

A843-19

North Dakota Soybean

Variety Trial Results for 2019 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 LLGT27 = 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 should be used in combination with resistance. Crop rotation may help reduce inoculum of Phytophthora but will not eradicate it from soil.

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 2019, 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 - can be found in North Dakota. These sources are effective in the vast majority of the soybean fields in the state. However, the level of resistance in each variety is variable, 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.

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 between 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.

Acknowledgments

We thank all producer cooperators for contributing their time, labor, land and other material to the 2019 soybean yield trial program in the central and southern Red River Valley and other off-station sites.

Research specialists and technicians helped with the field work and data compilation. Several secretaries assisted with this document by typing information. A special thank you goes to Lisa Johnson, Extension Plant Sciences, for assisting in the compilation of this publication.

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
Allegiant	Allegiant	www.chsinc.com/allegiant
Asgrow	Asgrow	www.asgrowanddekalb.com
BASF	BASF	agriculture.basf.com/us/en/Crop-Protection/Credenz.html
BioGene	BioGene	www.biogeneseeds.com
Brushvale Seed Inc.	Brushvale	www.brushvalseed.com
Caldbeck Consulting	Caldbeck	-----
Channel	Channel	www.channel.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
Genesis	Genesis	legendseeds.net/products/soybeans
Golden Harvest	Golden H.	www.goldenharvestseeds.com/soybeans
Hefty Seed Co.	Hefty	www.heftyseed.com
Integra Fortified Seed	Integra	www.integraseed.com
Latham	Latham	www.lathamseeds.com
Legacy Seeds Inc.	Legacy	www.legacyseeds.com
Legend Seeds Inc.	Legend	www.legendseeds.net
LG Seeds	LG Seeds	www.lgseeds.com
Mustang Seeds	Mustang	www.mustangseeds.com/products/soybeans/
N.D. Foundation Seed	NDSU	www.ag.ndsu.edu/fss/
NorthStar Genetics	NorthStar	www.NorthStargenetics.com
Peterson Farms Seed	Peterson	www.petersonfarmsseed.com
Proseed Inc.	Proseed	www.proseed.net
P3 Genetics	P3 Genetics	petersonfarmsseed.com/soybeans/p3/
REA hybrids	REA	www.rea-hybrids.com
Richland IFC	Richland	www.richlandifc.com
Sevita International	Sevita	sevitagenetics.com/about-us/
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. 2019 NDSU Enlist, 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
Channel	0218R2X	1.3	Hefty	H03X8	2.0
Pioneer	01A84X	1.3	P3 Genetics	2003E	2.0
Mustang	03X329	1.3	Peterson	20X05	2.0
Integra	40129E3	1.4	Dahlman	1004E3N	2.0
Pioneer	03A17X	1.4	Dahlman	6903XN	2.0
Dairyland	DSR-0577E	1.4	Mustang	05E449	2.0
NorthStar	90094E3	1.4	NorthStar	60092XR2	2.0
Asgrow	AG 0937	1.5	Allegiant	009X08	2.1
Integra	50309NR2X	1.5	Dairyland	DSR-0988/R2Y	2.1
Hefty	H04X8	1.6	NorthStar	60555NXR2	2.1
Proseed	XT80-20N	1.6	P3 Genetics	1906E	2.1
Legend	009E955N	1.6	Thunder	TE7003	2.1
Peterson	19EN008	1.6	Channel	0320R2X	2.1
REA	RX0228	1.6	Dahlman	6703XN	2.1
Legend	005E953N	1.7	Hefty	H06X8	2.1
Dairyland	DSR-0200/R2Y	1.7	Latham	L0595E3	2.1
Dyna-Gro	S03XT29	1.7	Legend	10E943N	2.1
Legacy	LS-0239NRR2X	1.7	Thunder	TE7906N	2.1
Legacy	LS-00829E3	1.7	Dyna-Gro	S005XT38	2.1
Legacy	LS-0429E3	1.8	LG Seeds	LGS00663RX	2.1
BioGene	BG8000RR2X	1.8	Legacy	LS-1220NE3	2.1
Hefty	H02X9	1.8	Legend	LS09X960N	2.1
NorthStar	60264NXR2	1.8	REA	RX0520	2.1
NorthStar	90084NE3	1.8	Allegiant	008X30N	2.2
Allegiant	007X32N	1.8	Dyna-Gro	S05EN70	2.2
LG Seeds	LGS0355RX	1.8	Dyna-Gro	S09XT50	2.2
Peterson	19X03	1.8	Integra	20215R2Y	2.2
Thunder	ASTRO R2Y	1.8	Syng NK	NK S12-R3	2.2
Thunder	SB8903N	1.8	Proseed	XT60-09	2.2
REA	RX00749	1.8	Thunder	SB88007N	2.2
Hefty	H02E0	1.9	Legacy	LS-0337NRR2X	2.2
REA	RX0330	1.9	Mustang	02E119	2.2
Golden H.	GH0391	1.9	Mustang	12X928	2.2
LG Seeds	LGS1018RX	1.9	NorthStar	90544NE3	2.2
Syng NK	NK S03-E3	1.9	REA	RX0719	2.2
Dahlman	6004XN	1.9	Stine	07EA36	2.2
Integra	40089E3	1.9	Thunder	36008 R2YN	2.2
Legend	009X852N	1.9	Thunder	TE7902	2.2
Legend	LS03X852N	1.9	Dyna-Gro	S007XT27	2.2
Syng NK	NK S03-G9	1.9	Hefty	H01E9	2.2
Asgrow	AG 0835	2.0	Integra	40999N	2.2
Allegiant	02X21N	2.0	Integra	50510N	2.2
Golden H.	GH00866	2.0	NorthStar	60065NXR2	2.2
Trial Mean		2.4	Trial Mean		2.4
LSD 0.05		0.4	LSD 0.05		0.4
LSD 0.10		0.3	LSD 0.10		0.3
CV		22.6	CV		22.6

Table 3. 2019 NDSU Enlist, Roundup Ready and Xtend Soybean Iron-deficiency Chlorosis Trial - Author, T. Helms (Page 2 of 3).

Company	Variety	2-site Mean IDC ¹	Company	Variety	2-site Mean IDC ¹
NorthStar	80854LG+	2.2	Dyna-Gro	S04XT77	2.4
Proseed	EL80-093	2.2	LG Seeds	LGS1118RX	2.4
Thunder	SB87009	2.2	Legend	LS08E965E	2.4
Allegiant	01E23	2.3	Peterson	18X08	2.4
Integra	20775	2.3	REA	RX0929	2.4
Integra	40209E3	2.3	REA	RX1529	2.4
Mustang	06X628	2.3	Dahlman	1011E3N	2.4
Peterson	18X008	2.3	Integra	50629N	2.4
Proseed	EL91-33	2.3	LG Seeds	S0735RX	2.4
BASF	CZ729	2.3	Latham	L0883R2X	2.4
BioGene	BG8008RR2X	2.3	Legend	LS07E965N	2.4
Dahlman	1007E3N	2.3	Syng NK	NK S09-D4X	2.4
Dyna-Gro	S13XT89	2.3	P3 Genetics	2002E	2.4
Golden H.	GH0936X	2.3	REA	RX00810	2.4
LG Seeds	LGS00899RX	2.3	BASF	CZ1139	2.4
Legend	007X956N	2.3	BASF	CZ419	2.4
Legend	11LGT950	2.3	Hefty	H008X8	2.4
Legend	LS02E963	2.3	Latham	L0995E3	2.4
Legend	LS05X050N	2.3	Legend	LS06X950N	2.4
Syng NK	NK S02-E3	2.3	NorthStar	90334E3	2.4
Syng NK	NK S03-S6X	2.3	Proseed	EL81-13	2.4
Proseed	EL90-53	2.3	Proseed	XT60-40	2.4
Asgrow	AG 05X9N	2.3	Proseed	XT90-90	2.4
BioGene	BG8007RR2X	2.3	Thunder	SB8009N	2.4
Channel	1920R2X	2.3	Thunder	TE7910N	2.4
Dyna-Gro	S009XT68	2.3	Asgrow	AG 1135	2.5
Legacy	LS-0830NRR2x	2.3	Dyna-Gro	S009XT49	2.5
Legend	LS10E943N	2.3	Latham	L0438R2X	2.5
P3 Genetics	1910E	2.3	Legacy	LS-0829E3	2.5
Proseed	XT60-90	2.3	Legend	04E956	2.5
Proseed	XT80-60	2.3	Syng NK	NK S007-Y4	2.5
Dairyland	DSR-0929L	2.3	NorthStar	NS 90214E3	2.5
Dahlman	1003E3N	2.3	Channel	0720R2X	2.5
Latham	L0553R2X	2.3	Dahlman	1001E3	2.5
Latham	L1039R2X	2.3	Integra	20300R2Y	2.5
Legacy	LS-00639NRR2X	2.3	Integra	50001R2X	2.5
Legend	02E963	2.3	LG Seeds	LGS0400RX	2.5
Legend	LS04E956	2.3	Legacy	LS-1138NRR2X	2.5
Pioneer	006A37X	2.3	Legend	07E965N	2.5
Pioneer	00A49X	2.3	Mustang	11E929	2.5
Stine	01EA63	2.3	P3 Genetics	1911E	2.5
Asgrow	AG 05X9	2.4	Golden H.	GH0308X	2.5
Asgrow	AG 0832	2.4	Legend	09X960N	2.5
Trial Mean		2.4	Trial Mean		2.4
LSD 0.05		0.4	LSD 0.05		0.4
LSD 0.10		0.3	LSD 0.10		0.3
CV		22.6	CV		22.6

Table 3. 2019 NDSU Enlist, 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
Proseed	XT90-06	2.5	Golden H.	GH1317X	2.8
Channel	1020R2X	2.6	Hefty	H01X0	2.8
LG Seeds	LGS1575RX	2.6	LG Seeds	C1337RX	2.8
U of M	MN06R-614008	2.6	NDSU	ND18008GT	2.8
Proseed	EL80-33	2.6	Syng NK	NK S07-Q4X	2.8
Channel	1520R2X	2.6	BASF	CZ309	2.8
Dahlman	6811XN	2.6	Dairyland	DSR-C999/R2Y	2.8
Golden H.	GH0145X	2.6	Dahlman	60009X	2.8
Hefty	H03E9	2.6	Dairyland	DSR-0717E	2.9
LG Seeds	LGS0111RX	2.6	Legend	12E925N	2.9
Legacy	LS-00930RR2X	2.6	Syng NK	NK S10-H7X	2.9
P3 Genetics	2005E	2.6	NorthStar	NS 90764NE3	2.9
Proseed	30-20	2.6	Peterson	16R01	2.9
REA	RX1030	2.6	P3 Genetics	2013B	2.9
Stine	09EA02	2.6	Proseed	BX80-35	2.9
Dyna-Gro	S06XT59	2.6	Thunder	SB8001	2.9
Dyna-Gro	S11XT78	2.6	Syng NK	NK S006-R7X	2.9
Integra	50850N	2.6	Allegiant	04X08N	2.9
Integra	51229N	2.6	Dyna-Gro	S11EN40	2.9
Legacy	LS-0438RR2X	2.6	P3 Genetics	1907E	2.9
Legacy	LS-0629NE3	2.6	Proseed	50-10	2.9
Legacy	LS-0638NRR2X	2.6	Proseed	EL91-23	2.9
Legend	06X950N	2.6	BASF	CZ1280	3.0
P3 Genetics	2013E	2.6	Golden H.	GH0749X	3.0
Proseed	EL80-93	2.6	Integra	40829	3.0
Dyna-Gro	S14EN90	2.7	Stine	13EA12	3.0
Integra	20097R2Y	2.7	Dahlman	1014E3N	3.0
Latham	L0982R2	2.7	Thunder	SB8807N	3.0
Mustang	10929	2.7	Legacy	LS-0738NRR2X	3.0
Syng NK	NK S01-C4X	2.7	Legend	08E965N	3.0
NorthStar	NS 60823NXR2	2.7	Syng NK	NK S02-F9X	3.1
Dyna-Gro	S07XT28	2.7	P3 Genetics	1905B	3.1
Thunder	TE7001	2.7	Thunder	SB8906N	3.1
Dairyland	DSR-0847E	2.7	LG Seeds	C1000RX	3.1
Syng NK	NKS06-K4X	2.7	NDSU	ND17009GT	3.1
REA	RX1439	2.8	NorthStar	NS 80405LG+	3.1
BASF	CZ590	2.8	NDSU	ND15-22873(GT)	3.2
Golden H.	GH0543X	2.8	Syng NK	NKS008-N2	3.2
Mustang	12E220	2.8	Peterson	20X01	3.2
Syng NK	NK S05-N5X	2.8	Dairyland	DSR-1120/R2Y	3.3
Peterson	20X09	2.8			
Trial Mean		2.4	Trial Mean		2.4
LSD 0.05		0.4	LSD 0.05		0.4
LSD 0.10		0.3	LSD 0.10		0.3
CV		22.6	CV		22.6

¹IDC score was 1-5, with 1-green, 3-yellow, 5-dead tissue. See illustration below Table 4.

Table 4. 2019 NDSU Conventional and Liberty Link Soybean Iron-deficiency Chlorosis Trial - Author, T. Helms.

