Check										
RR2Y Check#1		00.5	9/6	28	0.5	15.7	33.2	48.2	--	56.6
RR2Y Check#2		00.8	9/8	29	0.8	15.6	32.9	54.6	50.9	60.5
RR2Y Check#3		00.9	9/11	33	1.3	15.3	33.7	58.1	52.0	67.4
Mean			9/13	31	1.0	15.2	35.1	49.5	45.8	56.0
CV %			1.3	11.4	76	1.6	0.9	8.4	--	--
LSD 0.05			2.1	5.1	1.0	0.5	0.7	5.7	--	--
LSD 0.10			1	3.3	0.7	0.4	0.6	3.7	--	--

Planted: May 22. Harvested: Sept. 29.

¹Date of physiological maturity at R7 stage (one pod on the main stem is mature brown or tan color).²A 2-site average of conventional trials at Langdon REC and Walsh County (Park River).

Table 26. 2020 Soybean - Enlist, GT, RR and Xtend - Park River (Langdon REC) - Authors, B. Hanson and L. Henry (1 of 2).

Company/ Brand	Variety	Herbicide Trait	Maturity Group	Maturity ¹ Maturity ¹ (date)	Plant Height (inch)	Plant Lodge (0-9)	Seed Oil (%)	Seed Protein (%)	Seed Yield (bu/a)		
									2020	2-yr. Avg.	2-site avg. ²
Biogene	BG8000	RR2XT	00.9	9/4	42	3	17.4	32.1	66.2	--	--
Biogene	BG8007	RR2XT	00.7	9/1	41	2	16.8	33.1	65.3	--	--
Biogene	BG8008	RR2XT	00.8	9/5	40	1	16.8	31.9	71.7	--	--
Dahlman	6004XN	RR2XT	0.4	9/11	39	2	16.5	33.8	72.9	--	--
Dahlman	6903XN	RR2XT	0.3	9/10	41	4	16.4	32.9	67.0	52.5	61.6
Dairyland	DSR-0119E	E3	0.1	9/9	42	5	16.9	32.7	69.3	--	62.5
Dairyland	DSR-0577E	E3	0.5	9/11	43	4	16.6	34.8	66.9	--	61.4
Dairyland	E8-201E	E3	00.8	9/8	43	5	16.6	32.9	67.9	--	62.1
Dairyland	E9-201E	E3	00.9	9/9	41	4	16.4	33.9	63.8	--	57.2
Dyna-Gro	S02EN71	RR2XT	0.2	9/8	36	1	15.8	33.4	78.0	--	68.4
Dyna-Gro	S03XT29	RR2XT	0.3	9/9	43	5	16.1	32.7	69.7	53.3	63.2
Dyna-Gro	S04XT91	RR2XT	0.4	9/9	41	0	16.6	33.4	73.0	--	68.2
Golden H.	GH0145X	RR2XT	0.1	9/6	42	2	16.7	32.6	70.2	51.0	--
Golden H.	GH0325E3	E3	0.3	9/7	41	1	16.2	32.9	75.8	--	67.2
Hefty	H04X8	RR2XT	0.4	9/11	41	2	16.5	33.3	70.5	--	66.2
Integra	40089N	E3	00.8	9/5	42	4	17.0	32.8	68.3	--	59.9
Integra	40201N	E3	0.2	9/10	35	1	16.7	33.1	73.7	--	65.3
Integra	50081N	RR2XT	00.8	9/3	38	2	15.7	34.0	67.1	--	61.6
Integra	50309N	RR2XT	0.3	9/8	43	4	16.0	33.8	69.6	52.3	63.2
Legacy	LS-0239N RR2X	RR2XT	0.2	9/8	42	4	15.8	33.5	73.6	55.8	64.9
Legacy	LS-0320N E3	E3	0.3	9/8	40	1	16.3	33.0	74.7	--	66.3
Legacy	LS-0429 E3	E3	0.4	9/12	42	4	16.4	34.3	69.8	52.3	62.9
Legacy	LS-0438	RR2XT	0.4	9/11	40	3	16.5	34.2	72.9	53.4	66.9
LG Seeds	LGS00663RX	RR2XT	00.6	9/1	40	2	16.4	32.6	71.1	48.2	64.4
LG Seeds	LGS00899RX	RR2XT	00.8	9/5	41	4	17.5	32.0	69.5	49.1	63.7
LG Seeds	LGS0111RX	RR2XT	0.1	9/10	46	4	16.6	33.8	70.5	53.0	63.7
LG Seeds	LGS0355RX	RR2XT	0.3	9/10	41	5	15.7	33.3	63.4	50.2	60.1
LG Seeds	LGS0400RX	RR2XT	0.4	9/11	42	3	16.7	32.3	76.8	58.1	69.9
NDSU	ND17009GT	GT	00.9	9/5	45	5	17.0	35.4	65.3	45.8	58.8
PFS	19EN008	E3	00.8	9/7	43	5	17.0	32.8	66.3	48.3	--
P3 Genetics	2002E	E3	0.2	9/8	37	4	16.2	33.5	69.9	50.9	64.5
P3 Genetics	2003E	E3	0.3	9/8	39	1	16.7	32.4	76.2	52.5	66.6
Pioneer	P00A75X	RR2XT	0.0	9/5	39	2	17.6	33.0	72.1	--	--
Pioneer	P03A17X	RR2XT	0.2	9/7	37	1	17.6	31.8	67.1	51.4	--
Pioneer	P03A26X	RR2XT	0.3	9/10	42	3	16.8	32.7	69.5	--	--
Pioneer	P01A84X	RR2XT	0.1	9/8	41	3	17.0	33.5	69.7	50.9	--
Proseed	50-10RR2Y	E3	0.1	9/8	43	4	17.8	31.8	71.1	52.8	63.8
Proseed	EL80-093	E3	00.9	9/7	41	4	16.1	34.5	71.1	--	60.0
Proseed	XT20-07	RR2XT	00.7	9/4	42	4	16.7	31.6	71.5	--	62.0
Proseed	XT60-09	RR2XT	00.9	9/5	45	3	15.8	33.2	73.3	54.0	67.3
Proseed	XT70-09N	RR2XT	00.9	9/4	45	2	17.1	32.4	62.3	--	59.8
REA	RX0228	RR2XT	0.2	9/7	45	2	16.7	33.0	66.6	47.3	--
REA	RX0411	RR2XT	0.4	9/10	47	2	16.6	32.0	76.6	--	67.9
Syng NK	S01-C4X	RR2XT	0.1	9/7	44	3	16.3	32.4	72.1	52.2	65.4
Syng NK	S02-F9X	RR2XT	0.2	9/7	39	0	16.7	32.3	77.1	54.6	68.5
Syng NK	S03-E3	E3	0.3	9/9	40	1	16.7	32.4	81.3	--	--
Mean				9/8	41	3	16.6	33.0	71.0	51.7	64.3
CV %				1.5	5.5	37	1.9	1.5	9.1	--	--
LSD 0.05				2.3	3.1	1.4	0.6	1.0	8.7	--	--
LSD 0.10				2.0	2.6	1.2	0.5	0.8	7.3	--	--

Table 26. 2020 Soybean - Enlist, GT, RR and Xtend - Park River (Langdon REC) - Authors, B. Hanson and L. Henry (2 of 2).

Company/ Brand	Variety	Herbicide Trait	Maturity Group	Maturity ¹ (date)	Plant Height (inch)	Plant Lodge (0-9)	Seed Oil (%)	Seed Protein (%)	Seed Yield (bu/a)		
									2020	2-yr. Avg.	2-site avg. ²
Syng NK	S03-S6X	RR2XT	0.3	9/9	44	4	16.7	31.9	69.6	48.9	63.7
Thunder	SB8001	RR2XT	0.1	9/5	39	1	16.3	33.7	80.3	55.3	69.4
Thunder	SB8104N	RR2XT	0.4	9/9	39	1	17.0	33.0	76.3	--	69.9
Thunder	SB8903N	RR2XT	0.3	9/10	42	5	16.1	32.7	65.9	50.8	61.5
Thunder	TE7003N	E3	0.3	9/8	40	1	16.6	32.6	70.7	50.8	63.4
Thunder	TE7101N	E3	0.1	9/8	36	1	16.1	32.9	78.8	--	68.1
Mean				9/8	41	3	16.6	33.1	68.5	51.7	64.3
CV %				1.5	5.5	37	1.9	1.5	9.1	--	--
LSD 0.05				2.3	3.1	1.4	0.6	1.0	8.7	--	--
LSD 0.10				2.0	2.6	1.2	0.5	0.8	7.3	--	--

Planted: May 16. Harvested: Sept. 24.