Company	Variety	2-site Mean IDC ¹	Company	Variety	2-site Mean IDC ¹
Check variety	A11(early)	1.1	NDSU	ND1907S	2.2
NDSU	ND Rolette	1.3	NDSU	Sheyenne	2.2
Richland	MK0508	1.6	Caldbeck	ATSOY062234	2.3
Caldbeck	ATSOY082500	1.8	Latham	L1238L	2.3
Caldbeck	ATSOY0825X2	1.8	Richland	MK42	2.3
Latham	L0643L	1.8	Richland	MK808CN	2.3
Latham	L0842L	1.8	Richland	MK9101	2.3
Richland	MK0249	1.8	Sevita	Panorama	2.4
Brushvale	BS1345	1.9	Caldbeck	ATSOY121302	2.5
Richland	MK0603	1.9	Sevita	Astor	2.5
Richland	MK1016	1.9	Richland	MK146	2.5
NDSU	ND Benson	1.9	Richland	MK41	2.5
NDSU	ND Stutsman	1.9	Brushvale	BS1512	2.6
Brushvale	BS1282	2.0	Check variety	Sargent	2.6
Dairyland	DSR-0929L	2.0	Caldbeck	ATSOY080668	2.9
Caldbeck	ATSOY110978	2.1	Sevita	Emperor	2.9
Brushvale	BS1146	2.1	Sevita	Genesis	2.9
Latham	1238L	2.1	Sevita	Skyline	2.9
NDSU	ND Henson	2.1	Sevita	Meteor	3.5
Mean		2.1	Mean		2.1
LSD 0.05		0.3	LSD 0.05		0.3
LSD 0.10		0.3	LSD 0.10		0.3
CV		20.0	CV		20.0

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. 2019 NDSU Soybean Iron-deficiency Chlorosis Trial¹ - Erie, N.D. - Author, T. Helms.

Company	Variety	Maturity ² (date)	IDC Score ³ (1-5)	2019 Yield (bu/a)
Legend	LS009E955N	9/11	1.3	26.8
Channel	0218R2X	9/13	1.5	27.7
Peterson	19X03	9/15	2.0	27.1
Dahlman	6903XN	9/16	2.1	30.8
Channel	0320R2X	9/18	1.9	34.6
Legend	LS02E963	9/18	2.6	25.1
REA	RX0330	9/18	1.6	27.9
BASF	CZ309	9/30	3.1	16.1
BASF	CZ419	9/30	3.4	8.6
BASF	CZ590	9/30	3.3	11.2
Channel	0720R2X	9/30	3.5	8.2
Channel	1020R2X	9/30	3.3	10.5
Dahlman	1011E3N	9/30	3.4	9.5
Dahlman	1014E3N	9/30	3.6	8.2
Dahlman	6004XN	9/30	3.1	13.9
Dyna-Gro	S06XT59	9/30	3.3	12.6
Dyna-Gro	S11EN40	9/30	3.5	9.3
Dyna-Gro	S11XT78	9/30	3.5	9.5
Golden H.	GH0308X	9/30	3.5	6.2
Golden H.	GH0543X	9/30	3.8	7.0
Golden H.	GH0936X	9/30	3.4	14.7
Golden H.	GH1317X	9/30	4.1	3.5
Integra	40829	9/30	3.5	5.4
Integra	4099N	9/30	3.0	10.3
Integra	50510N	9/30	2.9	17.8
Integra	50850N	9/30	3.8	4.4
LG Seeds	LGS0735RX	9/30	3.4	10.3
LG Seeds	LGS1018RX	9/30	3.0	19.2
Genesis	G0641E	9/30	3.0	18.9
Legend	LS08E965N	9/30	3.4	16.6
Syng NK	S01-C4X	9/30	3.0	14.1
Syng NK	S03-S6X	9/30	3.4	7.5
Syng NK	S07-Q4X	9/30	4.0	3.9
Peterson	19EN04	9/30	1.8	28.9
P3 Genetics	2005E	9/30	3.3	12.2
Peterson	20EN12	9/30	3.4	9.0
REA	REA RX0520	9/30	2.9	18.4
REA	REA RX0929	9/30	3.3	9.3
REA	REA RX1030	9/30	3.1	13.2
Stine	07EA36	9/30	3.5	7.7
Mean		9/29	3.1	14.4
CV %		2.9	12.7	38.6
LSD 0.05		2.0	0.5	7.7
LSD 0.10		2.0	0.4	6.5

Planted: June 4.

¹Trial was planted on purpose on a field with severe IDC expression. Differences in yield are related to the level of tolerance to IDC and genetic potential of each variety.

²Maturity is date of 95% brown or tan pods.

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

Table 6. 2019 NDSU Credenz, Enlist, RR and Xtend Soybean Cyst Nematode Yield Trial - Author, T. Helms.

Company	Variety	Maturity ¹ (date)	Colfax		Galesburg		2-site Avg.
			------(bu/a)-----				
BASF	CZ419	10/5	48.5	42.2	45.3		
BASF	CZ729	10/7	50.4	49.5	49.9		
BASF	CZ1139	10/9	40.3	36.8	38.5		
Dahlman	1003E3N	9/26	28.9	33.2	31.1		
Dahlman	1004E3N	9/26	47.9	37.9	42.9		
Dahlman	1007E3N	9/29	43.3	28.9	36.1		
Dahlman	6004XN	10/1	44.1	37.8	40.9		
Dyna-Gro	S06XT59	9/28	58.0	47.9	53.0		
Dyna-Gro	S09XT50	10/4	57.9	43.3	50.6		
Dyna-Gro	S11XT78	10/4	56.5	51.8	54.1		
Genesis	G0641E	9/28	43.8	38.8	41.3		
Genesis	G1041E	10/6	50.5	41.0	45.7		
Golden H.	GH0391	9/24	49.4	39.1	44.4		
Golden H.	GH0749X	9/30	56.2	45.6	50.9		
Golden H.	GH0936X	9/30	50.9	46.6	48.7		
Golden H.	GH1317X	10/7	53.2	44.9	49.1		
Integra	50510	10/2	51.0	27.5	39.2		
Integra	50629N	10/2	52.4	43.6	48.0		
Integra	50850N	10/3	57.9	47.4	52.7		
Legend	LS08E965E	9/30	54.8	47.0	50.9		
Legend	LS09X960N	9/29	49.7	35.3	42.5		
Mustang	10929	10/3	53.9	42.2	48.1		
P3 Genetics	1906E	9/28	45.6	30.4	38.0		
P3 Genetics	1911E	10/9	55.5	43.0	49.2		
P3 Genetics	2005E	9/27	47.1	38.4	42.7		
Peterson	18X08	9/21	38.2	16.4	27.3		
REA	RX0330	9/29	37.3	33.2	35.2		
REA	RX0520	10/2	47.4	34.1	40.7		
REA	RX0929	9/30	52.4	42.4	47.4		
REA	RX1030	10/7	48.8	46.2	47.5		
Stine	09EA02	10/7	48.8	39.1	44.0		
Syng NK	S07-Q4X	10/1	56.5	43.2	49.8		
Syng NK	S09-D4X	9/30	50.4	43.4	46.9		
Syng NK	S10-H7X	10/2	61.6	46.7	54.1		
Syng NK	S12-R3	10/7	60.4	45.4	52.9		
Check variety	Susceptible	9/30	43.4	47.9	45.6		
Mean		10/1	50.1	40.5	45.2		
CV %		4.6	12.5	17.5	14.8		
LSD 0.05		4.0	8.6	9.6	6.5		
LSD 0.10		3.0	7.2	8.1	5.4		

Footnotes listed under Table 7.

Table 7. 2019 NDSU Combined SCN-infested Soil Soybean non-GMO Variety Trial - Author, T. Helms.

Company	Variety	Maturity ¹ (date)	Colfax		Galesburg		2-site Avg.
			------(bu/a)-----				
NDSU	ND Benson	9/12	45.3	33.6	39.5		
Richland	MK808CN	9/29	40.0	20.4	30.2		
Richland	MK41	9/29	44.8	23.3	34.1		
Richland	MK146	10/7	45.1	6.7	25.9		
Sevita	Skyline	10/7	49.7	24.5	37.1		
Check variety	Susceptible	9/16	42.0	20.0	31.0		
Mean		9/30	44.5	21.4	33.0		
CV %		2.5	9.6	26.2	15.1		
LSD 0.05		2.0	5.9	7.8	4.9		
LSD 0.10		2.0	5.9	6.5	4.1		

Colfax - Planted: June 5. Galesburg - Planted: May 17.

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

Table 8. 2019 NDSU Credenz, Enlist, RR and Xtend Soybean, Central Locations in North Dakota - Author, T. Helms. M

Company/ Brand	Variety	Maturity ¹ (date)	Seed Yield			
			Arthur	Grandin	2019 2-site Avg.	2-yr. Avg.
			------(bu/a)-----			
BASF	CZ309	9/29	34.6	26.6	30.6	--
BASF	CZ419	9/29	29.2	39.5	34.4	--
BASF	CZ729	9/29	45.8	42.7	44.2	--
Channel	0218R2X	9/20	21.7	40.3	31.0	42.8
Channel	0320R2X	9/26	36.2	38.4	37.3	--
Channel	0720R2X	9/29	38.8	48.5	43.7	--
Dairyland	DSR-0200/R2Y	9/19	24.6	44.6	34.6	--
Dairyland	DSR-0577E	9/29	23.2	34.2	28.7	--
Dairyland	DSR-0717E	9/29	41.3	44.1	42.7	--
Dairyland	DSR-0847E	9/29	38.0	34.1	36.0	--
Dyna-Gro	S04XT77	9/21	38.2	33.1	35.6	48.2
Dyna-Gro	S05EN70	9/29	29.9	42.0	36.0	--
Dyna-Gro	S06XT59	9/29	37.1	43.0	40.0	52.9
Dyna-Gro	S07XT28	9/29	34.3	49.4	41.9	53.9
Genesis	G0440E	9/29	46.0	46.8	46.4	--
Golden H.	GH0308X	9/20	21.0	30.3	25.6	--
Golden H.	GH0543X	9/27	36.3	33.0	34.6	--
Golden H.	GH0749X	9/29	18.8	41.2	30.0	46.1
Integra	40829	9/29	40.9	43.2	42.1	--
Integra	50510N	9/27	20.3	32.7	26.5	--
Integra	50629N	9/29	31.0	41.0	36.0	--
Legacy	LS-0438RR2X	9/27	38.2	37.2	37.7	48.7
Legacy	LS-0629NE3	9/29	37.1	22.9	30.0	--
Legacy	LS-0638NRR2X	9/29	26.5	33.7	30.1	46.0
Legacy	LS-0738NRR2X	9/29	34.9	41.8	38.3	50.0
Legend	LS02E963	9/22	31.8	31.6	31.7	--
Legend	LS03X852N	9/20	25.0	37.8	31.4	45.8
Legend	LS05X050N	9/29	24.6	30.5	27.5	--
LG Seeds	LGS0355RX	9/21	25.5	37.6	31.5	--
LG Seeds	LGS0400RX	9/15	29.0	46.6	37.8	--
LG Seeds	LGS0735RX	9/29	34.8	38.8	36.8	--
Mustang	02E119	9/21	34.0	34.7	34.4	--
Mustang	03X329	9/22	20.7	25.5	23.1	--
Mustang	06X628	9/27	34.9	40.3	37.6	--
Mustang	05E449	9/29	42.0	41.5	41.7	--
P3 Genetics	1905B	9/29	28.7	32.5	30.6	--
P3 Genetics	1906E	9/29	20.6	34.2	27.4	--
P3 Genetics	2005E	9/29	36.5	40.6	38.5	--
Peterson	18X08	9/17	14.0	19.6	16.8	--
Proseed	XT80-20	9/20	24.7	33.4	29.1	--
Proseed	EL90-53	9/28	28.9	46.5	37.7	--
Proseed	XT80-60	9/29	37.5	41.9	39.7	--
REA	RX0520	9/28	26.0	36.9	31.4	--
REA	RX0330	9/29	13.0	35.1	24.1	--
REA	RX0719	9/29	30.9	39.4	35.1	49.3
Stine	07EA36	9/29	43.0	40.5	41.8	--
Stine	09EA02	9/29	33.7	35.6	34.7	48.1
Syng NK	S01-C4X	9/19	33.2	27.7	30.4	--
Syng NK	S03-S6X	9/21	21.8	33.8	27.8	--
Syng NK	S07-Q4X	9/29	17.2	36.6	26.9	45.4
Syng NK	S09-D4X	9/29	30.3	42.2	36.2	--
Mean		9/25	30.8	37.4	34.0	48.1
CV %		3.0	26.4	22.0	24.0	--
LSD 0.05		2.0	12.7	13.0	9.1	--
LSD 0.10		2.0	10.7	10.9	7.6	--

Planted: Arthur, May 29; Grandin, May 15.

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

Table 9. 2019 NDSU Conventional and Liberty Link Soybean, Central Locations in North Dakota - Author, T. Helms.

Company/ Brand	Variety	Maturity ¹ (date)	Seed Yield			
			Arthur	Grandin	2019 2-site Avg.	2-yr. Avg.
			------(bu/a)-----			
NDSU	ND Benson	9/27	26.0	34.5	30.3	41.0
NDSU	ND Rolette	9/20	14.8	27.0	20.9	35.5
NDSU	ND Stutsman	9/29	18.4	37.7	28.0	42.7
NDSU	ND1907S	9/29	18.4	19.9	19.1	--
Richland	MK0603	9/29	9.3	23.8	16.6	33.6
Richland	MK0249	9/24	4.0	21.7	12.9	29.0
Richland	MK42	9/29	23.5	27.9	25.7	38.5
Sevita	Astor	9/27	15.0	26.4	20.7	--
Sevita	Panorama	9/25	24.6	33.2	28.9	--
Roundup Ready	Check	9/29	29.5	42.0	35.7	48.6
Mean		9/27	18.4	29.4	23.9	38.4
CV %		4.4	25.8	16.7	20.1	--
LSD 0.05		4.0	7.6	8.2	5.6	--
LSD 0.10		3.0	6.4	6.9	4.7	--

Planted: Arthur, May 29; Grandin, May 15.

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

Table 10. 2019 NDSU Conventional and Liberty Link Soybean, Southern Locations in North Dakota - Author, T. Helms.

Company/ Brand	Variety	Maturity ¹ (date)	Seed Oil (%)	Seed Protein (%)	Seed Yield			2-yr. Avg.
					Fairmount	Colfax	2019 2-site Avg.	
					------(bu/a)-----			
Brushvale	BS1146	10/6	16.6	36.4	39.5	42.1	40.8	53.1
Brushvale	BS1282	9/29	18.0	35.8	48.6	39.2	43.9	--
Brushvale	BS1345	10/5	17.7	35.0	50.3	36.7	43.5	--
Brushvale	BS1512	10/5	17.1	33.9	48.1	51.2	49.7	58.6
NDSU	ND Benson	9/23	17.9	33.9	43.0	41.9	42.5	48.1
NDSU	ND Stutsman	9/29	17.8	32.5	51.6	44.4	48.0	56.3
NDSU	ND1907S	9/27	16.8	33.5	39.1	37.9	38.5	--
Richland	MK1016	9/29	16.1	34.6	35.5	20.8	28.2	40.1
Richland	MK146	10/4	16.9	35.7	41.6	35.8	38.7	52.1
Richland	MK41	9/29	16.3	35.9	49.2	34.8	42.0	53.8
Richland	MK808CN	9/27	18.4	32.9	41.5	28.3	34.9	49.1
Sevita	Emperor	10/4	17.8	35.0	45.4	29.6	37.5	--
Sevita	Genesis	10/4	17.6	33.9	44.1	37.2	40.6	--
Sevita	Skyline	10/6	17.7	35.7	41.3	44.1	42.7	--
Check	Roundup Ready2	9/28	17.7	32.8	52.5	42.4	47.4	57.3
Mean		10/2	17.3	34.5	44.8	37.8	41.3	52.1
CV %		3.3	1.7	2.1	7.6	23.6	16.4	--
LSD 0.05		2.0	0.9	1.1	5.5	14.5	7.7	--
LSD 0.10		2.0	0.7	0.9	4.6	12.2	6.5	--

Planted: Fairmount, June 5; Colfax, June 2.

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

Table 11. 2019 NDSU Credeuz, Enlist, RR and Xtend Soybean, Southern Locations in North Dakota - Author, T. Helms.

Company/ Brand	Variety	Maturity ¹ (date)	Seed		Seed Yield				
			Oil (%)	Protein (%)	Fairmount	Milnor	Colfax	2019 3-site Avg.	2-yr. Avg.
BASF	CZ1139	10/5	17.5	32.0	41.3	26.0	42.3	36.5	--
BASF	CZ1280	10/6	18.5	34.1	52.8	32.0	32.7	39.2	--
BASF	CZ729	10/3	16.6	34.9	59.6	32.8	52.6	48.3	--
Channel	1020R2X	9/29	18.2	32.4	48.5	25.5	42.6	38.9	--
Channel	1520R2X	10/4	18.2	33.8	51.4	31.3	47.9	43.5	--
Channel	1920R2X	10/6	18.8	32.9	59.9	31.1	44.0	45.0	--
Dahlman	1011E3N	10/2	17.2	34.2	49.8	31.8	45.0	42.2	--
Dahlman	1014E3N	10/5	17.2	33.7	51.7	36.8	44.0	44.2	--
Dahlman	6811XN	10/3	17.7	33.4	53.9	30.5	47.1	43.8	56.0
Dairyland	DSR-0847E	10/4	18.1	33.4	56.1	24.7	39.7	40.2	--
Dairyland	DSR-0988/R2Y	9/30	17.1	32.3	56.0	32.9	55.0	48.0	58.6
Dairyland	DSR-1120/R2Y	10/4	18.5	32.1	52.3	38.0	40.5	43.6	53.6
Dyna-Gro	S09XT50	10/1	16.8	34.2	51.5	32.8	44.5	42.9	--
Dyna-Gro	S11EN40	10/3	16.1	33.2	60.3	40.4	52.1	50.9	--
Dyna-Gro	S11XT78	10/4	17.3	33.7	53.4	37.1	50.4	47.0	57.3
Dyna-Gro	S13XT89	10/3	17.3	33.3	59.7	39.2	58.8	52.6	--
Genesis	G0641E	9/26	18.1	32.0	55.2	31.0	53.1	46.4	--
Genesis	G1041E	10/2	17.2	33.8	37.1	24.4	43.8	35.1	--
Golden H.	GH0749X	9/26	17.4	34.1	50.6	26.3	41.2	39.4	50.9
Golden H.	GH0936X	9/30	17.9	32.1	50.8	29.8	47.5	42.7	--
Golden H.	GH1317X	10/3	17.9	32.8	60.1	35.8	50.4	48.8	--
Integra	40999N	10/3	17.0	34.5	41.7	18.9	43.8	34.8	--
Integra	50990N	10/3	18.2	31.6	51.8	28.7	42.6	41.0	--
Integra	51229N	10/2	16.7	33.3	53.1	33.8	54.6	47.2	--
Legacy	LS-0930NRR2X	10/1	18.0	31.6	44.8	27.1	44.0	38.6	--
Legacy	LS-1138NRR2X	10/2	17.8	32.9	54.4	36.9	43.4	44.9	57.3
Legacy	LS-1320NE3	10/5	17.2	33.7	64.5	42.0	47.9	51.5	--
Legend	LS06X950N	9/26	16.9	34.8	46.5	31.1	47.8	41.8	--
Legend	LS09X960N	9/28	17.1	33.9	43.7	24.4	33.1	33.7	50.8
LG Seeds	0735RX	9/29	17.7	33.2	45.9	22.5	41.0	36.5	--
LG Seeds	1018RX	9/28	17.3	34.2	52.6	34.3	45.1	44.0	53.4
LG Seeds	1118RX	10/3	17.6	32.0	51.8	26.1	40.5	39.5	--
LG Seeds	1337RX	10/4	17.5	33.9	58.6	35.3	51.7	48.5	58.6
Mustang	10929	9/29	17.6	33.1	54.9	32.4	51.3	46.2	--
Mustang	12E220	10/5	16.4	33.0	54.8	37.9	44.4	45.7	--
Mustang	11E929	10/4	17.5	33.8	47.6	22.7	36.5	35.6	--
Mustang	12X928	10/3	17.5	34.1	56.1	36.8	41.2	44.7	--
P3 Genetics	1911E	10/4	17.3	34.1	52.7	28.1	46.6	42.5	--
P3 Genetics	2013B	10/6	17.6	33.3	50.8	41.5	50.3	47.5	--
P3 Genetics	2013E	10/4	17.6	33.3	58.4	38.4	47.5	48.1	--
Peterson	20X09	9/30	17.5	33.6	48.9	28.9	42.7	40.2	--
Proseed	EL80-93	9/30	17.0	34.0	50.5	30.2	39.2	40.0	--
Proseed	EL81-13	10/3	17.5	33.2	59.8	33.4	30.8	41.3	--
Proseed	EL91-23	10/4	16.5	32.1	54.5	39.3	47.1	47.0	--
Proseed	XT90-90	10/2	16.8	33.8	51.7	31.4	53.2	45.4	--
REA	RX0929	9/29	16.3	35.6	52.3	35.9	49.7	46.0	55.1
REA	RX1030	9/29	17.3	34.3	53.7	27.3	39.6	40.2	--
Stine	12EB32	10/5	17.5	33.5	51.1	33.7	37.4	40.7	--
Stine	13EA12	10/5	17.2	33.8	58.6	36.2	48.1	47.6	--
Syng NK	S07-Q4X	9/26	17.5	33.7	50.4	31.8	47.6	43.3	54.5
Syng NK	S09-D4X	9/29	18.0	31.8	52.0	34.6	43.2	43.3	--
Syng NK	S10-H7X	10/3	16.8	35.9	44.4	31.8	40.0	38.7	--
Syng NK	S12-R3	10/1	17.2	34.3	52.1	36.2	47.7	45.3	55.7
Mean		10/2	17.4	33.4	52.5	32.1	45.2	43.3	55.1
CV %		3.6	2.2	1.7	12.7	18.6	20.0	17.0	--
LSD 0.05		2.0	0.5	0.9	10.6	9.6	10.4	6.8	--
LSD 0.10		2.0	0.4	0.7	8.9	8.1	8.7	5.8	--

Planted: Fairmount, June 3; Milnor, June 7; Colfax, June 2.

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

Table 12. 2019 Soybean - Dryland, Enlist, GT, RR and Xtend - Carrington - Authors, M. Ostlie, B. Schatz and G. Endres (Page 1 of 2).

Company/ Brand	Variety	Herbicide Trait	Mat. Group	Maturity ¹ (date)	Pod Ht (inch)	Plant Ht (inch)	Seeds/ Pound	Test Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed yield (bu/a)	
											2019	2-yr. Avg.
Croplan	RX0500	RR2XT	0.5	9/19	4	35	2,734	56.2	17.8	34.8	68.4	--
Croplan	RX0700	RR2XT	0.7	9/21	4	32	2,708	55.6	17.4	34.7	59.7	--
Dairyland	DSR-0200/R2Y	RR2Y	0.2	9/12	3	35	2,229	56.7	17.1	36.0	59.7	--
Dairyland	DSR-0577E	Enlist	0.5	9/21	3	31	2,761	56.3	17.4	35.8	45.6	--
Dairyland	DSR-0717E	Enlist	0.7	9/22	4	32	2,838	56.1	17.5	35.7	70.9	--
Dairyland	DSR-0847E	Enlist	0.8	9/26	3	31	2,642	58.5	18.1	34.4	68.4	--
Dairyland	DSR-C999R2Y	RR2Y	00.9	9/14	3	32	2,362	55.3	17.7	35.2	59.9	47.0
Dyna-Gro	S03XT29	RR2XT	0.3	9/13	2	31	3,007	56.2	17.1	34.9	69.6	51.8
Dyna-Gro	S05EN70	Enlist	0.5	9/19	4	32	2,659	55.7	17.5	34.6	59.5	--
Dyna-Gro	S06XT59	RR2XT	0.6	9/21	3	34	3,008	56.8	17.0	34.6	65.8	45.9
Genesis	G0440E	Enlist	0.4	9/17	4	31	2,558	56.2	17.3	35.4	60.7	--
Integra	20215	RR2Y	0.2	9/13	4	30	2,771	56.3	16.9	36.0	56.1	50.2
Integra	20300	RR2Y	0.3	9/20	3	31	2,915	56.3	16.6	36.0	65.8	48.4
Integra	40129	Enlist	0.1	9/13	3	32	3,405	56.2	17.6	35.1	60.2	--
Integra	40209	Enlist	0.2	9/12	4	36	3,435	55.8	17.0	35.7	54.5	--
Integra	50309N	RR2XT	0.3	9/15	4	34	3,031	55.8	17.1	34.8	66.3	51.5
Latham	L0438R2X	RR2XT	0.4	9/18	3	32	2,345	56.4	17.6	34.3	64.0	--
Latham	L0553R2X	RR2XT	0.5	9/20	3	32	2,439	56.2	17.6	35.3	67.2	--
Latham	L0595E3	Enlist	0.5	9/19	5	34	2,681	55.9	17.7	34.3	62.9	--
Latham	L0883R2X	RR2XT	0.8	9/23	5	32	2,920	56.9	17.1	34.5	68.5	--
Latham	L0982R2	RR2Y	0.9	9/25	4	32	2,837	57.2	17.3	35.0	64.3	--
Legacy	LS-05X050N	RR2XT	0.5	9/19	2	32	2,487	56.4	17.6	34.9	63.6	--
Legacy	LS-06X950N	Enlist	0.6	9/20	4	34	2,654	55.5	17.5	34.8	62.7	46.8
Legacy	LS-0438 RR2X	RR2XT	0.4	9/20	3	32	2,597	55.4	17.8	35.4	65.9	49.8
Legacy	LS-0629N E3	RR2XT	0.6	9/20	3	27	2,708	57.0	17.9	34.7	64.7	--
Legacy	LS-0638N RR2X	RR2XT	0.6	9/21	4	32	3,048	56.2	17.2	34.3	67.0	47.6
Legacy	LS-0738N RR2X	RR2XT	0.7	9/20	3	33	2,705	55.9	17.3	35.0	72.7	49.7
LG Seeds	LGS0355RX	RR2XT	0.3	9/14	3	32	3,072	56.0	17.2	34.6	66.4	48.7
LG Seeds	LGS0400RX	RR2XT	0.4	9/18	4	33	2,490	55.8	17.5	34.3	69.0	49.4
LG Seeds	LGS0735RX	RR2XT	0.7	9/23	3	35	2,734	57.4	17.7	34.2	65.1	--
NDSU	ND17009GT	GT	00.9	9/9	4	31	2,572	58.6	18.2	36.5	56.2	43.7
NDSU	ND18008GT	GT	00.8	9/6	4	28	3,067	56.9	17.8	36.0	50.1	39.4
NorthStar	NS 60264NXR2	RR2XT	0.2	9/14	4	32	3,017	56.2	17.2	35	59.1	43.2
NorthStar	NS 60555NXR2	RR2XT	0.5	9/19	3	33	2,462	56.3	17.5	35	69.4	--
NorthStar	NS 60823NXR2	RR2XT	0.8	9/21	3	29	2,643	55.9	17.3	34.7	67.3	48.9
NorthStar	NS 80405LG+	LLGT27	0.4	9/22	4	32	2,703	56.8	16.6	36	66.5	--
NorthStar	NS 80854LG+	LLGT27	0.8	9/23	3	35	3,114	56.7	16.8	37.1	72.8	--
NorthStar	NS 90334E3	Enlist	0.3	9/18	4	31	2,551	56.4	17.1	36	62.4	--
NorthStar	NS 90544NE3	Enlist	0.5	9/18	3	31	2,875	57.1	18.1	35	69.2	--
NorthStar	NS 90764NE3	Enlist	0.7	9/21	3	29	2,664	55.4	17.4	36	73.0	--
Peterson	19X03	RR2XT	0.3	9/13	2	33	3,048	56.1	17.3	34.8	61.8	50.0
Peterson	20X05	RR2XT	0.5	9/20	3	30	2,525	56.3	17.8	34.9	64.8	--
Proseed	BX 80-35	LLGT27	0.3	9/19	3	30	2,913	56.7	16.9	38.0	70.5	--
Proseed	EL 80-33	Enlist	0.3	9/18	4	32	2,653	56.2	17.1	35.8	63.6	--
Proseed	XT 60-40	RR2XT	0.4	9/16	3	31	2,662	55.7	17.4	35.4	66.4	54.6
Proseed	XT 80-20	RR2XT	0.2	9/16	3	33	2,955	56.1	17.1	34.9	61.5	47.1
Mean				9/19	3	32	2,767	56.3	17.3	35	64.3	48.2
CV %				1.3	37	10.4	--	0.9	1.3	1.0	7.5	--
LSD 0.05				2.2	NS	NS	--	0.7	0.3	0.5	6.7	--
LSD 0.10				1.8	NS	NS	--	0.6	0.3	0.4	5.6	--

Table 12. 2019 Soybean - Dryland, Enlist, GT, RR and Xtend - Carrington - Authors, M. Ostlie, B. Schatz and G. Endres (Page 2 of 2).