¹Date of physiological maturity at R7 stage (one pod on the main stem is mature brown or tan color).

²2-site average Walsh County (Park River) and Nelson County (Pekin).

Table 27. 2020 Soybean - Conventional - Park River (Langdon REC) - Authors, B. Hanson and L. Henry.

Company/ Brand	Variety	Maturity Group	Maturity ¹ (date)	Plant Height (inch)	Plant Lodge (0-9)	Seed Oil (%)	Seed Protein (%)	Seed Yield (bu/a)			
									2020	2-yr. Avg.	2-site Avg. ²
Conventional											
Legacy	LS 0070-20	00.7	9/6	36.7	4.8	16.6	35.7	60.3	--	55.2	
Legacy	LS 0080-20	00.7	9/3	38.3	1.5	15.8	35.2	58.4	--	52.6	
Legacy	LS 0090-20	00.8	9/5	36.2	2.8	16.1	36.8	55.5	--	53.8	
Legacy	LS 020-20	0.2	9/4	44.4	3.8	16.4	34.3	59.4	--	56.1	
NDSU	ND Benson	0.4	9/11	42.5	4.0	16.7	34.0	61.3	43	54.0	
NDSU	ND Rolette	00.9	9/5	38.5	1.3	17.4	32.5	69.5	45.25	59.6	
Prograin	Hana	0.1	9/6	38.1	1.3	15.4	37.7	65.1	--	57.2	
Prograin	Maya	00.7	9/7	40.7	2.0	14.5	37.4	58.7	--	52.8	
Sevita	Astor	0.2	9/10	36.9	2.8	16.9	36.3	61.9	47.4	54.3	
Richland IFC	MK0249	0.2	9/11	36.4	5.5	16.1	32.6	55.0	--	48.2	
Roundup Ready Check											
RR2Y Check#1		00.5	9/1	36.3	1.3	16.6	32.2	65.0	--	56.6	
RR2Y Check#2		00.8	8/30	38.7	0.8	16.6	32.8	66.4	49.8	60.5	
RR2Y Check#3		00.9	9/1	41.7	1.0	16.7	32.4	76.7	57.1	67.4	
Mean			9/7	38.9	2.5	16.3	34.6	62.6	48.5	56.0	
CV %			2.2	4.6	61.4	1.9	1.5	9.3	--	--	
LSD 0.05			3.5	2.5	2.0	0.6	1.1	8.1	--	--	
LSD 0.10			2.9	2.1	1.6	0.5	0.9	6.8	--	--	

Planted: May 16. Harvested: Sept. 24.

¹Date of physiological maturity at R7 stage (one pod on the main stem is mature brown or tan color).

²A 2-site average of conventional trials at Langdon REC and Walsh County (Park River).

Table 28. 2020 Soybean - Enlist, GT, RR and Xtend - Cavalier (Langdon REC) - Authors, B. Hanson and L. Henry (1 of 2).

Company/ Brand	Variety	Herbicide Trait	Maturity Group	Maturity ¹ (date)	Plant Height (inches)	Plant Lodge (0-9)	Seed Oil (%)	Seed Protein (%)	Seed Yield (bu/a)		
									2020	2-yr. Avg.	2-site Avg. ²
Biogene	BG8000	RR2XT	00.9	9/17	40	2	15.6	34.1	56.0	--	57.2
Biogene	BG8007	RR2XT	00.7	9/13	34	0	15.7	33.8	58.1	--	57.8
Biogene	BG8008	RR2XT	00.8	9/15	33	0	15.5	34.0	59.0	--	58.2
Dahlman	1102E3N	E3	0.2	9/21	31	0	15.6	33.5	63.0	--	62.7
Dahlman	68008XN	RR2XT	00.8	9/16	36	1	16.2	33.7	57.8	--	57.4
Dyna-Gro	S007XT27	RR2XT	00.7	9/16	36	0	15.8	33.6	54.8	45.4	56.0
Dyna-Gro	S009XT49	RR2XT	00.9	9/15	38	2	15.8	34.3	63.2	51.7	63.7
Dyna-Gro	S009XT68	RR2XT	00.9	9/16	41	1	14.9	34.3	65.2	53.4	64.3
Dyna-Gro	SX203007X	RR2XT	00.7	9/13	37	2	15.3	33.0	64.0	--	61.8
Golden H.	GH00833E3	E3	00.8	9/14	33	0	16.2	32.8	58.9	--	58.0
Golden H.	GH0145X	RR2XT	0.1	9/17	39	1	15.3	33.5	63.5	51.3	62.5
Innictis	A00918X	RR2XT	00.9	9/18	39	1	14.9	34.6	51.4	--	56.5
Innictis	A00979X	RR2XT	00.9	9/18	29	0	15.3	35.3	61.4	--	61.6
Integra	20097	RR2Y	00.9	9/17	40	2	16.3	34.2	62.3	50.5	63.1
Integra	40089N	E3	00.8	9/15	36	1	16.0	33.4	62.2	51.2	59.0
Integra	50060N	RR2XT	00.6	9/13	35	0	15.7	33.9	55.2	--	56.9
Integra	50081N	RR2XT	00.8	9/13	36	1	15.5	34.8	58.7	--	58.1
Legacy	LS 012--20	E3	0.1	9/19	33	0	15.6	34.1	62.7	--	64.2
Legacy	LS-00639N RR2X	RR2XT	00.6	9/12	35	0	15.8	33.8	58.3	48.9	59.4
Legacy	LS-00930 RR2X	RR2XT	00.9	9/20	32	0	15.6	35.1	59.7	48.8	57.0
Legacy	LS-0239N RR2X	RR2XT	0.2	9/21	36	2	15.2	33.3	63.2	54.4	63.9
LG Seeds	LGS00663RX	RR2XT	00.6	9/13	35	0	15.6	34.2	60.3	48.3	61.7
LG Seeds	LGS00899RX	RR2XT	00.8	9/15	37	2	16.0	33.2	59.2	49.1	59.1
LG Seeds	LGS0111RX	RR2XT	0.1	9/21	38	2	15.5	34.5	58.0	51.4	60.4
NDSU	ND17009GT	GT	00.9	9/16	38	1	15.9	36.3	54.9	46.0	55.1
Peterson	18X008N	RR2XT	00.8	9/16	36	1	15.9	34.0	66.0	53.3	63.2
Peterson	19EN008	E3	00.8	9/16	34	1	16.3	33.1	60.2	48.0	59.0
Peterson	21X007	RR2XT	00.7	9/12	35	1	15.2	33.1	59.5	--	59.4
Pioneer	P00A49X	RR2XT	0.0	9/16	35	1	16.2	33.7	57.3	47.0	57.7
Pioneer	P00A75X	RR2XT	0.0	9/18	35	0	16.4	32.5	61.3	--	58.7
Pioneer	P03A17X	RR2XT	0.2	9/20	34	0	16.0	33.7	57.3	48.3	55.3
Pioneer	P03A26X	RR2XT	0.3	9/21	37	0	15.2	34.0	51.8	--	--
Pioneer	P01A84X	RR2XT	0.1	9/20	36	2	16.3	33.2	57.5	48.1	55.4
Proseed	50-10RR2Y	RR2Y	0.1	9/18	41	2	16.8	33.5	61.1	51.7	60.2
Proseed	EL80-093	E3	00.9	9/20	33	1	15.8	33.6	56.4	--	53.7
Proseed	XT20-07	RR2XT	00.7	9/16	35	1	15.4	32.9	56.5	--	57.2
Proseed	XT60-09	RR2XT	00.9	9/17	39	2	14.3	35.2	60.5	50.0	61.3
Proseed	XT70-09N	RR2XT	00.9	9/17	36	1	16.1	33.5	61.1	--	59.8
REA	RX0228	RR2XT	00.7	9/18	42	1	15.4	35.0	57.7	49.9	--
REA	RX0327	RR2XT	00.8	9/21	36	0	15.2	35.5	62.1	--	--
Syng NK	S008-E3	E3	00.8	9/15	36	2	16.5	32.8	65.1	--	61.7
Syng NK	S01-C4X	RR2XT	0.1	9/18	37	1	14.8	33.8	62.0	52.2	--
Syng NK	S02-F9X	RR2XT	0.2	9/20	35	0	15.9	32.8	66.0	54.5	--
Syng NK	S03-E3	E3	0.3	9/21	35	0	15.4	33.7	65.4	--	--
Thunder	39005 R2Y	RR2Y	00.5	9/12	32	1	16.5	33.8	61.5	--	61.7
Thunder	SB8001	RR2XT	0.1	9/20	31	0	15.5	35.3	61.3	48.5	57.7
Thunder	SB81006	RR2XT	00.6	9/14	38	1	15.5	33.1	62.8	--	60.8
Mean				9/16	36	1	15.7	33.9	59.9	49.9	59.4
CV %				1.1	6.0	91	2.1	1.3	7.7	--	--
LSD 0.05				1.9	3.0	1.2	0.7	0.9	6.3	--	--
LSD 0.10				1.6	2.5	1.0	0.6	0.7	5.3	--	--

Table 28. 2020 Soybean - Enlist, GT, RR and Xtend - Cavalier (Langdon REC) - Authors, B. Hanson and L. Henry (2 of 2).

Company/ Brand	Variety	Herbicide Trait	Maturity Group	Maturity ¹ (date)	Plant Height (inches)	Plant Lodge (0-9)	Seed Oil (%)	Seed Protein (%)	Seed Yield		
									2020	2-yr. Avg.	2-yr. site Avg. ²
Thunder	SB87009	RR2XT	00.9	9/17	38	1	14.7	35.3	57.3	49.4	59.5
Thunder	SB88007N	RR2XT	00.7	9/16	37	1	16.0	33.7	53.1	46.0	54.7
Thunder	TE71008N	E3	00.8	9/15	34	1	16.0	33.5	62.3	--	60.8
Mean				9/16	36	1	15.7	33.9	59.9	49.9	59.4
CV %				1.1	6.0	91	2.1	1.3	7.7	--	--
LSD 0.05				1.9	3.0	1.2	0.7	0.9	6.3	--	--
LSD 0.10				1.6	2.5	1.0	0.6	0.7	5.3	--	--

Planted: May 18. Harvested: Sept. 30.

¹Date of physiological maturity at R7 stage (one brown pod on the main stem obtains mature brown or tan color).

²2-site average of our northern region. Langdon REC and Pembina County (Cavalier).

Table 29. 2020 Soybean - Enlist, GT, RR and Xtend - Pekin (Langdon REC) - Authors, B. Hanson and L. Henry (1 of 2).

Company/ Brand	Variety	Herbicide Trait	Maturity Group	Maturity ¹ (date)	Plant Height (inch)	Plant Lodge (0-9)	Seed Oil (%)	Seed Protein (%)	Seed Yield		
									2020	2-yr. Avg.	2-site Avg. ²
									------(bu/a)-----		
Dahlman	6004XN	RR2XT	0.4	9/21	34	0	15.1	35.1	60.1	--	66.5
Dahlman	6903XN	RR2XT	0.3	9/19	36	3	14.6	34.1	56.1	53.9	61.6
Dairyland	DSR-0119E	E3	0.1	9/18	33	1	15.9	32.2	55.6	--	62.5
Dairyland	DSR-0577E	E3	0.5	9/22	37	0	16.0	34.9	55.9	--	61.4
Dairyland	EC8-201E	E3	00.8	9/14	33	2	16.0	33.1	56.2	--	62.1
Dairyland	EC9-201E	E3	00.9	9/16	34	2	15.9	33.5	50.5	--	57.2
Dyna-Gro	S02EN71	RR2XT	0.2	9/19	29	0	15.0	33.9	58.7	--	68.4
Dyna-Gro	S03XT29	RR2XT	0.3	9/17	36	2	14.8	33.9	56.7	55.0	63.2
Dyna-Gro	S04XT91	RR2XT	0.4	9/19	32	0	15.6	33.9	63.3	--	68.2
Golden H.	GH0325E3	E3	0.3	9/16	31	0	15.4	33.6	58.5	--	67.2
Golden H.	GH0443X	RR2XT	0.4	9/18	34	0	15.3	35.0	59.8	--	--
Hefty	H04X8	RR2XT	0.4	9/21	35	0	15.6	35.0	61.9	--	66.2
Integra	40089N	E3	00.8	9/13	34	1	16.0	33.3	51.5	--	59.9
Integra	40201N	E3	0.2	9/19	30	0	15.2	33.8	56.9	--	65.3
Integra	50081N	RR2XT	00.8	9/6	33	0	15.4	35.1	56.1	--	61.6
Integra	50309N	RR2XT	0.3	9/16	36	3	15.1	33.9	56.8	53.0	63.2
Legacy	LS-0239N RR2X	RR2XT	0.2	9/17	36	3	14.8	34.1	56.2	57.1	64.9
Legacy	LS-0320N E3	E3	0.3	9/17	32	0	15.1	33.7	57.9	--	66.3
Legacy	LS-0429 E3	E3	0.4	9/21	35	1	15.5	35.8	56.0	53.4	62.9
Legacy	LS-0438	RR2XT	0.4	9/19	36	0	15.6	35.0	60.8	58.6	66.9
LG Seeds	LGS00663RX	RR2XT	00.6	9/8	34	0	15.9	33.4	57.6	51.2	64.4
LG Seeds	LGS00899RX	RR2XT	00.8	9/11	37	1	16.4	33.5	57.9	54.4	63.7
LG Seeds	LGS0111RX	RR2XT	0.1	9/16	38	1	15.6	34.7	56.8	54.3	63.7
LG Seeds	LGS0355RX	RR2XT	0.3	9/16	36	1	14.7	33.8	56.8	56.1	60.1
LG Seeds	LGS0400RX	RR2XT	0.4	9/19	37	0	15.5	33.5	62.9	57.7	69.9
NDSU	ND17009GT	GT	00.9	9/14	37	3	15.6	36.3	52.3	48.7	58.8
P3 Genetics	2002E	E3	0.2	9/17	33	2	14.9	35.0	59.1	--	64.5
P3 Genetics	2003E	E3	0.3	9/16	31	0	15.2	34.0	57.0	--	66.6
Proseed	50-10RR2Y	RR2Y	0.1	9/16	41	2	16.3	33.6	56.5	55.0	63.8
Proseed	EL80-093	E3	00.9	9/16	32	0	15.9	33.2	48.9	--	60.0
Proseed	XT20-07	RR2XT	00.7	9/11	35	0	15.8	32.6	52.5	--	62.0
Proseed	XT60-09	RR2XT	00.9	9/15	41	1	14.8	34.7	61.2	57.7	67.3
Proseed	XT70-09N	RR2XT	00.9	9/12	36	0	16.3	33.3	57.2	--	59.8
REA	RX0327	RR2XT	0.3	9/15	34	0	15.5	34.7	59.6	--	--
REA	RX0411	RR2XT	0.4	9/19	45	2	15.3	33.2	59.1	--	67.9
Stine	01EA63	E3	0.1	9/15	30	1	15.1	34.9	56.8	--	--
Stine	05EA23	E3	0.5	9/23	31	1	15.6	33.4	57.2	--	--
Syng NK	S01-C4X	RR2XT	0.1	9/16	36	0	15.5	33.5	58.6	55.3	65.4
Syng NK	S02-F9X	RR2XT	0.2	9/16	33	0	16.2	32.7	59.8	55.6	68.5
Syng NK	S03-S6X	RR2XT	0.3	9/17	37	1	15.3	33.3	57.7	54.8	63.7
Syng NK	S04-Q7X	RR2XT	0.4	9/17	34	0	15.1	35.0	60.5	--	--
Syng NK	S05-N5X	RR2XT	0.5	9/19	31	0	15.5	33.7	59.7	59.9	--
Thunder	SB8001	RR2XT	0.1	9/14	31	0	15.9	34.6	58.4	52.0	69.4
Thunder	SB8104N	RR2XT	0.4	9/17	32	0	15.8	34.0	63.5	--	69.9
Thunder	SB8903N	RR2XT	0.3	9/17	36	2	14.9	33.8	57.0	55.7	61.5
Mean				9/16	34	1	15.5	34.0	57.5	54.8	64.3
CV %				1.4	4.2	96	1.4	1.1	6.6	--	--
LSD 0.05				2.1	2.0	1.2	0.4	0.8	5.3	--	--
LSD 0.10				1.8	1.7	1.0	0.4	0.7	4.4	--	--