Company/ Brand		Variety	Trait	Mat. Group	Maturity ¹ (date)	Pod Ht (inch)	Plant Ht (inch)	Seeds/ Pound	Test Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed yield 2019 2-yr. Avg. ------(bu/a)-----	
REA	RX0330	RR2XT	0.3	9/20	4	31	2,874	56.1	17.1	34.8	52.2	--	
REA	RX0520	RR2XT	0.5	9/20	4	30	2,312	56.7	17.1	36.0	69.3	--	
REA	RX0719	RR2XT	0.7	9/19	3	32	2,840	55.7	17.6	35.5	64.2	49.1	
Syng NK	S02-F9X	RR2XT	0.2	9/13	3	31	2,911	56.8	17.9	33.7	64.0	--	
Syng NK	S03-S6X	RR2XT	0.3	9/16	3	31	2,928	56.3	17.0	34.4	56.6	--	
Syng NK	S05-N5X	RR2XT	0.5	9/19	2	30	2,553	56.2	17.8	34	76.4	--	
Syng NK	S06-K4X	RR2XT	0.6	9/19	3	29	2,684	56.6	16.4	35	69.2	--	
Syng NK	S07-Q4X	RR2XT	0.7	9/21	4	32	2,500	55.8	17.3	35	72.1	--	
Thunder	SB8009N	RR2XT	0.9	9/24	3	31	2,889	57.2	17.0	34.5	61.0	--	
Thunder	SB8807N	RR2XT	0.7	9/22	3	35	3,069	56.8	17.2	34.4	64.8	--	
Thunder	SB8903N	RR2XT	0.3	9/15	3	30	3,002	56.2	17.1	34.8	64.6	49.6	
Thunder	SB8906N	RR2XT	0.6	9/20	3	35	2,557	55.0	17.5	34.7	64.9	47.4	
Thunder	TE7906N	Enlist	0.6	9/20	3	30	2,912	56.9	17.9	34.8	63.7	--	
Mean				9/19	3	32	2,767	56.3	17.3	35.1	64.3	48.2	
CV %				1.3	37	10.4	--	0.9	1.3	1.0	7.5	--	
LSD 0.05				2.2	NS	NS	--	0.7	0.3	0.5	6.7	--	
LSD 0.10				1.8	NS	NS	--	0.6	0.3	0.4	5.6	--	

Planted: May 21. Harvested: Oct. 30. Previous crop: durum.

¹Maturity is date of 95% brown or tan pods²Lodging: 0-none, 9-lying flat on the ground.**Table 13. 2018 Soybean - Irrigated, Conventional - Carrington - Authors, M. Ostlie, B. Schatz and K. Bjerke.**

Company/ Brand		Variety	Mat. Group	Maturity ¹ (date)	Pod Ht (inch)	Plant Ht (inch)	Seeds/ Pound (seeds)	Test Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed Yield 2019 3-yr. Avg. ------(bu/a)-----	
Conventional												
NDSU	Ashtabula		0.4	9/15	4	36	3,081	57.2	18.1	35.6	58.7	56.1
NDSU	ND Benson		0.4	9/16	5	32	3,000	57.3	17.1	37.5	54.3	54.0
NDSU	ND Henson		0	9/11	4	30	2,901	59.5	17.9	36.3	52.2	53.6
NDSU	ND Rolette		0.9	9/11	4	34	3,814	58.2	17.4	36.2	57.9	54.5
NDSU	ND Stutsman		0.7	9/20	5	38	3,106	58.1	17.5	35.6	61.2	60.0
NDSU	Sheyenne		0.7	9/18	4	33	3,119	58.0	17.5	36.1	63.9	58.3
Sevita	Emperor		1	9/22	6	35	2,049	57.5	17.1	38.6	64.0	--
Sevita	Genesis		0.9	9/24	6	36	2,353	56.8	17.2	37.4	57.6	--
Sevita	Panorama		0.3	9/15	5	31	2,465	57.5	16.5	39.6	57.3	--
Sevita	Skyline		1.1	9/26	5	34	2,344	59.0	17.1	38.6	62.5	--
Liberty Link												
Latham	L0643L		0.6	9/20	5	31	2,433	57.8	17.0	35.4	62.3	--
Latham	L0842L		0.8	9/22	7	38	2,329	57.9	16.9	37.4	59.9	--
Mean				9/17	5	34	2,749	57.9	17.3	37.0	59.3	56.1
CV %				1.2	34	7.2	4	1.2	1.9	1.4	11.9	--
LSD 0.05				2.1	NS	3.5	158	1.0	0.5	0.7	9.7	--
LSD 0.10				1.7	NS	2.9	132	0.8	0.4	0.6	8.1	--

Planted: May 21. Harvested: Oct. 29. Previous crop: durum.

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

Table 14. 2019 Soybean - Irrigated, Enlist, GT, RR and Xtend - Carrington - Authors, M. Ostlie, B. Schatz and K. Bjerke.

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 2019 2-yr. Avg. ----- (bu/a) -----
Dairyland	DSR-0200/R2Y	RR2Y	0.2	9/15	5	40	2,377	57.1	17.0	37.1	62.5 --
Dairyland	DSR-0577E	Enlist	0.5	9/24	5	34	2,857	55.8	16.9	37.1	52.9 --
Dairyland	DSR-0717E	Enlist	0.7	9/26	5	35	2,853	55.8	16.8	37.5	68.3 --
Dairyland	DSR-0847E	Enlist	0.8	9/27	7	34	2,810	58.0	17.6	35.9	69.3 --
Dyna-Gro	S03XT29	RR2XT	0.3	9/16	4	34	3,266	55.9	17.1	35.8	68.2 72.5
Dyna-Gro	S05EN70	Enlist	0.5	9/23	5	34	2,928	55.4	17.1	35.5	59.9 --
Dyna-Gro	S06XT59	RR2XT	0.6	9/24	5	36	3,138	55.4	16.8	35.3	66.6 68.9
Integra	40209	Enlist	0.2	9/15	5	32	3,477	55.8	16.5	36.9	53.7 --
Integra	50309N	RR2XT	0.3	9/17	5	36	3,237	56.1	17.2	35.6	62.8 70.9
Latham	L0438R2X	RR2XT	0.4	9/23	6	35	2,745	56.2	17.0	35.6	67.5 --
Latham	L0553R2X	RR2XT	0.5	9/24	5	34	2,665	56.4	17.7	36.2	70.9 --
Latham	L0595E3	Enlist	0.5	9/23	5	32	2,765	54.6	17.2	35.6	57.9 --
Latham	L0883R2X	RR2XT	0.8	9/29	4	34	3,014	57.3	16.8	36.3	67.1 --
Latham	L0982R2	RR2Y	0.9	9/29	6	35	2,720	56.3	17.0	35.8	77.3 --
Latham	L0995E3	Enlist	0.9	9/26	4	33	3,156	56.4	17.0	35.7	65.0 --
Legacy	LS-0438 RR2X	RR2XT	0.4	9/1	4	35	2,783	55.7	17.9	36.7	73.5 76.2
Legacy	LS-0629N E3	Enlist	0.6	9/24	5	32	3,172	58.0	17.7	35.5	62.3 --
Legacy	LS-0738N RR2X	RR2XT	0.7	9/24	3	35	2,797	55.8	16.8	36.1	76.8 76.3
Legacy	LS-0829 E3	Enlist	0.8	9/25	5	35	2,938	55.1	16.8	37.4	66.3 --
LG Seeds	LGS0355RX	RR2XT	0.3	9/17	6	36	3,191	56.0	17.1	35.9	62.3 64.7
LG Seeds	LGS0400RX	RR2XT	0.4	9/20	4	35	2,921	55.3	17.4	35.3	70.8 --
LG Seeds	LGS0735RX	RR2XT	0.7	9/25	5	34	2,767	56.1	17.5	35.2	66.6 --
NDSU	ND17009GT	GT	00.9	9/13	5	36	3,333	58.6	17.6	38.5	59.9 62.1
NDSU	ND18008GT	GT	00.8	9/12	3	31	2,944	56.8	17.3	37.9	50.1 57.8
Peterson	19X03	RR2XT	0.3	9/16	5	36	3,385	56.4	17.1	35.6	64.9 69.0
Peterson	20X05	RR2XT	0.5	9/23	5	33	2,760	55.1	17.4	36.3	70.3 --
Proseed	BX 80-35	LLGT	0.3	9/22	5	33	3,068	56.3	16.8	38.2	71.4 --
Proseed	EL 80-33	Enlist	0.3	9/21	5	34	2,770	56.0	17.0	37.0	64.3 --
Proseed	XT 60-40	RR2XT	0.4	9/20	4	35	2,765	55.4	17.1	36.4	73.8 74.8
Proseed	XT 80-20	RR2XT	0.2	9/16	4	35	3,228	55.3	16.9	35.7	61.1 69.9
REA	RX0330	RR2XT	0.3	9/19	5	36	2,872	55.6	17.0	35.6	61.6 --
REA	RX0520	RR2XT	0.5	9/24	5	35	2,698	55.9	16.5	37.0	72.0 --
REA	RX0719	RR2XT	0.7	9/24	4	35	2,913	56.1	17.4	36.2	67.4 72.4
Thunder	SB8009N	RR2XT	0.9	9/28	5	36	3,114	56.7	16.6	36.3	71.7 --
Thunder	SB8807N	RR2XT	0.7	9/24	5	34	3,143	55.9	17.0	35.1	66.1 --
Thunder	SB8903N	RR2XT	0.3	9/15	4	34	3,324	56.2	17.4	35.7	58.1 67.9
Thunder	SB8906N	RR2XT	0.6	9/24	4	38	2,632	55.2	17.2	36.2	72.0 74.6
Thunder	TE7906N	Enlist	0.6	9/24	3	30	3,081	57.3	17.6	35.6	65.4 --
Mean				9/21	5	35	2,963	56.1	17.1	36.2	65.7 69.9
CV %				0.7	33	6.4	5	1.4	2.1	0.8	10.5 --
LSD 0.05				1.2	NS	3.1	211	1.1	0.5	0.4	9.4 --
LSD 0.10				1.0	NS	2.6	177	0.9	0.4	0.3	7.9 --

Planted: May 21. Harvested: Oct. 29. Previous crop: soybean.

¹Maturity is date of 95% brown or tan pods.²The line did not reach physiological maturity.

Table 15. 2019 Soybean - Dryland, Conventional and Liberty Link - 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	
										2019	3-yr. Avg. ---(bu/a)---
Conventional											
Caldbeck	ATSOY111298	0.5	9/15	4	40	2,677	54.6	16.6	38.1	58.8	--
NDSU	Ashtabula	0.4	9/13	2	36	3,068	54.7	18.4	34.8	60.9	44.9
NDSU	ND Benson	0.4	9/15	4	32	3,090	55.0	17.4	36.6	59.4	42.7
NDSU	ND Henson	0	9/10	3	30	3,070	55.7	18.4	34.7	57.8	40.4
NDSU	ND Rolette	0.9	9/10	2	33	3,691	55.4	17.7	35.8	52.8	42.9
NDSU	ND Stutsman	0.7	9/20	4	34	3,102	55.3	17.7	34.4	65.6	50.9
NDSU	Sheyenne	0.7	9/18	3	36	3,164	54.9	17.4	34.5	56.1	47.0
Richland	MK0249	0.2	9/13	3	29	4,646	54.8	16.9	35.5	51.0	38.8
Richland	MK0508	0.8	9/19	6	34	5,375	56.0	16.2	36.8	44.4	32.2
Richland	MK0603	0.6	9/20	4	34	5,055	55.4	15.1	38.1	39.0	32.7
Richland	MK42	0.7	9/17	5	39	2,532	55.4	15.8	38.7	51.6	--
Richland	MK808CN	0.8	9/18	3	33	3,417	55.3	17.4	35.4	52.4	41.2
Sevita	Emperor	1	9/25	3	35	2,071	54.2	17.0	37.4	66.3	--
Sevita	Genesis	0.9	9/21	6	35	2,502	54.5	17.3	35.7	58.2	--
Sevita	Panorama	0.3	9/14	3	33	2,449	54.4	16.7	38.2	58.7	--
Sevita	Skyline	1.1	10/2	3	36	2,554	56.0	16.7	38.4	60.6	--
Liberty Link											
Latham	L0643L	0.6	9/21	3	34	2,443	55.3	16.7	34.4	73.3	--
Latham	L0842L	0.8	9/27	5	34	2,541	54.9	16.7	36.3	71.7	--
Mean			9/18	4	35	3,080	54.9	17.2	35.9	58.0	41.4
CV %			1.2	52	10.1	4.1	0.6	1.4	1.5	8.4	--
LSD 0.05			2.1	NS	4.9	177	0.5	0.4	0.7	6.8	--
LSD 0.10			1.8	NS	4.1	148	0.4	0.3	0.6	5.7	--

Planted: May 20. Harvested: Oct. 31. Previous crop: durum.