Table 29. 2020 Soybean - Enlist, GT, RR and Xtend - Pekin (Langdon REC) - Authors, B. Hanson and L. Henry (2 of 2).

Company/		Herbicide	Maturity		Plant	Plant	Seed	Seed	Seed Yield		
Brand	Variety	Trait	Group	Maturity ¹	Height	Lodge	Oil	Protein	2020	2-yr. Avg.	2-site Avg. ²
				(date)	(inch)	(0-9)	(%)	(%)	------(bu/a)-----		
Thunder	TE7003N	E3	0.3	9/16	32	0	15.4	33.3	56.0	52.0	63.4
Thunder	TE7101N	E3	0.1	9/19	29	0	15.0	34.2	57.4	--	68.1
Mean				9/16	34	1	15.5	34.1	57.2	54.8	64.3
CV %				1.4	4.2	96	1.4	1.1	6.6	--	--
LSD 0.05				2.1	2.0	1.2	0.4	0.8	5.3	--	--
LSD 0.10				1.8	1.7	1.0	0.4	0.7	4.4	--	--

Planted: May 28. Harvested: Oct. 5.

¹Date of physiological maturity at R7 stage (one brown pod on the main stem obtains mature brown or tan color).²2-site average of our southern region, Walsh County (Park River) and Nelson County (Pekin).**Table 30. 2020 Soybean - Conventional - Minot (North Central REC) - Authors, E. Eriksmoen, A. Kraklau and D. Howat.**

Company/		Maturity	IDC		Plant	Test	Seed Yield	
Brand	Variety	Group	Rating ¹	Maturity ²	Height	Weight	2020	3-yr. Avg.
			(1-5)	(date)	(inches)	(lb/bu)	------(bu/a)-----	
NDSU	Ashtabula	0.4		9/9	32.5	52.9	36.7	--
NDSU	ND Benson	0.4	2.0	9/10	34.0	52.7	33.9	34.0
NDSU	ND Dickey	0.7	1.9	9/14	31.4	52.9	43.3	--
NDSU	ND Rolette	00.9	1.9	9/6	31.4	53.2	41.3	38.4
Mean			2.4	9/9	32.3	52.9	38.8	36.2
CV %			17	11	6.4	3.7	9.2	--
LSD 0.05			0.3	2.0	3.0	NS	6.0	--
LSD 0.10			0.2	1.0	3.0	NS	5.0	--

Planted: May 22. Harvested: Oct. 1. Previous crop: soybean.

¹Iron deficiency chlorosis rating: 1-green, 3-yellow, 5-dead tissue.²Date of physiological maturity at R7 stage (one brown pod on the main stem obtains mature brown or tan color).

Table 31. 2020 Soybean - Enlist, GT, RR and Xtend - Minot (North Central REC) - Authors, E. Eriksmoen, A. Kraklau and D. Howat.

Company/ Brand	Variety	Herbicide Trait ¹	Maturity Group	IDC Rating ² (1-5)	Maturity ³ (date)	Plant Height (inches)	Test Weight (lb/bu)	Seed Yield (bu/a)	
								2020	3-yr. Avg.
Dairyland	DSR-0119E	Enlist E3	0.1	2.6	9/7	22	57.7	39.7	--
Dairyland	EXP E9-201E	Enlist E3	00.9	1.6	9/7	26	58.0	32.6	--
Dairyland	EXP E8-201E	Enlist E3	00.8	2.2	9/5	26	58.0	35.6	--
Dyna-Gro	S009XT68	Xtend	00.9	2.2	9/7	29	57.7	36.9	40.0
Dyna-Gro	S02EN71	Enlist E3	0.2	3.0	9/12	22	57.8	34.2	--
Dyna-Gro	S03XT29	Xtend	0.3	1.9	9/10	29	58.0	37.0	40.2
Golden H.	GH00629X	Xtend	00.6	2.2	8/30	22	57.5	34.5	--
Golden H.	GH00833E3	Enlist E3	00.8	2.2	9/6	24	57.3	34.2	--
Golden H.	GH0443X	Xtend	0.4	1.9	9/12	25	58.5	35.1	--
Integra	20215	RR2	0.2	2.5	9/5	25	56.8	28.5	41.2
Integra	40129N	Enlist E3	0.1	2.1	9/10	23	57.3	29.0	--
Integra	40201N	Enlist E3	0.2	2.9	9/13	23	57.8	34.4	--
Integra	40300N	Enlist E3	0.3	2.3	9/7	25	57.2	30.0	--
Integra	50309N	Xtend	0.3	1.8	9/7	27	58.0	33.1	36.6
Legacy	LS 012-20	Enlist E3	0.1	2.6	9/10	26	57.5	31.2	--
Legacy	LS-00639N RR2X	Xtend	00.6	2.4	9/2	27	57.9	32.1	--
Legacy	LS-00930 RR2X	Xtend	00.9	2.5	9/8	23	57.5	34.1	--
Legacy	LS-0239N RR2X	Xtend	0.2	2.0	9/7	26	58.2	32.0	--
Legacy	LS-0319 LLGT27	LL, GT	0.3	2.5	9/12	27	57.8	35.1	--
LG Seeds	LGS00899RX	Xtend	00.8	2.7	9/3	26	57.8	32.1	--
LG Seeds	LGS0111RX	Xtend	0.1	2.3	9/7	29	57.3	35.1	43.7
LG Seeds	LGS0355RX	Xtend	0.3	2.1	9/8	28	57.2	34.9	--
LG Seeds	LGS0400RX	Xtend	0.4	2.5	9/11	30	57.0	37.3	--
NDSU	ND17009GT	GT	00.9	3.1	9/7	29	59.1	27.1	37.6
P3 Genetics	2002E	Enlist E3	0.2	2.5	9/9	22	57.4	28.3	--
Peterson	19EN008	Enlist E3	00.8	2.1	9/6	25	58.1	33.8	--
Peterson	19X03N	Xtend	0.3	2.1	9/9	28	58.1	37.4	--
Peterson	21X007	Xtend	00.7	3.0	9/1	25	57.3	28.1	--
Proseed	EL80-093	Enlist E3	00.9	2.1	9/6	26	58.5	35.5	--
Proseed	XT20-07	Xtend	00.7	2.4	8/31	26	57.7	32.1	--
Proseed	XT70-09	Xtend	00.9	2.6	9/6	29	58.1	36.2	--
Syng NK	S006-R7X	Xtend	00.6	2.8	8/31	22	57.5	33.5	--
Syng NK	S01-C4X	Xtend	0.1	2.3	9/7	28	58.7	36.3	--
Syng NK	S02-F9X	Xtend	0.2	3.1	9/5	24	57.9	36.4	--
Syng NK	S03-S6X	Xtend	0.3	2.6	9/9	30	57.9	39.1	--
Syng NK	S04-Q7X	Xtend	0.4	2.0	9/13	25	57.8	32.6	--
Syng NK	S05-N5X	Xtend	0.5	2.8	9/13	28	58.0	37.5	--
Thunder	SB8001	Xtend	0.1	2.5	9/7	25	57.9	33.9	--
Thunder	TE71008N	Enlist E3	00.8	2.1	9/5	24	57.9	35.6	--
Thunder	TE7101N	Enlist E3	0.1	3.1	9/11	21	57.4	30.8	--
Thunder	SB81006	Xtend	00.6	2.7	9/2	27	57.4	32.4	--
Mean				2.4	9/7	26	57.8	33.8	39.9
CV %				15	0/2	9.5	1.1	8.1	--
LSD 0.05				0.2	3.0	4.0	1.0	4.4	--
LSD 0.10				0.2	3.0	3.0	0.8	3.6	--

Planted: May 22. Harvested: Oct. 1. Previous crop: soybean.

¹Herbicide trait: GT= Glyphosate Tolerant, LL = Libert Link.²Iron deficiency chlorosis rating: 1-green, 3-yellow, 5-dead tissue.³Date of physiological maturity at R7 stage (one brown pod on the main stem obtains mature brown or tan color).

Table 32. 2020 Soybean - Enlist, GT, RR and Xtend - Mohall (North Central REC) - Authors, E. Eriksmoen, A. Kraklau and D. Howat.

Company/ Brand	Variety	Herbicide Trait ¹	Maturity Group	IDC Rating ²	Plant Height	Test Weight	Seed Yield	
							2020	2-yr. Avg.
				(1-5)	(inch)	(lb/bu)	----- (bu/a) -----	
Dairyland	DSR-0119E	Enlist E3	0.1	2.6	36	56.1	35.3	--
Dairyland	EXP E8-201E	Enlist E3	00.8	2.2	38	57.9	41.6	--
Dairyland	EXP E9-201E	Enlist E3	00.9	1.6	37	58.1	33.8	--
Dyna-Gro	S005XT38	Xtend	00.5	2.3	37	57.7	41.5	40.6
Dyna-Gro	S007XT27	Xtend	00.7	2.4	32	58.0	37.5	38.5
Integra	20097	RR2	00.9	2.8	39	58.0	39.7	41.7
Integra	40089N	Enlist E3	00.8	2.1	37	57.9	41.2	40.1
Integra	50060N	Xtend	00.6	2.1	37	58.7	37.4	42.4
Integra	50081N	Xtend	00.8	2.6	32	58.3	45.2	--
LG Seeds	LGS00899RX	Xtend	00.8	2.7	37	57.6	41.3	43.3
LG Seeds	LGS0111RX	Xtend	0.1	2.3	39	57.8	36.7	46.7
LG Seeds	LGS0355RX	Xtend	0.3	2.1	37	57.4	35.5	--
NDSU	ND17009GT	GT	00.9	3.1	34	59.0	36.9	35.3
Proseed	EL80-093	Enlist E3	00.9	2.1	37	57.6	38.3	42.0
Proseed	XT20-07	Xtend	00.7	2.4	37	58.0	38.6	--
Proseed	XT60-09	Xtend	00.9	2.0	39	58.5	38.5	41.3
Proseed	XT70-09	Xtend	00.9	2.6	36	57.9	39.3	--
Syng NK	S006-R7X	Xtend	00.6	2.8	33	58.3	50.3	--
Syng NK	S01-C4X	Xtend	0.1	2.3	37	58.8	33.8	--
Syng NK	S02-F9X	Xtend	0.2	3.1	32	58.1	38.8	--
Syng NK	S03-S6X	Xtend	0.3	2.6	32	58.3	31.0	--
Syng NK	S04-Q7X	Xtend	0.4	2.0	37	57.9	31.7	--
Syng NK	S05-N5X	Xtend	0.5	2.8	32	58.5	35.8	--
Mean				2.4	36	58.0	38.2	41.2
CV %				14.7	4.7	0.7	5.5	--
LSD 0.05				0.2	2.0	0.6	3.0	--
LSD 0.10				0.2	2.0	0.5	2.5	--

Planted: May 26. Harvested: Oct. 6. Previous crop: durum.

¹Herbicide trait: GT= Glyphosate Tolerant, RR = Roundup Ready.

²Iron deficiency chlorosis rating: 1-green, 3-yellow, 5-dead tissue.

Table 33. 2020 Soybean - Enlist, GT, RR and Xtend - Garrison (North Central REC) - Authors, E. Eriksmoen, A. Kraklau and D. Howat.

Company/ Brand	Variety	Herbicide Trait ¹	Maturity Group	IDC Rating ²	Plant Height	Test Weight	Seed Yield	
							2020	2-yr. Avg.
				(1-5)	(inch)	(lb/bu)	----- (bu/a) -----	
Dyna-Gro	S02EN71	Enlist E3	0.2	3.0	20	56.5	35.0	--
Dyna-Gro	S03XT29	Xtend	0.3	1.9	22	56.2	35.9	43.6
Dyna-Gro	S04XT77	Xtend	0.4	2.3	19	56.1	35.6	42.7
Integra	20215	RR	0.2	2.5	22	56.1	37.9	46.6
Integra	40129N	Enlist E3	0.1	2.1	20	55.5	32.8	--
Integra	40201N	Enlist E3	0.2	2.9	17	55.6	37.2	--
Integra	50309N	Xtend	0.3	1.8	23	56.0	32.3	41.6
Legacy	LS-0239N RR2X	Xtend	0.2	2.0	21	56.3	35.7	--
Legacy	LS-0319 LLGT27	GT, LL	0.3	2.5	19	56.3	34.7	--
Legacy	LS-0320N E3	Enlist E3	0.3	2.4	21	55.6	38.9	--
Legacy	LS-0429 E3	Enlist E3	0.4	1.9	23	55.6	35.8	--
Legacy	LS-0438	Xtend	0.4	2.7	21	55.4	33.3	--
LG Seeds	LGS0111RX	Xtend	0.1	2.3	25	55.4	37.9	45.5
LG Seeds	LGS0355RX	Xtend	0.3	2.1	22	56.2	35.4	44.5
LG Seeds	LGS0400RX	Xtend	0.4	2.5	23	55.8	34.9	--
NDSU	ND17009GT	GT	00.9	3.1	22	57.0	33.5	33.4
Proseed	EL80-093	Enlist E3	00.9	2.1	20	56.0	34.2	41.7
Proseed	XT60-09	Xtend	00.9	2.0	22	56.4	34.7	39.7
Proseed	XT60-40N	Xtend	0.4	2.2	22	55.5	33.3	--
Proseed	XT80-20N	Xtend	0.2	2.0	24	56.2	32.7	43.2
REA	RX0411	Xtend	0.4	2.3	26	55.5	33.7	--
REA	RX0520	Xtend	0.5	2.3	23	56.2	30.9	36.0
Syng NK	S006-R7X	Xtend	00.6	2.8	20	55.7	36.4	--
Syng NK	S01-C4X	Xtend	0.1	2.3	22	56.5	35.0	--
Syng NK	S02-F9X	Xtend	0.2	3.1	21	56.6	38.4	--
Syng NK	S03-S6X	Xtend	0.3	2.6	22	56.6	32.3	--
Syng NK	S04-Q7X	Xtend	0.4	2.0	21	55.4	29.1	--
Syng NK	S05-N5X	Xtend	0.5	2.8	20	55.8	37.1	--
Mean				2.4	21	56.0	34.8	41.7
CV %				14.7	7.3	0.9	10.9	--
LSD 0.05				0.2	2.0	0.7	NS	--
LSD 0.10				0.2	2.0	0.6	4.4	--

Planted: May 27. Harvested: Oct. 5. Previous crop: spring wheat.

¹Herbicide trait: GT= Glyphosate Tolerant, RR = Roundup Ready, LL = Liberty Link.²Iron deficiency chlorosis rating: 1-green, 3-yellow, 5-dead tissue.

Table 34. 2020 Soybean - Enlist, GT, RR and Xtend - Rugby (North Central REC) - Authors, E. Eriksmoen, A. Kraklau and D. Howat.