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

Table 16. 2019 Soybean - Enlist, GT, 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		
											2019	2-yr. Avg. ----- (bu/a) -----	3-yr. Avg.
Dairyland	DSR-0717E	Enlist	0.7	10/1	2	31	3.3	55.5	15.6	35.8	56.5	--	--
Dairyland	DSR-0847E	Enlist	0.8	10/4	3	31	6.3	55.6	16.2	35.3	47.1	--	--
Dairyland	DSR-0988/R2Y	RR2Y	0.9	10/3	2	32	2.5	55.8	15.9	34.0	55.6	64.5	63.4
Dairyland	DSR-1120/R2Y	RR2Y	1.1	10/4	2	32	5.0	55.4	16.5	34.4	66.8	69.1	--
Dyna-Gro	S06XT59	RR2XT	0.6	9/27	1	32	2.0	56.2	15.8	34.4	54.6	61.9	--
Dyna-Gro	S07XT28	RR2XT	0.7	9/26	2	33	3.0	55.3	15.8	34.7	57.1	61.5	61.4
Dyna-Gro	S09XT50	RR2XT	0.9	10/3	3	30	3.5	55.9	15.5	34.6	58.2	--	--
Genesis	G0641E	Enlist	0.7	10/1	3	29	5.0	56.0	15.8	35.8	57.4	--	--
Integra	40829	Enlist	0.8	9/28	4	30	3.0	55.7	15.6	35.9	67.2	--	--
Integra	50629	--	0.6	9/29	2	33	4.5	55.6	15.5	34.6	49.6	--	--
Latham	L0595E3	Enlist	0.5	9/26	3	32	3.3	55.4	15.9	34.2	55.0	--	--
Latham	L0883R2X	RR2XT	0.8	10/4	3	29	3.0	55.3	15.5	34.3	56.4	--	--
Latham	L0982R2	RR2Y	0.9	10/4	3	34	6.5	54.9	16.0	34.4	68.7	--	--
Latham	L0995E3	Enlist	0.9	10/3	3	29	3.3	55.4	15.9	34.3	50.7	--	--
Latham	L1039R2X	RR2XT	1.0	10/4	3	32	4.8	55.2	16.4	33.6	59.4	--	--
Legacy	LS-0738N	RR2XT	0.7	9/28	1	31	2.5	55.2	16.0	34.2	55.5	63.6	62.7
Legacy	LS-0830N	RR2XT	0.8	10/2	3	32	3.3	55.0	15.5	34.2	57.9	--	--
Legacy	LS-1138N	RR2XT	1.1	10/3	2	33	4.3	56.0	16.3	34.8	65.3	70.6	67.3
Legend	LS 07X060N	RR2XT	0.7	9/29	2	31	2.3	55.8	16.2	35.0	57.3	--	--
Legend	LS 08E965N	Enlist	0.8	10/1	4	31	3.3	56.1	15.8	34.7	53.2	--	--
Legend	LS 09X960N	RR2XT	0.9	9/30	3	31	3.0	56.0	15.9	34.2	51.4	--	--
LG Seeds	LGS0735RX	RR2XT	0.7	10/3	3	31	2.0	56.0	16.2	33.9	47.2	--	--
LG Seeds	LGS1118RX	RR2XT	1.1	10/4	2	27	5.0	54.8	16.4	33.0	52.1	--	--
NDSU	ND17009GT	GT	00.9	9/19	3	29	2.5	57.5	16.6	36.2	52.8	51.5	52.0
NDSU	ND18008GT	GT	00.8	9/18	2	31	3.5	55.6	16.5	35.6	55.5	51.3	--
P3 Genetics	19EN06	Enlist	0.6	10/1	3	27	4.8	56.5	15.9	35.7	53.5	--	--
P3 Genetics	19EN07	Enlist	0.7	9/29	3	32	2.3	55.1	15.7	35.9	59.8	--	--
Proseed	EL 80-93	Enlist	0.9	10/4	2	31	3.8	55.8	15.1	35.9	63.8	--	--
Proseed	EL 91-23	Enlist	1.2	10/4	3	31	4.5	54.3	14.7	35.2	48.1	--	--
Proseed	EL 91-33	Enlist	1.3	10/4	3	33	7.8	54.0	15.8	35.1	52.2	--	--
Proseed	XT 90-90	RR2XT	0.9	10/4	2	31	4.8	55.0	15.5	34.9	52.8	--	--
Proseed	EL 81-13	Enlist	1.1	10/4	3	32	5.0	55.7	15.6	35.2	59.0	--	--
Syng NK	S03-S6X	RR2XT	0.3	9/23	2	29	2.3	55.9	15.8	33.7	50.3	--	--
Syng NK	S05-N5X	RR2XT	0.5	9/23	1	32	1.3	55.5	16.1	34.0	63.7	--	--
Syng NK	S07-Q4X	RR2XT	0.7	9/26	3	29	1.8	55.8	16.1	34.6	55.0	--	--
Syng NK	S09-D4X	RR2XT	0.9	9/28	2	31	1.3	56.5	16.5	32.7	62.1	--	--
Thunder	SB8009N	RR2XT	0.9	10/4	3	32	4.5	55.6	15.5	34.5	64.4	--	--
Thunder	SB8807N	RR2XT	0.7	9/27	3	31	3.5	55.7	15.7	34.6	55.9	--	--
Thunder	SB8906N	RR2XT	0.6	9/28	2	36	4.0	54.9	15.9	34.7	60.6	66.2	--
Thunder	TE7906N	Enlist	0.6	10/1	3	28	3.3	56.0	16.0	35.6	67.9	--	--
Thunder	TE7910N	Enlist	1.0	10/4	3	33	4.5	55.7	15.2	35.5	53.7	--	--
Mean				9/30	2	31	3.6	55.6	15.9	34.7	56.9	62.2	61.4
CV %				1.2	40	9.4	45	0.9	1.5	1.3	10.7	--	--
LSD 0.05				1.9	NS	4.0	2.3	0.7	0.3	0.7	8.3	--	--
LSD 0.10				1.6	1.1	3.4	1.9	0.6	0.3	0.5	6.9	--	--

Planted: June 5. Harvested: Oct. 31. Previous crop: spring wheat.

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

Table 17. 2019 Soybean - Irrigated, Enlist, RR and Xtend - Oakes (Carrington REC) - Authors, K. Cooper, H. Eslinger and S. Nelson.

Company/ Brand	Variety	Herbicide Trait	Mat. Group	Maturity ¹ (date)	Plant Lodge ² (0-9)	Seeds/ Pound (seeds)	Test Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed Yield	
										2019	2-yr. ---(bu/a)---
Dairyland	DSR-0717E	Enlist	0.7	9/21	2.5	2,510	55.9	18.0	35.5	68.1	--
Dairyland	DSR-0847E	Enlist	0.8	9/28	2.5	2,437	56.3	18.2	34.4	82.4	--
Dairyland	DSR-0988/R2Y	RR2Y	0.9	9/23	2.5	2,675	56.3	17.8	34.1	75.3	--
Dairyland	DSR-1120/R2Y	RR2Y	1.1	9/29	4.3	2,220	56.2	18.7	34.6	68.1	78.2
Dyna-Gro	S09XT50	RR2XT	0.9	9/28	1.3	2,631	57.1	17.5	35.5	71.9	--
Dyna-Gro	S11EN40	Enlist	1.1	10/2	3.3	2,615	57.6	17.1	35.2	72.9	--
Dyna-Gro	S11XT78	RR2XT	1.1	9/25	3.3	2,377	57.1	17.9	35.2	73.3	67.6
Dyna-Gro	S13XT89	RR2XT	1.3	9/26	3.0	2,644	55.9	17.7	34.7	72.5	--
Dyna-Gro	S14EN90	Enlist	1.4	10/4	4.0	2,219	56.3	18.0	34.6	71.6	--
Integra	50850N	RR2XT	0.8	9/22	1.5	2,472	56.2	17.5	35.6	67.9	70.2
Integra	51229N	RR2XT	1.2	10/1	3.0	2,557	55.9	18.0	34.7	72.5	--
Legacy	LS-0830NRR2X	RR2XT	0.8	9/25	1.0	2,696	56.6	17.5	35.2	71.4	--
Legacy	LS-1138N RR2X	RR2XT	1.1	9/26	2.5	1,837	43.1	13.5	26.3	51.7	66.9
Legacy	LS-1220N E3	Enlist	1.2	10/4	3.8	2,224	56.3	18.0	34.7	70.4	--
LG Seeds	C1000RX	RR2XT	1	9/28	2.5	2,411	56.7	17.9	35.1	49.6	66.9
LG Seeds	LGS1118RX	RR2XT	1.1	9/26	1.3	2,574	56.8	18.2	33.3	70.7	--
LG Seeds	LGS13377RX	RR2XT	1.3	9/29	3.5	2,471	56.9	18.1	34.6	72.0	76.8
LG Seeds	LGS1575RX	RR2XT	1.5	9/28	1.8	2,714	56.8	17.7	34.6	69.7	78.7
P3 Genetics	1910EN	Enlist	1	9/24	1.5	2,470	56.3	17.6	35.5	68.9	--
Proseed	EL 80-93	Enlist	0.9	9/22	1.5	2,457	56.2	17.9	35.2	52.9	--
Proseed	EL 81-13	Enlist	1.1	9/22	1.5	2,500	56.7	17.7	35.0	72.7	--
Proseed	EL 91-23	Enlist	1.2	10/2	3.3	2,582	57.0	16.9	35.1	72.0	--
Proseed	EL 91-33	Enlist	1.3	10/7	4.0	2,230	57.0	18.1	34.4	79.2	--
Proseed	XT 90-90	RR2XT	0.9	9/28	1.5	2,659	56.5	17.5	35.1	74.8	--
REA	RX0929	RR2XT	0.9	9/21	1.5	2,590	56.5	17.4	35.7	68.2	76.1
REA	RX1030	RR2XT	1	9/24	1.3	2,449	56.0	18.0	35.2	73.9	--
REA	RX1439	RR2XT	1.4	10/1	2.3	2,329	56.5	18.0	35.2	71.9	80.4
REA	RX1529	RR2XT	1.5	10/5	1.3	2,655	55.9	18.0	35.1	76.2	--
Mean				9/27	2.4	2,472	56.0	17.7	34.6	70.1	73.5
CV %				2.8	45.8	9.6	9.4	9.3	9.3	16.4	--
LSD 0.05				4.6	1.5	336	7.4	2.3	4.5	16.1	--
LSD 0.10				3.9	1.3	281	6.2	1.9	3.8	13.4	--

Planted: May 30. Harvested: Oct. 28 and 29. Previous crop: field corn.

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

Table 18. 2019 Soybean - Irrigated, Conventional and Liberty Link - 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 2019 3-yr. ---(bu/a)---	
Conventional										
Brushvale	BS1146	1.1	9/18	3.3	2,391	55.7	17.8	36.3	64.6	--
Brushvale	BS1512	1.3	9/24	3.0	2,509	56.3	17.6	36.2	67.0	--
NDSU	Ashtabula	0.4	9/19	6.0	2,495	56.3	19.1	34.0	58.0	62.2
NDSU	ND Benson	0.4	9/23	4.0	2,753	57.2	18.1	35.6	54.7	60.2
NDSU	ND Stutsman	0.7	9/21	4.3	2,531	56.6	18.3	34.1	67.7	79.5
NDSU	Sheyenne	0.7	9/20	4.3	2,578	57.4	18.2	34.2	72.4	75.2
Richland	MK0508	0.8	9/20	7.5	5,017	58.1	17.3	34.1	37.2	44.2
Richland	MK0603	0.6	9/21	7.5	4,541	56.1	17.2	35.3	53.4	56.0
Richland	MK1016	1	9/22	6.5	4,751	57.1	16.4	36.3	43.1	65.0
Richland	MK146	1.1	9/23	2.8	2,385	56.2	17.8	36.6	68.4	--
Richland	MK41	1.1	9/25	6.8	2,176	56.2	17.2	36.7	61.9	71.2
Richland	MK42	0.7	9/20	5.0	2,224	56.0	17.2	37.1	57.2	--
Richland	MK808CN	0.8	9/29	6.3	2,818	57.5	18.5	34.1	54.8	58.7
Richland	MK9101	1.1	10/1	4.3	1,884	56.6	18.4	34.5	59.1	65.0
Sevita	Emperor	1	9/20	4.3	1,838	56.9	18.0	36.2	66.6	--
Sevita	Genesis	0.9	9/28	6.5	2,177	58.9	18.5	34.7	72.2	--
Sevita	Panorama	0.3	10/2	4.5	2,163	55.6	17.9	36.4	61.0	--
Sevita	Skyline	1.1	10/5	6.5	2,201	56.5	17.8	37.6	68.2	--
Liberty Link										
Dairyland	DSR-0929L	0.9	9/20	3.3	2,162	55.3	18.2	35.4	72.2	--
Mean			9/24	5.1	2,715	56.7	17.9	35.5	61.0	63.7
CV %			2.5	24.3	2.8	3.2	1.0	0.8	10.6	--
LSD 0.05			4.1	1.8	110	2.6	0.2	0.4	9.0	--
LSD 0.10			3.5	1.5	92	2.2	0.2	0.3	7.5	--

Planted: May 30. Harvested: Oct. 28 and 29. Previous crop: field corn.

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

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

Table 19. 2019 Soybean - Conventional and Liberty Link - 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 2019 3-yr. ---(bu/a)---	
Conventional											
NDSU	Ashtabula	0.4	9/22	3	3.8	36	56.2	17.0	36.2	62.6	58.1
NDSU	ND Benson	0.4	9/25	2	2.0	35	56.7	16.0	38.0	50.8	57.0
NDSU	ND Henson	0	9/20	3	4.0	32	57.4	17.2	35.7	51.6	54.5
NDSU	ND Stutsman	0.7	9/28	1	3.3	32	57.0	16.4	35.9	58.0	61.2
NDSU	ND-Rolette	0.9	9/20	3	1.8	34	57.1	16.7	36.0	52.9	55.7
NDSU	Sheyenne	0.7	9/26	3	2.3	34	56.8	16.4	35.5	58.4	60.6
Richland	MK0249	0.2	9/23	3	3.0	33	56.8	15.4	36.9	46.3	50.2
Richland	MK0508	0.8	9/29	2	7.0	36	57.7	14.9	38.3	43.3	50.2
Richland	MK0603	0.6	10/1	3	7.5	34	56.7	14.0	39.2	39.5	46.1
Richland	MK1016	1	10/4	3	6.3	31	56.6	15.0	38.4	39.8	48.5
Richland	MK146	1.1	10/4	2	2.8	32	55.4	16.3	37.7	55.1	--
Richland	MK41	1.1	9/25	2	5.5	35	56.1	15.0	38.8	56.5	58.5
Richland	MK42	0.7	9/26	3	2.5	32	56.8	14.8	39.7	54.1	--
Richland	MK808CN	0.8	9/27	3	4.0	38	56.5	16.6	36.6	61.2	63.3
Richland	MK9101	1.1	10/4	2	4.5	34	56.0	16.4	--	59.8	57.6
U of M	MN0083	--	9/20	3	3.8	37	56.3	16.1	37.2	51.0	--
U of M	MN0810CN	0.8	10/1	2	3.8	36	55.8	15.5	38.7	50.3	--
Liberty Link											
Dairyland	DSR-0929L	0.9	9/27	3	3.0	32	56.1	16.6	36.9	65.0	--
Latham	L0643L	0.6	9/26	3	3.5	34	56.5	15.9	35.5	62.1	--
Latham	L0842L	0.8	10/1	4	2.3	36	55.9	15.9	37.2	65.6	--
Mean			9/27	3	3.8	34	56.5	15.9	37.3	54.2	55.5
CV %			1.7	32.8	46.7	9.0	0.5	1.5	1.1	8.6	--
LSD 0.05			2.7	1.7	NS	NS	0.43	0.34	0.56	6.7	--
LSD 0.10			2.3	1.4	NS	3.6	0.36	0.28	0.46	5.6	--

Planted: June 5. Harvested: Oct. 21. Previous crop: spring wheat.

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

Table 20. 2019 Soybean - Enlist, GT, RR and Xtend - LaMoure (Carrington REC) - Authors, T. Helms and B. Schatz.

Company/ Brand	Variety	Herbicide Trait	Maturity Group	Maturity ¹ (date)	Seed Yield (bu/a)		
					2019	2-yr. Avg.	3-yr. Avg.
Dairyland	DSR-0717E	Enlist	0.7	9/26	53.3	--	--
Dairyland	DSR-0847E	Enlist	0.8	10/3	50.5	--	--
Dairyland	DSR-0988/R2Y	RR2Y	0.9	9/30	53.7	53.1	55.6
Dairyland	DSR-1120/R2Y	RR2Y	1.1	10/5	54.3	53.3	53.8
Dyna-Gro	S07XT28	RR2XT	0.7	9/26	54.3	51.9	51.9
Dyna-Gro	S09XT50	RR2XT	0.9	9/28	51.4	--	--
Dyna-Gro	S11EN40	Enlist	1.1	10/3	54.5	--	--
Dyna-Gro	S11XT78	RR2XT	1.1	9/29	54.7	53.3	56.0
Genesis	G1041E	Enlist	1.0	9/28	47.2	46.7	--
Genesis	G1141E	Enlist	1.2	10/5	48.1	--	--
Genesis	G1180GL	LLGT27	1.1	10/4	55.7	--	--
Integra	20775	RR2Y	0.7	9/28	51.8	--	--
Integra	50990N	RR2XT	0.9	9/26	54.2	--	--
Integra	51229N	RR2XT	1.2	10/2	54.7	--	--
Latham	L0883R2X	RR2XT	0.8	9/29	50.5	--	--
Latham	L0982R2	RR2Y	0.9	10/3	55.7	--	--
Latham	L0995E3	Enlist	0.9	10/1	51.1	--	--
Latham	L1039R2X	RR2XT	1.0	9/28	51.2	--	--
Legacy	LS-0830N RR2X	RR2XT	0.9	9/28	55.4	--	--
Legacy	LS-1138N RR2X	RR2XT	1.1	10/1	53.4	51.7	54.9
Legacy	LS-1220N E3	Enlist	1.2	10/5	53.9	--	--
LG Seeds	C1000RX	RR2XT	1.0	10/1	52.4	53.1	--
LG Seeds	LGS0735RX	RR2XT	0.7	9/27	50.7	--	--
LG Seeds	LGS1118RX	RR2XT	1.1	10/3	54.1	--	--
P3 Genetics	19EN06	Enlist	0.6	9/26	43.8	--	--
P3 Genetics	19EN07	Enlist	0.7	9/26	52.4	--	--
P3 Genetics	19EN10	Enlist	1.0	9/29	49.7	--	--
Proseed	EL 80-93	Enlist	0.9	9/28	49.3	--	--
Proseed	EL 81-13	Enlist	1.1	10/1	49.2	--	--
Proseed	EL 91-23	Enlist	1.2	10/4	50.7	--	--
Proseed	EL 91-33	Enlist	1.3	10/5	50.7	--	--
Proseed	XT 90-90	RR2XT	0.9	9/30	52.9	--	--
Mean				10/1	52.1	51.9	54.4
CV %				2.3	6.3	--	--
LSD 0.05				2.2	5.1	--	--
LSD 0.10				1.9	4.3	--	--

Planted: May 29.

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

Table 21. 2019 Soybean - Conventional and Liberty Link - LaMoure (Carrington REC) - Authors, T. Helms and B. Schatz.

Company/ Brand	Variety	Maturity Group	Maturity ¹ (date)	Seed Yield	
				2019	3-yr. Avg.
Conventional				------(bu/a)-----	
Brushvale	BS1146	1.1	10/3	37.3	--
Brushvale	BS1512	1.3	10/4	47.1	--
NDSU	ND Benson	0.4	9/23	38.4	43.8
NDSU	ND Stutsman	0.7	9/25	36.7	52.5
Richland	MK0508	0.8	9/25	18.3	31.2
Richland	MK0603	0.6	9/25	30.4	42.1
Richland	MK1016	1.0	9/26	23.4	35.9
Richland	MK146	1.1	10/2	39.7	--
Richland	MK41	1.1	9/26	42.0	48.6
Richland	MK42	0.7	9/25	33.5	42.5
Richland	MK808CN	0.8	9/25	25.4	43.7
Richland	MK9101	1.1	9/27	32.8	38.6
Liberty Link					
Dairyland	DSR-0929L	0.9	9/26	41.3	--
Latham	L1238L	1.2	10/4	43.9	--
Mean			9/28	35.0	42.1
CV %			2.9	13.2	--
LSD 0.05			2.0	7.5	--
LSD 0.10			2.0	6.3	--

Planted: May 29.

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

Table 22. 2019 Soybean - Enlist, GT, RR and Xtend - Wishek (Carrington REC) - Authors, M. Ostlie, B. Schatz and T. Indergaard.

Company/ Brand	Variety	Trait	Maturity		Pod	Plant	Plant	Seeds/	Test	Seed	Seed	Seed Yield	
			Group	Maturity ¹ (date)	Ht (inch)	Ht (inch)	Lodge ² (0-9)	Pound	Weight (lb/bu)	Oil (%)	Protein (%)	2019	2-yr. Avg. ----- (bu/a) -----
Integra	40129	Enlist	0.1	9/22	2	30	2.3	3,322	55.4	16.4	36.3	38.3	--
Integra	40829	Enlist	0.8	10/2	2	33	2.8	2,922	54.4	17.0	35.6	53.8	--
Integra	50510N	RR2XT	0.5	10/6	3	32	3.0	2,369	53.7	16.4	35.7	43.9	--
Integra	50629N	RR2XT	0.6	10/5	2	32	3.0	3,178	55.1	16.1	34.3	39.4	--
LG Seeds	C1000RX	RR2XT	1.0	10/7	2	32	3.5	2,802	55.0	16.6	35.4	51.5	43.8
LG Seeds	LGS0735RX	RR2XT	0.7	10/5	2	33	3.0	2,643	55.3	16.3	35.1	51.7	--
LG Seeds	LGS1118RX	RR2XT	1.1	10/7	3	31	6.5	2,890	54.7	16.8	33.2	39.4	--
LG Seeds	LGS1337RX	RR2XT	1.3	10/7	3	35	4.3	2,829	54.6	17.2	34.3	46.7	43.6
LG Seeds	LGS1575RX	RR2XT	1.5	10/9	3	32	3.8	2,977	54.2	15.8	35.7	42.9	43.9
NDSU	ND17009GT	GT	0.9	9/19	2	32	1.3	2,587	55.9	17.4	36.7	39.7	36.6
NDSU	ND18008GT	GT	0.8	9/18	2	28	1.8	3,102	55.3	17.1	36.7	30.3	--
P3 Genetics	1906E	Enlist	0.6	10/6	2	29	6.0	3,441	55.1	17.0	35.3	37.1	--
P3 Genetics	1910E	Enlist	1.0	10/7	3	33	3.3	2,909	55.3	16.4	35.5	44.8	--
Proseed	EL 80-93	Enlist	0.9	10/8	3	35	4.3	2,998	54.4	16.1	36.2	47.9	--
Proseed	EL 81-13	Enlist	1.1	10/8	3	33	4.5	2,653	54.0	16.0	36.1	43.9	--
Proseed	EL 91-23	Enlist	1.2	10/9	3	37	5.3	3,351	52.8	14.7	37.0	33.8	--
Proseed	EL 91-33	Enlist	1.3	10/9	3	35	7.0	2,748	52.8	16.2	35.1	36.0	--
Proseed	XT 90-90	RR2XT	0.9	10/6	2	32	3.0	2,831	54.9	15.9	35.4	48.4	--
REA	RX0520	RR2XT	0.5	10/6	3	33	2.3	2,384	55.0	15.5	36.5	41.0	--
REA	RX0719	RR2XT	0.7	10/5	2	32	1.5	2,699	55.3	16.2	35.6	47.4	42.9
REA	RX0929	RR2XT	0.9	10/5	3	33	1.8	2,759	55.4	16.1	35.9	54.8	51.9
REA	RX1030	RR2XT	1.0	10/6	2	31	2.5	2,652	54.8	16.8	34.1	48.9	--
Mean				10/3	2	33	3.5	2,866	54.7	16.4	35.5	43.7	43.8
CV %				1.5	27	7.1	47	5	1.5	1.7	1.8	12	--
LSD 0.05				2.6	NS	3.2	2.2	186	1.2	0.4	0.9	7.3	--
LSD 0.10				2.2	NS	2.7	1.8	156	1	0.3	0.8	6.1	--

See Table 23 footnotes.

Table 23. 2019 Soybean - Conventional - Wishek (Carrington REC) - Authors, M. Ostlie, B. Schatz and T. Indergaard.