Company/ Brand	Variety	Herbicide Trait ¹	Maturity Group	IDC Rating ²	Plant Height	Test Weight	Seed Yield	
							2020	2-yr. Avg.
				(1-5)	(inch)	(lb/bu)	------(bu/a)-----	
Integra	20215	RR2	0.2	2.5	29	58.3	36.6	39.3
Integra	40129N	Enlist E3	0.1	2.1	30	58.2	31.8	33.2
Integra	40201N	Enlist E3	0.2	2.9	24	57.6	38.9	--
Integra	50309N	Xtend	0.3	1.8	31	57.7	34.3	37.5
Legacy	LS-0239N RR2X	Xtend	0.2	2.0	30	57.8	35.1	37.8
Legacy	LS-0319 LLGT27	LL,GT	0.3	2.5	26	58.0	32.3	--
Legacy	LS-0320N E3	Enlist E3	0.3	2.4	24	58.1	36.8	--
Legacy	LS-0429 E3	Enlist E3	0.4	1.9	29	58.1	30.9	35.9
Legacy	LS-0438	Xtend	0.4	2.7	28	58.1	31.0	36.0
LG Seeds	LGS00899RX	Xtend	00.8	2.7	30	58.3	37.6	38.1
LG Seeds	LGS0111RX	Xtend	0.1	2.3	31	58.2	36.2	41.0
LG Seeds	LGS0355RX	Xtend	0.3	2.1	33	57.7	36.2	--
LG Seeds	LGS0400RX	Xtend	0.4	2.5	30	58.0	37.3	--
NDSU	ND17009GT	GT	00.9	3.1	29	59.6	29.8	32.5
Proseed	EL80-093	Enlist E3	00.9	2.1	29	58.9	37.1	38.0
Proseed	XT20-07	Xtend	00.7	2.4	31	58.0	38.2	--
Proseed	XT70-09	Xtend	00.9	2.6	29	58.5	35.9	--
REA	RX0411	Xtend	0.4	2.3	37	58.4	32.4	--
Syng NK	S006-R7X	Xtend	00.6	2.8	25	57.9	39.2	--
Syng NK	S01-C4X	Xtend	0.1	2.3	30	59.0	34.9	--
Syng NK	S02-F9X	Xtend	0.2	3.1	26	58.6	36.8	--
Syng NK	S03-S6X	Xtend	0.3	2.6	26	58.5	34.2	--
Syng NK	S04-Q7X	Xtend	0.4	2.0	27	58.5	33.5	--
Syng NK	S05-N5X	Xtend	0.5	2.8	27	58.3	33.2	--
Thunder	SB8001	Xtend	0.1	2.5	27	57.8	36.5	--
Thunder	SB81006	Xtend	00.6	2.7	28	57.7	37.5	--
Thunder	TE71008N	Enlist E3	00.8	2.1	29	58.8	36.0	--
Thunder	TE7101N	Enlist E3	0.1	3.1	24	57.8	35.9	--
Mean				2.4	28	58.2	35.2	36.9
CV %				14.7	7.6	0.6	7.8	--
LSD 0.05				0.2	3.0	0.5	3.9	--
LSD 0.10				0.2	3.0	0.4	3.2	--

Planted: May 26. Harvested: Oct. 6. Previous crop: barley.

¹Herbicide trait: GT= Glyphosate Tolerant, RR = Roundup Ready, LL = Liberty Link.²Iron deficiency chlorosis rating: 1-green, 3-yellow, 5-dead tissue.

Table 35. 2020 Soybean - Enlist, GT, RR and Xtend - Wilton (North Central REC) - Authors, E. Eriksmoen, A. Kraklau and D. Howat.

Company/ Brand	Variety	Herbicide Trait ¹	Maturity Group	IDC Rating ² (1-5)	Plant Height (inch)	Test Weight (lb/bu)	Seed Yield	
							2020	2-yr. Avg. ------(bu/a)-----
Croplan	RX0426	Xtend	0.4	--	25	57.4	27.8	35.6
Croplan	RX0500	Xtend	0.5	--	24	57.2	28.5	36.0
Dyna-Gro	S03XT29	Xtend	0.3	1.9	29	57.6	34.9	41.0
Dyna-Gro	S04EN21	Enlist E3	0.4	2.3	27	57.3	25.7	--
Dyna-Gro	S04XT91	Xtend	0.4	2.4	24	58.0	27.5	--
Golden H.	GH0443X	Xtend	0.4	1.9	27	57.0	32.9	--
Golden H.	GH0543X	Xtend	0.5	2.7	26	57.5	27.3	--
Integra	20215	RR	0.2	2.5	25	57.6	28.5	--
Integra	40129N	Enlist E3	0.1	2.1	28	56.8	23.2	--
Integra	40201N	Enlist E3	0.2	2.9	22	57.8	24.7	--
Integra	50309N	Xtend	0.3	1.8	30	57.5	29.5	39.1
Legacy	LS 061-20	GT	0.6	2.3	28	58.2	29.0	--
Legacy	LS-0429 E3	Enlist E3	0.4	1.9	29	57.2	30.6	39.8
Legacy	LS-0438	Xtend	0.4	2.7	26	57.5	26.5	36.3
Legacy	LS-0638N RR2X	Xtend	0.6	2.9	30	57.8	27.3	--
LG Seeds	LGS0111RX	Xtend	0.1	2.3	31	57.3	26.2	36.7
LG Seeds	LGS0355RX	Xtend	0.3	2.1	28	57.0	24.2	35.4
LG Seeds	LGS0400RX	Xtend	0.4	2.5	30	57.4	26.5	35.8
LG Seeds	LGS0595RX	Xtend	0.5	2.1	26	57.6	24.2	--
NDSU	ND17009GT	GT	00.9	3.1	28	58.2	28.8	36.3
Proseed	EL80-093	Enlist E3	00.9	2.1	31	57.5	31.3	39.3
Proseed	XT60-09	Xtend	00.9	2.0	31	57.6	27.8	36.5
Proseed	XT60-40N	Xtend	0.4	2.2	27	56.8	24.5	--
Proseed	XT80-20N	Xtend	0.2	2.0	29	57.5	22.2	31.8
REA	RX0411	Xtend	0.4	2.3	33	56.8	25.7	--
REA	RX0520	Xtend	0.5	2.3	27	57.7	23.9	34.0
Syng NK	S006-R7X	Xtend	00.6	2.8	27	55.9	32.6	--
Syng NK	S01-C4X	Xtend	0.1	2.3	30	58.1	25.7	--
Syng NK	S02-F9X	Xtend	0.2	3.1	28	57.9	30.6	--
Syng NK	S03-S6X	Xtend	0.3	2.6	30	58.0	24.2	--
Syng NK	S04-Q7X	Xtend	0.4	2.0	29	58.6	25.2	--
Syng NK	S05-N5X	Xtend	0.5	2.8	26	57.6	27.8	--
Mean				2.4	28	57.5	27.4	36.7
CV %				14.7	8.3	0.8	11.8	--
LSD 0.05				0.2	3.0	0.6	4.5	--
LSD 0.10				0.2	2.0	0.5	3.8	--

Planted: May 27. Harvested: Oct. 5. Previous crop: durum.

¹Herbicide trait: GT= Glyphosate Tolerant, RR = Roundup Ready.²Iron deficiency chlorosis rating: 1-green, 3-yellow, 5-dead tissue.

Table 36. 2020 Soybean - GT, RR and Xtend - Hettinger (REC) - Authors, J. Rickertsen and M. Wells.

Company/		Maturity		Plant	Test	Seed	Seed	Seed Yield	
Brand	Variety	Group	Maturity ¹	Height	Weight	Oil	Protein	2020	2-yr. Avg.
			(date)	(inch)	(lb/bu)	(%)	(%)	------(bu/a)-----	
Integra	40300N	0.3	9/11	26	55.9	15.6	35.4	27.1	--
Integra	50309N	0.3	9/8	29	55.2	15.7	35.8	25.4	34.2
NDSU	ND17009GT	00.9	9/4	29	57.3	17.0	36.6	23.6	32.1
Proseed	XT60-40	0.4	9/12	27	54.6	16.7	36.2	21.9	31.0
Proseed	XT80-20N	0.2	9/12	30	55.2	15.5	36.2	22.2	--
REA	RX0411	0.4	9/12	30	54.9	16.7	34.4	23.5	--
REA	RX0520	0.5	9/13	28	56.8	15.8	36.4	18.2	28.4
REA	RX0721	0.7	9/13	28	55.8	15.6	36.5	22.5	--
Mean			9/8	28	55.7	16.1	35.9	23.1	31.4
CV %			0.8	7.6	1.6	1.8	1.1	9.7	--
LSD 0.05			1.3	2.9	0.8	0.4	0.5	2.9	--
LSD 0.10			1.1	2.4	0.7	0.4	0.4	2.4	--

Planted: May 19. Harvested: Sept. 16. Previous crop: spring wheat.

¹Maturity is date of 95% brown or tan pods.**Table 37. 2020 Soybean - Conventional - Hettinger (REC) - Authors, J. Rickertsen and M. Wells.**

Company/		Maturity		Plant	Test	Seed	Seed	Seed Yield	
Brand	Variety	Group	Maturity ¹	Height	Weight	Oil	Protein	2020	2-yr. Avg.
			(date)	(inch)	(lb/bu)	(%)	(%)	------(bu/a)-----	
Conventional									
NDSU	ND Benson	0.4	9/10	26	53.0	16.2	36.4	19.0	28.6
NDSU	ND Dickey	0.7	9/13	27	52.6	15.0	36.5	19.0	--
RR Check #1		0.8	9/15	31	52.2	15.7	36.5	21.1	35.2
RR Check #2		0.8	9/13	29	53.1	15.6	36.5	19.6	--
LibertyLink									
Proseed	BX20-65	0.8	9/14	27	51.7	16.5	36.1	13.4	--
Mean			9/13	28	52.5	15.8	36.4	18.4	31.9
CV %			0.1	10.8	1.6	2.2	1.1	13.3	--
LSD 0.05			1.1	4.6	2.1	0.5	0.6	3.0	--
LSD 0.10			0.9	3.8	1.6	0.4	0.5	2.3	--

Planted: May 19. Harvested: Sept. 16. Previous crop: spring wheat.

¹Maturity is date of 95% brown or tan pods.**Table 38. 2020 Soybean - GT, RR and Xtend - Mandan (Hettinger REC) - Authors, J. Rickertsen and M. Wells.**

Company/		Maturity		Plant	Test	Seed	Seed	Seed Yield	
Brand	Variety	Group		Height	Weight	Oil	Protein	2020	2-yr. Avg.
				(inch)	(lb/bu)	(%)	(%)	------(bu/a)-----	
Integra	40300N	0.3		32	57.2	17.7	30.6	40.4	--
Integra	50309N	0.3		33	57.2	17.7	30.6	37.6	38.7
NDSU	ND17009GT	00.9		38	59.3	17.0	36.1	38.6	--
Proseed	XT60-40	0.4		29	56.8	18.5	31.1	32.0	35.9
Proseed	XT80-20N	0.2		35	57.2	17.7	30.7	35.0	--
REA	RX0411	0.4		38	56.9	18.6	29.5	34.9	--
REA	RX0520	0.5		36	57.4	17.1	32.7	33.6	38.1
REA	RX0721	0.7		34	57.1	17.6	32.3	36.4	--
Mean				34	57.4	17.7	31.7	36.1	37.6
CV %				7.2	0.6	2.2	1.1	6.6	--
LSD 0.05				3.4	0.5	0.5	0.6	3.2	--
LSD 0.10				2.9	0.4	0.4	0.5	2.7	--

Planted: May 20. Harvested: Sept. 24. Previous crop: spring wheat.

¹Maturity is date of 95% brown or tan pods.

Table 39. 2020 Soybean - Conventional - Mandan (Hettinger REC) - Authors, J. Rickertsen and M. Wells.

Company/ Brand	Variety	Maturity Group	Plant Height	Test Weight	Seed Oil	Seed Protein	Seed Yield	
			(inch)	(lb/bu)	(%)	(%)	2020 (bu/a)	
Conventional								
NDSU	ND Benson	0.4	32	57.5	16.9	35.0	31.9	
NDSU	ND Dickey	0.7	32	57.5	16.2	34.7	36.5	
RR Check #1		0.8	32	56.1	16.2	35.2	31.7	
RR Check #2		0.8	31	56.7	16.5	34.4	30.2	
Liberty Link								
Proseed	BX20-65	0.8	28	57.5	16.5	34.6	26.7	
Mean			31	57.1	16.5	34.8	31.4	
CV %			5.2	0.6	2.1	1.3	9.8	
LSD 0.05			2.5	0.6	0.5	0.7	4.5	
LSD 0.10			2.0	0.5	0.4	0.6	3.7	

Planted: May 20. Harvested: Sept. 24. Previous crop: spring wheat.

Table 40. 2020 Soybean - Dryland, Enlist, RR and Xtend - Williston - Authors, J. Bergman, G. Pradhan, M. Miller and C. Wahlstrom.

Company/ Brand	Variety	Maturity Group	Plant Height	Test Weight	Seed Oil	Seed Protein	Seed Yield	
			(inch)	(lb/bu)	(%)	(%)	2020	2-yr. Avg.
							----- (bu/a) -----	
Dyna-Gro	S009XT68	00.9	16	56.8	22.4	37.5	9.4	24.6
Dyna-Gro	S02EN71	0.2	12	56.1	22.8	36.1	6.6	--
Dyna-Gro	S03XT29	0.3	16	56.5	22.5	35.7	9.2	26.3
Integra	20215	0.2	15	56.8	22.4	38.5	9.9	--
Integra	40201N	0.2	13	55.4	23.0	35.7	6.7	--
Integra	50309N	0.3	15	56.5	22.1	36.7	9.1	26.4
LG Seeds	LGS00899RX	00.8	13	55.9	23.4	35.0	8.1	22.5
LG Seeds	LGS0111RX	0.1	13	56.7	23.0	37.3	11.5	26.8
NDSU	ND14-6120	00.8	13	56.7	22.3	35.6	9.9	24.8
NDSU	ND15-22873	0.7	12	56.9	22.1	36.8	7.4	--
NDSU	ND17009GT	00.9	17	57.3	22.2	39.4	9.1	23.8
NDSU	ND18008GT	00.8	14	56.1	22.2	37.7	7.8	22.6
Proseed	50-10	0.1	15	57.1	22.9	38.4	8.9	--
Proseed	EL80-093	00.9	13	55.9	22.5	37.7	7.8	23.1
Proseed	XT 20-07	00.7	13	56.0	23.2	34.4	8.9	--
Proseed	XT 70-09	00.9	14	56.4	23.2	35.3	9.6	--
REA	RX0411	0.4	16	55.1	22.8	39.1	7.1	--
REA	RX0520	0.5	14	56.3	22.1	39.1	6.5	22.8
Mean			14	56.4	22.6	37.0	8.5	24.4
CV %			15	1.2	1.9	2.0	19.1	--
LSD 0.05			3	1.0	0.6	1.1	2.3	--
LSD 0.10			2	0.8	0.5	0.9	1.9	--

Planted: May 15. Harvested: Sept. 23. Previous crop: wheat.