Company/ Brand	Variety	Maturity		Pod	Plant	Plant	Seeds/	Test	Seed	Seed	Seed Yield	
		Group	Maturity ¹ (date)	Ht (inch)	Ht (inch)	Lodge ² (0-9)	Pound	Weight (lb/bu)	Oil (%)	Protein (%)	2019	3-yr. Avg. ----- (bu/a) -----
NDSU	Ashtabula	0.4	10/1	3	31	2.0	2,455	55.8	17.1	36.8	33.6	35.9
NDSU	ND Benson	0.4	10/2	2	29	1.5	2,822	56.6	16.0	38.0	35.1	36.9
NDSU	ND Henson	0.0	9/20	2	25	3	2,968	56.9	17.5	35.0	41.8	39.1
NDSU	ND Stutsman	0.7	10/2	3	31	2.0	2,640	56.6	16.6	36.2	40.9	42.7
NDSU	ND-Rolette	0.9	9/22	3	28	0.3	3,025	56.6	17.4	35.6	31.4	--
NDSU	Sheyenne	0.7	9/28	3	29	1.5	2,861	56.2	16.9	35.3	37.9	41.8
Richland	MK0508	0.8	9/28	3	30	6.0	5,265	56.9	16.2	36.1	33.3	34.3
Richland	MK0603	0.6	10/1	2	29	2.8	4,948	56.0	16.0	36.4	26.9	32.1
Richland	MK1016	1.0	9/30	2	30	3.0	5,277	56.9	16.1	35.5	28.4	33.6
Richland	MK146	1.1	10/7	2	30	3.3	2,616	55.3	16.6	37.0	41.9	--
Richland	MK41	1.1	9/30	2	31	2.8	2,587	56.6	15.0	38.9	45.2	41.0
Richland	MK42	0.7	9/29	3	34	1.3	2,450	56.6	15.1	38.8	37.8	39.7
Richland	MK808CN	0.8	9/26	2	29	1.5	3,138	56.8	17.7	34.4	36.5	42.2
Richland	MK9101	1.1	10/3	4	38	3.8	2,330	55.3	--	--	37.3	38.2
U of Minn	MN0810CN	0.8	10/1	3	33	2.3	3,497	55.9	16.2	38.1	38.2	--
Mean			9/28	3	30	2.2	3,069	56.2	16.6	36.2	37.3	38.1
CV %			2.9	30	8.5	83	10.0	1	3.1	3.0	13.3	--
LSD 0.05			4.8	1.1	3.6	2.6	431	0.8	0.7	1.5	7.0	--
LSD 0.10			4	0.9	3	2.1	361	0.7	0.6	1.3	5.9	--

Planted: June 3. Harvested: Nov. 6. Previous crop: spring wheat.

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

Table 24. 2019 Soybean - Enlist, GT, RR and Xtend - Langdon - Authors, B. Hanson, T. Hakanson and L. Henry (Page 1 of 2).

Company/ Brand	Variety	Herbicide Trait	Maturity Group	Maturity ¹ (date)	Plant Height (inch)	Seed Oil (%)	Seed Protein (%)	Seed Yield		
								2019	2-yr. Avg. ------(bu/a)-----	2-site Avg. ²
Allegiant	01E23	Enlist	0.1	9/22	28	14.7	31.4	52.9	--	45.8
Allegiant	009E71	Enlist	00.9	9/21	29	14.6	30.7	51.4	--	--
Allegiant	007X32N	RR2XT	00.7	9/13	30	14.5	32.1	49.8	49.0	44.5
Allegiant	008X30N	RR2XT	00.8	9/16	32	15.6	32.1	45.4	47.2	42.2
Allegiant	009X08	RR2XT	00.9	9/16	32	14.5	32.9	54.1	52.2	48.2
Allegiant	009X41	RR2XT	00.9	9/22	28	15.2	32.3	49.7	--	43.8
Allegiant	07X30N	RR2XT	0.7	9/29	32	14.4	31.7	60.2	--	--
BioGene	BG8000RR2X	RR2XT	00.9	9/16	32	15.3	32.4	53.4	--	--
BioGene	BG8007RR2X	RR2XT	00.7	9/15	30	15.2	31.4	45.2	--	--
BioGene	BG8008RR2X	RR2XT	00.8	9/15	29	14.7	32.4	46.5	--	--
Dahlman	1001E3	Enlist	0.1	9/20	26	14.7	32.1	48.2	--	41.7
Dahlman	60009X	RR2XT	00.9	9/21	27	15.1	33.3	50.3	--	45.0
Dyna-Gro	S005XT38	RR2XT	00.5	9/10	30	15.4	29.9	49.6	49.2	44.1
Dyna-Gro	S007XT27	RR2XT	00.7	9/15	31	15.0	31.5	52.0	50.7	44.0
Dyna-Gro	S009XT49	RR2XT	00.9	9/15	31	15.0	31.7	52.5	50.9	46.4
Dyna-Gro	S009XT68	RR2XT	00.9	9/17	32	13.8	32.8	54.1	51.6	47.9
Golden H.	GH00866	RR2Y	00.8	9/13	32	15.9	31.7	52.2	50.3	46.4
Golden H.	GH0145X	RR2XT	0.1	9/15	32	14.9	31.2	50.1	49.3	44.6
Hefty	H008X8	RR2XT	00.8	9/16	31	15.4	31.8	49.7	49.6	44.0
Hefty	H02X9	RR2XT	0.2	9/19	32	15.0	31.3	53.1	50.9	49.9
Integra	20097	RR2Y	00.9	9/20	33	15.3	32.2	54.6	52.7	46.7
Integra	40129	Enlist	0.1	9/22	27	16.0	29.6	41.3	--	37.8
Integra	50001	RR2XT	0.0	9/23	28	14.8	32.3	52.8	--	43.7
Integra	40089N	Enlist	00.8	9/21	32	15.2	31.1	56.4	--	48.3
Legacy	LS-00639N RR2X	RR2XT	00.6	9/13	30	15.2	31.7	50.1	--	44.8
Legacy	LS-00930 RR2X	RR2XT	00.9	9/22	27	15.1	32.1	55.4	--	46.6
Legacy	LS-00829 E3	Enlist	00.8	9/22	28	15.4	31.2	44.4	--	39.5
Legacy	LS-0239N RR2X	RR2XT	0.2	9/22	30	14.4	32.2	56.8	53.4	51.2
Legend	LS 005E953N	Enlist	00.5	9/23	30	15.3	31.8	47.4	--	--
Legend	LS 007X956N	RR2XT	00.7	9/19	31	14.4	32.8	48.3	48.6	--
Legend	LS 009E955N	Enlist	00.9	9/21	30	15.4	31.1	44.9	--	--
Legend	LS 009X852N	RR2XT	00.9	9/18	31	15.5	31.6	51.7	49.8	--
Legend	LS 02E963	Enlist	0.2	9/22	26	14.8	31.8	51.2	--	--
LG Seeds	LGS00663RX	RR2XT	00.6	9/16	28	14.8	31.9	50.6	46.4	43.5
LG Seeds	LGS00899RX	RR2XT	00.8	9/17	32	15.1	31.5	51.8	48.9	45.4
LG Seeds	LGS0111RX	RR2XT	0.1	9/22	33	14.8	33.3	56.4	52.5	50.6
NDSU	ND17009GT	GT	00.9	9/15	31	15.5	34.2	46.0	44.7	41.6
NDSU	ND18008GT	GT	00.8	9/12	29	15.7	32.4	42.3	40.5	37.0
NorthStar	NS 60065NXR2	RR2XT	00.6	9/17	31	14.1	33.5	47.6	--	41.5
NorthStar	NS 90084NE3	Enlist	00.7	9/23	29	15.2	31.3	50.5	--	44.0
NorthStar	NS 90094E3	Enlist	00.9	9/21	30	15.5	31.9	46.7	--	39.7
NorthStar	NS 90214E3	Enlist	0.1	9/21	27	14.4	32.5	51.1	--	44.6
Peterson	18X008	RR2XT	00.8	9/14	29	15.2	31.4	51.5	50.5	46.0
Peterson	19EN008	Enlist	00.8	9/21	31	15.2	32.3	53.9	--	44.8
Peterson	20X01	RR2XT	0.1	9/24	27	15.1	32.4	53.3	--	45.0
Pioneer	P006A37X	RR2XT	00.6	9/11	27	16.0	30.0	47.9	45.9	--
Pioneer	P00A49X	RR2XT	0.0	9/23	34	15.2	31.3	53.4	49.8	45.1
Pioneer	P01A84X	RR2XT	0.1	9/23	30	15.8	30.1	52.8	--	45.7
Pioneer	P03A17X	RR2XT	0.2	9/25	28	15.2	32.0	46.2	--	42.7
Proseed	50-10	RR2Y	0.1	9/17	32	15.6	32.2	53.2	--	47.7
Proseed	XT 60-09	RR2XT	00.9	9/16	34	14.3	33.6	54.7	51.2	47.1
Proseed	XT 80-20N	RR2XT	0.2	9/21	30	15.7	30.5	55.9	52.3	48.6
Mean				9/17	30	15.1	31.8	50.6	49.4	44.5
CV %				1.3	6.5	--	--	8.1	--	--
LSD 0.05				2.2	2.7	--	--	5.7	--	--
LSD 0.10				1.9	2.3	--	--	4.8	--	--

Table 24. 2019 Soybean - Enlist, GT, RR and Xtend - Langdon - Authors, B. Hanson, T. Hakanson and L. Henry (Page 2 of 2).

Company/ Brand	Variety	Herbicide Trait	Maturity Group	Maturity ¹ (date)	Plant Height (inch)	Seed Oil (%)	Seed Protein (%)	Seed Yield		
								2019	2-yr. Avg.	2-site Avg. ² (bu/a)
Proseed	XT 90-06	RR2XT	00.6	9/12	30	15.4	30.2	49.2	--	42.7
REA	RX00749	RR2XT	00.7	9/15	30	14.7	31.8	45.2	45.7	39.8
REA	RX00810	RR2XT	00.8	9/15	25	15.2	31.6	52.4	--	42.7
REA	RX0228	RR2XT	0.2	9/21	35	15.5	32.1	53.5	50.3	47.8
Stine	01EA63	Enlist	00.9	9/22	28	14.7	32.3	50.7	--	43.4
Syng NK	S006-R7X	RR2XT	00.6	9/11	28	15.5	31.3	47.3	--	41.9
Syng NK	S007-Y4	RR2Y	00.7	9/10	28	15.6	29.7	48.4	49.4	--
Syng NK	S008-N2	RR2Y	00.8	9/10	30	15.8	32.0	52.0	--	--
Thunder	36008 R2YN	RR2Y	00.8	9/17	32	14.4	33.6	56.3	--	--
Thunder	3601R2Y	RR2Y	0.1	9/17	31	15.6	32.8	47.3	--	43.9
Thunder	ASTRO	RR2Y	00.8	9/19	33	14.4	33.5	49.9	50.4	45.1
Thunder	SB8001	RR2XT	0.1	9/22	26	15.2	33.1	54.2	--	44.9
Thunder	SB88007N	RR2XT	00.7	9/14	31	15.5	31.7	50.6	50.2	44.7
Thunder	TE7902	Enlist	0.2	9/23	27	14.4	31.4	49.9	--	43.2
Mean				9/17	30	15.1	31.8	50.6	49.4	44.5
CV %				1.3	6.5	--	--	8.1	--	--
LSD 0.05				2.2	2.7	--	--	5.7	--	--
LSD 0.10				1.9	2.3	--	--	4.8	--	--

Planted: May 20. Harvested: Oct. 9.

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. 2019 Soybean - Conventional - Langdon - Authors, B. Hanson, T. Hakanson and L. Henry.**

Company/ Brand	Variety	Maturity Group	Maturity ¹ (date)	Plant Height (inch)	Seed Oil (%)	Seed Protein (%)	Seed Yield			
							2019	2-yr. Avg.	2-site Avg. ² (bu/a)	
Conventional										
Caldbeck	ATSOY062234	00.6	9/3	28	15.7	31.4	38.4	--	--	--
Caldbeck	ATSOY080668	00.6	9/1	22	16.8	31.8	37.5	--	--	--
Caldbeck	ATSOY082500	00.4	9/5	26	16.1	31.4	31.7	--	--	--
Caldbeck	ATSOY0825X2	00.7	9/13	24	13.3	33.6	39.3	--	--	--
Caldbeck	ATSOY102408	00.6	9/5	27	15.4	32.3	36.8	--	--	--
Caldbeck	ATSOY110978	00.6	9/4	28	16.4	31.1	37.7	--	--	--
Caldbeck	ATSOY121302	00.4	8/29	28	16.4	30.5	34.0	--	--	--
NDSU	ND Benson	0.4	9/23	25	16.0	32.9	41.1	--	--	32.9
NDSU	ND Henson	0.0	9/15	23	16.4	31.4	44.2	47.2	47.2	32.7
NDSU	ND Rolette	00.9	9/16	25	16.5	30.4	43.6	47.0	47.0	32.3
Richland	MK0249	0.2	9/22	24	15.0	31.8	34.4	38.2	--	--
Sevita	Astor	0.2	9/16	24	15.9	33.5	40.6	--	--	36.8
Sevita	Meteor	00.8	9/13	25	15.0	34.2	36.8	--	--	26.9
Roundup Ready Check										
	RR2Y Check #1	00.6	9/10	26	15.6	30.2	40.5	45.1	45.1	32.2
	RR2Y Check #2	00.8	9/11	26	15.2	30.9	47.1	49.1	49.1	40.2
	RR2Y Check #3	00.9	9/12	28	14.9	32.0	42.0	47.4	47.4	37.6
	RR2Y Check #4	0.2	9/13	25	15.3	31.8	45.9	--	--	41.7
Mean			9/14	25	15.8	31.6	42.1	47.4	47.4	34.8
CV %			1.4	7.5	1.8	2.2	6.3	--	--	--
LSD 0.05			2.3	2.6	0.6	1.4	3.7	--	--	--
LSD 0.10			1.9	2.2	0.5	1.2	3.1	--	--	--

Planted: May 20. Harvested: Oct. 9.

¹ Maturity is date of 95% brown or tan pods.² A 2-site average of conventional trials at Langdon REC and Walsh County (Park River).

Table 26. 2019 Soybean - Enlist, GT, RR and Xtend - Park River (Langdon REC) - Authors, B. Hanson, T. Hakanson and L. Henry (1 of 2).