Table 41. 2020 Soybean - Dryland, Enlist, RR and Xtend - Williams County (Williston REC).**Authors, J. Bergman, G. Pradhan, M. Miller and C. Wahlstrom.**

Company/ Brand	Variety	Maturity Group	Test Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed Yield 2020 (bu/a)
Dyna-Gro	S009XT68	00.9	58.5	20.2	36.8	30.6
Dyna-Gro	S02EN71	0.2	57.4	19.9	36.3	23.5
Dyna-Gro	S03XT29	0.3	57.2	20.4	38.5	29.3
Integra	20215	0.2	57.5	20.2	37.3	33.1
Integra	40201N	0.2	57.4	19.7	36.7	24.4
Integra	50309N	0.3	56.8	20.4	37.4	32.4
LG Seeds	LGS00899RX	00.8	57.6	22.6	35.5	29.3
LG Seeds	LGS0111RX	0.1	57.4	21.3	36.9	26.0
NDSU	ND14-6120	00.8	58.1	21.6	35.5	25.6
NDSU	ND15-22873	0.7	57.8	19.7	36.1	21.9
NDSU	ND17009GT	00.9	58.7	21.8	39.6	32.0
NDSU	ND18008GT	00.8	58.1	21.3	39.2	26.0
Proseed	50-10	0.1	57.9	22.4	37.5	27.9
Proseed	EL80-093	00.9	57.9	21.3	34.6	30.7
Proseed	XT20-07	00.7	56.5	22.2	34.7	35.2
Proseed	XT70-09	00.9	57.6	22.2	35.3	31.7
REA	RX0411	0.4	56.8	19.8	34.5	24.5
REA	RX0520	0.5	57.2	19.6	37.8	22.8
Mean			57.6	20.9	36.7	28.2
CV %			0.6	2.3	3.2	13.5
LSD 0.05			0.5	0.8	1.9	6.3
LSD 0.10			0.4	0.7	1.6	5.2

Planted: May 21. Harvested: Oct. 9. Previous crop: wheat.

Table 42. 2020 Soybean - Dryland, Enlist, RR and Xtend - Divide County (Williston REC).**Authors, J. Bergman, G. Pradhan, M. Miller and C. Wahlstrom.**

Company/ Brand	Variety	Maturity Group	Test Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed Yield 2020 (bu/a)
Dyna-Gro	S009XT68	00.9	56.9	21.9	36.3	27.5
Dyna-Gro	S02EN71	0.2	56.3	22.5	36.3	13.2
Dyna-Gro	S03XT29	0.3	56.6	22.7	35.0	18.7
Integra	20215	0.2	56.3	22.0	38.3	22.7
Integra	40201N	0.2	55.6	22.1	37.4	14.4
Integra	50309N	0.3	57.0	21.9	37.5	19.1
LG Seeds	LGS00899RX	00.8	57.5	23.5	34.2	25.0
LG Seeds	LGS0111RX	0.1	57.0	23.0	36.6	19.1
NDSU	ND14-6120	00.8	57.9	22.8	35.3	18.5
NDSU	ND15-22873	0.7	55.9	22.0	37.3	14.0
NDSU	ND17009GT	00.9	58.6	22.5	39.3	22.6
NDSU	ND18008GT	00.8	57.3	22.7	37.4	23.3
Proseed	50-10	0.1	57.3	23.0	38.2	24.8
Proseed	EL80-093	00.9	57.1	22.4	36.3	22.5
Proseed	XT20-07	00.7	56.9	23.2	34.2	24.7
Proseed	XT70-09	00.9	57.5	23.3	34.8	24.7
REA	RX0411	0.4	56.8	23.0	36.0	18.1
REA	RX0520	0.5	56.1	22.0	39.3	10.9
Mean			56.9	22.6	36.6	20.2
CV %			1.1	1.6	2.5	11.6
LSD 0.05			1.1	0.6	1.5	3.9
LSD 0.10			0.9	0.5	1.3	3.2

Planted: May 20. Harvested: Oct. 9. Previous crop: wheat.

Table 43. 2020 Soybean - Enlist, RR and Xtend - Ransom and Sargent Counties - Authors, B. Zimprich, M. Seykora, H. Kandel and C. Deplazes.

Company/ Brand	Variety	Mt. Group	Ransom				Sargent				Combined			
			Test Weight	-----Seed----- Protein	-----Seed----- Oil	-----Seed----- Yield	Test Weight	-----Seed----- Protein	-----Seed----- Oil	-----Seed----- Yield	Test Weight	-----Seed----- Protein	-----Seed----- Oil	-----Seed----- Yield
			(lb/bu)	(%)	(%)	(bu/a)	(lb/bu)	(%)	(%)	(bu/a)	(lb/bu)	(%)	(%)	(bu/a)
Hefty	Z1001E	1.0	57.7	34.4	18.1	57.6	58.2	35.5	17.0	56.8	58.0	34.9	17.6	57.2
Hefty	Z1101E	1.1	57.6	31.9	19.4	69.0	58.3	32.9	18.8	68.1	57.9	32.4	19.1	68.5
Hefty	Z1301G	1.3	56.8	33.0	18.3	63.6	56.9	33.4	18.1	56.2	56.8	33.2	18.2	59.8
Integra	40999N	0.9	56.8	33.7	18.6	58.8	56.9	34.1	18.4	61.5	56.9	33.9	18.5	60.2
Integra	41041N	1.0	57.9	34.6	18.0	59.5	58.1	35.6	17.2	58.9	58.0	35.1	17.6	59.2
Integra	41220N	1.2	57.2	33.9	17.9	63.4	57.8	34.6	17.0	62.9	57.5	34.2	17.4	63.1
Legacy	LS 102-20	1.0	58.3	34.9	17.8	55.5	58.3	35.3	17.4	57.4	58.3	35.1	17.6	56.5
Legacy	LS-1320N E3	1.3	57.1	34.6	17.7	64.3	57.8	34.3	17.2	67.9	57.5	34.5	17.5	66.1
Legacy	LS-0830N RR2X	0.8	57.0	34.0	17.9	64.0	57.1	34.4	17.9	65.2	57.1	34.2	17.9	64.6
Legacy	LS-0930 RR2X	0.9	56.4	32.5	18.3	67.1	56.8	32.3	18.3	60.7	56.6	32.4	18.3	63.9
Peterson	2109E	0.9	56.6	33.8	18.5	59.7	56.9	33.6	18.7	57.0	56.8	33.7	18.6	58.3
Peterson	1911E	1.1	57.5	34.7	17.8	53.9	57.8	35.0	17.3	63.4	57.7	34.8	17.6	58.7
Peterson	20X12N	1.2	56.9	33.5	18.8	59.3	57.4	34.1	18.5	58.5	57.1	33.8	18.6	58.9
Proseed	EL 21-03	1.0	57.5	35.1	17.9	63.3	58.1	35.1	17.4	56.0	57.8	35.1	17.6	59.6
Proseed	EL 21-23	1.2	57.8	31.9	19.3	65.1	58.0	32.9	18.6	66.4	57.9	32.4	18.9	65.7
Proseed	EL 91-33	1.3	57.1	33.8	17.7	60.2	57.9	34.4	17.4	63.6	57.5	34.1	17.6	61.9
REA	RX0411	0.4	56.7	33.4	18.5	61.1	57.0	33.3	19.1	54.5	56.9	33.4	18.8	57.8
REA	RX0721	0.7	56.5	34.3	18.2	70.2	56.5	34.3	18.3	68.7	56.5	34.3	18.2	69.5
REA	RX1030	1.0	57.0	34.9	18.5	68.0	57.1	35.0	18.3	65.1	57.1	35.0	18.4	66.6
REA	RX1361	1.3	56.5	34.1	18.2	64.9	57.0	34.4	17.8	65.0	56.8	34.3	18.0	64.9
REA	RX1529	1.5	56.5	34.2	17.9	67.8	56.7	34.1	17.9	64.7	56.6	34.2	17.9	66.2
Mean			57.1	33.9	18.2	62.7	57.5	34.2	17.9	61.8	57.3	34.0	18.1	62.2
C.V. %			0.4	2.1	1.7	7.1	0.5	1.2	1.6	6.6	0.5	1.7	1.9	7.2
LSD 0.05			0.4	1.2	0.5	7.3	0.5	0.7	0.5	6.7	0.3	0.7	0.4	5.1
LSD 0.10			0.3	1.0	0.4	6.1	0.4	0.6	0.4	5.6	0.3	0.5	0.3	4.3

Planted: Ransom May 15, Sargent May 21. Harvested: Oct 7. Previous crop: corn.

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