Company/		Herbicide	Maturity		Plant	Seed Yield		
Brand	Variety	Trait	Group	Maturity ¹	Height	2019	2-yr. Avg.	2-site avg. ²
				(date)	(inch)	------(bu/a)-----		
Dahlman	1003E3	Enlist	0.3	9/19	16	25.2	--	34.8
Dahlman	6903XN	RR2XT	0.3	9/14	20	38.0	--	44.9
Dairyland	DSR-0200/R2Y	RR2Y	0.2	9/6	21	31.3	41.4	40.5
Dairyland	DSR-C999/R2Y	RR2Y	00.9	9/11	20	34.5	47.6	41.1
Dyna-Gro	S009XT68	RR2XT	00.9	9/7	20	29.4	40.6	41.4
Dyna-Gro	S03XT29	RR2XT	0.3	9/13	21	36.9	44.4	45.1
Dyna-Gro	S04XT77	RR2XT	0.4	9/15	17	30.0	44.2	41.8
Golden H.	GH0145X	RR2XT	0.1	9/9	19	31.7	--	42.1
Golden H.	GH0308X	RR2XT	0.3	9/14	18	34.2	--	42.8
Hefty	H008X8	RR2XT	00.8	9/4	22	30.9	--	37.5
Hefty	H02X9	RR2XT	0.2	9/12	20	33.8	--	34.8
Hefty	H03X8	RR2XT	0.3	9/16	21	30.0	44.3	41.5
Hefty	H03E9	Enlist	0.3	9/18	17	23.3	--	36.5
Integra	40209	Enlist	0.2	9/14	17	31.0	--	35.7
Integra	50001	RR2XT	0.0	9/12	18	30.4	--	37.9
Integra	50309N	RR2XT	0.3	9/13	20	35.0	46.1	42.1
Legacy	LS-0239N RR2X	RR2XT	0.2	9/13	21	38.0	47.0	48.0
Legacy	LS-0337N RR2X	RR2XT	0.3	9/15	20	33.3	44.1	44.4
Legacy	LS-0429 E3	Enlist	0.4	9/14	20	34.7	44.9	42.7
Legacy	LS-0438 RR2X	RR2XT	0.4	9/15	20	33.8	--	45.1
LG Seeds	LGS00663RX	RR2XT	00.6	9/5	18	25.3	43.3	35.0
LG Seeds	LGS00899RX	RR2XT	00.8	9/6	20	28.7	44.5	39.8
LG Seeds	LGS0111RX	RR2XT	0.1	9/14	22	35.5	45.1	43.7
LG Seeds	LGS0355RX	RR2XT	0.3	9/13	21	36.9	42.0	46.2
LG Seeds	LGS0400RX	RR2XT	0.4	9/16	23	39.3	46.3	45.9
NDSU	ND17009GT	GT	00.9	9/10	20	26.2	40.6	35.6
NDSU	ND18008GT	GT	00.8	9/4	16	20.0	34.7	27.8
NorthStar	NS 60264NXR2	RR2XT	0.2	9/12	20	36.9	47.6	--
NorthStar	NS 90094E3	Enlist	00.9	9/15	19	28.5	--	--
NorthStar	NS 90214E3	Enlist	0.1	9/14	18	28.4	--	--
NorthStar	NS 90334E3	Enlist	0.3	9/16	19	30.4	--	--
Peterson	18X008	RR2XT	00.8	9/6	22	29.5	40.5	--
Peterson	19EN008	Enlist	00.8	9/11	21	30.3	--	--
Peterson	20EN02	Enlist	0.2	9/16	17	31.8	--	37.2
Peterson	20EN03	Enlist	0.3	9/16	20	28.8	--	36.7
Pioneer	P00A49X	RR2XT	0.0	9/9	19	31.1	--	--
Pioneer	P01A84X	RR2XT	0.1	9/11	22	32.1	--	--
Pioneer	P03A17X	RR2XT	0.2	9/15	20	35.6	--	--
Proseed	50-10	RR2Y	0.1	9/6	22	34.5	--	44.0
Proseed	BX 80-35	LLGT27	0.3	9/16	19	37.9	--	48.4
Proseed	XT 60-40	RR2XT	0.4	9/15	20	31.3	--	42.8
Proseed	XT 60-09	RR2XT	00.9	9/6	24	34.6	44.5	44.4
Proseed	XT 80-20N	RR2XT	0.2	9/13	20	35.8	45.0	42.4
REA	RX00810	RR2XT	00.8	9/4	17	25.6	--	32.5
REA	RX0228	RR2XT	0.2	9/7	21	28.0	42.5	37.8
REA	RX0330	RR2XT	0.3	9/16	19	31.2	--	39.0
Mean				9/11	19	31.6	43.9	40.5
CV %				1.3	10.7	9.4	--	--
LSD 0.05				2.0	2.9	4.2	--	--
LSD 0.10				1.7	2.4	3.5	--	--

Table 26. 2019 Soybean - Enlist, GT, RR and Xtend - Park River (Langdon REC) - Authors, B. Hanson, T. Hakanson and L. Henry (2 of 2).

Company/		Herbicide	Maturity		Plant	Seed Yield		
Brand	Variety	Trait	Group	Maturity ¹	Height	2019	2-yr. Avg.	2-site avg. ²
				(date)	(inch)	------(bu/a)-----		
Syng NK	S01-C4X	RR2XT	0.1	9/9	21	32.2	47.0	42.1
Syng NK	S02-E3	Enlist	0.2	9/14	17	28.5	--	--
Syng NK	S02-F9X	RR2XT	0.2	9/7	18	32.0	--	41.7
Syng NK	S03-G9	RR2Y	0.3	9/14	19	35.5	46.7	--
Syng NK	S03-S6X	RR2XT	0.3	9/10	21	28.2	--	40.0
Thunder	SB8001	RR2XT	0.1	9/9	18	30.2	--	37.9
Thunder	SB87009	RR2XT	0.9	9/7	20	31.0	40.6	--
Thunder	SB8903N	RR2XT	0.3	9/12	20	35.7	45.8	45.1
Thunder	3601 R2Y	RR2Y	0.1	9/7	23	32.4	43.6	42.5
Thunder	TE7003	Enlist	0.3	9/15	18	30.9	--	39.5
Thunder	TE7902	Enlist	0.2	9/15	19	29.1	--	35.7
Mean				9/11	19	31.6	43.9	40.5
CV %				1.3	10.7	9.4	--	--
LSD 0.05				2.0	2.9	4.2	--	--
LSD 0.10				1.7	2.4	3.5	--	--

Planted: May 21. Harvested: Nov. 7.

¹Maturity is date of 95% brown or tan pods.²2-site average Walsh County (Park River) and Nelson County (Pekin).**Table 27. 2019 Soybean - Conventional - Park River (Langdon REC) - Authors, B. Hanson, T. Hakanson and L. Henry.**

Company/		Maturity		Plant	Seed Yield		
Brand	Variety	Group	Maturity ¹	Height	2019	2-yr. Avg.	2-site Avg. ²
			(date)	(inch)	------(bu/a)-----		
Conventional							
NDSU	ND Benson	0.4	9/24	18	24.7	--	32.9
NDSU	ND Henson	0.0	9/16	16	21.1	36.6	32.7
NDSU	ND Rolette	0.9	9/17	15	21.0	--	32.3
Sevita	Astor	0.2	9/19	17	32.9	--	36.8
Sevita	Meteor	0.8	9/14	13	17.0	--	26.9
Roundup Ready Check							
	RR2Y Check#1	0.6	9/9	16	23.8	37.0	32.2
	RR2Y Check#2	0.8	9/9	16	33.2	--	40.2
	RR2Y Check#3	0.9	9/10	18	33.2	41.2	37.6
	RR2Y Check#4	0.2	9/12	19	37.5	--	41.7
Mean			9/17	16	25.7	39.1	34.8
CV %			1.4	11.9	17.1	--	--
LSD 0.05			2.3	2.7	6.2	--	--
LSD 0.10			1.9	2.3	5.2	--	--

Planted: May 21. Harvested: Nov. 7.

¹Maturity is date of 95% brown or tan pods.²A 2-site average of conventional trials at Langdon REC and Walsh County (Park River).

Table 28. 2019 Soybean - Enlist, GT, RR and Xtend - Cavalier (Langdon REC) - Authors, B. Hanson, T. Hakanson and L. Henry (1 of 2).

Company/ Brand	Variety	Herbicide Trait	Maturity Group	Maturity ¹ (date)	Plant Height (inches)	Seed Yield (bu/a)		
						2019	2-yr. Avg.	2-site Avg. ²
Allegiant	01E23	Enlist	0.1	9/12	23	38.7	--	45.8
Allegiant	007X32N	RR2XT	00.7	9/6	26	39.1	47.0	44.5
Allegiant	008X30N	RR2XT	00.8	9/8	29	38.9	48.1	42.2
Allegiant	009X08	RR2XT	00.9	9/9	29	42.2	50.7	48.2
Allegiant	009X41	RR2Y	0.1	9/13	23	37.9	--	43.8
Dahlman	1001E3	Enlist	0.1	9/13	23	35.1	--	41.7
Dahlman	60009X	RR2XT	00.9	9/11	23	39.7	--	45.0
Dyna-Gro	S005XT38	RR2XT	00.5	9/6	26	38.5	44.9	44.1
Dyna-Gro	S007XT27	RR2XT	00.7	9/7	28	36.0	44.8	44.0
Dyna-Gro	S009XT49	RR2XT	00.9	9/8	28	40.2	51.4	46.4
Dyna-Gro	S009XT68	RR2XT	00.9	9/9	30	41.6	47.7	47.9
Golden H.	GH00866	RR2Y	00.8	9/6	27	40.5	47.2	46.4
Golden H.	GH0145X	RR2XT	0.1	9/10	28	39.1	49.2	44.6
Hefty	H008X8	RR2XT	00.8	9/7	28	38.3	46.8	44.0
Hefty	H02X9	RR2XT	0.2	9/14	29	46.6	51.2	49.9
Integra	20097	RR2Y	00.9	9/7	27	38.7	46.0	46.7
Integra	40129	Enlist	0.1	9/12	24	34.3	--	37.8
Integra	50001	RR2XT	0.0	9/14	22	34.6	--	43.7
Integra	40089N	Enlist	00.8	9/11	29	40.2	--	48.3
Legacy	LS-00639NRR2X	RR2XT	00.6	9/5	27	39.4	--	44.8
Legacy	LS-00829E3	E3	00.8	9/12	24	34.6	--	39.5
Legacy	LS-00930RR2X	RR2XT	00.9	9/13	21	37.8	--	46.6
Legacy	LS-0239NRR2X	RR2XT	0.2	9/12	27	45.6	50.3	51.2
LG Seeds	LGS00663RX	RR2XT	00.6	9/8	26	36.3	44.8	43.5
LG Seeds	LGS00899RX	RR2XT	00.8	9/7	27	38.9	--	45.4
LG Seeds	LGS0111RX	RR2XT	0.1	9/13	31	44.7	50.6	50.6
NDSU	ND17009GT	GT	00.9	9/10	28	37.1	43.6	41.6
NDSU	ND18008GT	GT	00.8	9/5	25	31.7	37.6	37.0
NorthStar	NS60065NXR2	RR2XT	00.6	9/5	27	35.3	--	41.5
NorthStar	NS90084NE3	Enlist	00.7	9/11	29	37.4	--	44.0
NorthStar	NS90094E3	Enlist	00.9	9/11	25	32.7	--	39.7
NorthStar	NS90214E3	Enlist	0.1	9/14	23	38.1	--	44.6
Peterson	18X008	RR2XT	00.8	9/7	28	40.5	46.9	46.0
Peterson	19EN008	Enlist	00.8	9/10	28	35.7	--	44.8
Peterson	20X01	RR2XT	0.2	9/15	23	36.6	--	45.0
Pioneer	P00A49X	RR2XT	0.0	9/13	29	36.7	--	45.1
Pioneer	P01A84X	RR2XT	0.1	9/14	25	38.6	--	45.7
Pioneer	P03A17X	RR2XT	0.3	9/12	26	39.2	--	42.7
Proseed	50-10	RR2Y	0.1	9/7	28	42.2	--	47.7
Proseed	XT60-09	RR2XT	00.9	9/8	28	39.5	47.1	47.1
Proseed	XT80-20N	RR2XT	0.2	9/13	26	41.2	48.1	48.6
Proseed	XT90-06	RR2XT	00.6	9/4	27	36.2	--	42.7
REA	RX00749	RR2XT	00.7	9/5	27	34.4	43.0	39.8
REA	RX00810	RR2XT	00.8	9/6	22	32.9	--	42.7
REA	RX0228	RR2XT	0.2	9/10	29	42.1	50.1	47.8
Stine	01EA63	Enlist	00.9	9/14	22	36.1	--	43.4
Syng NK	S006-R7X	RR2XT	00.6	9/5	25	36.4	--	41.9
Mean				9/9	26	38.5	47.3	44.6
CV %				1.3	7.4	7.9	--	--
LSD 0.05				1.9	2.7	4.2	--	--
LSD 0.10				1.6	2.3	3.5	--	--

Table 28. 2019 Soybean - Enlist, GT, RR and Xtend - Cavalier (Langdon REC) - Authors, B. Hanson, T. Hakanson and L. Henry (2 of 2).

Company/ Brand	Variety	Herbicide Trait	Maturity Group	Maturity ¹ (date)	Height	Seed Yield		
						2019	2-yr. Avg.	2-yr. site Avg. ²
Syng NK	S01-C4X	RR2XT	0.1	9/10	29	42.4	48.8	--
Syng NK	S02-E3	Enlist	0.2	9/14	23	39.7	--	--
Syng NK	S02-F9X	RR2XT	0.2	9/11	25	43.0	--	--
Thunder	3601	RR2Y	0.1	9/7	29	40.4	45.8	43.9
Thunder	ASTRO	RR2Y	0.8	9/8	29	40.2	49.9	45.1
Thunder	SB8001	RR2XT	0.1	9/13	22	35.6	--	44.9
Thunder	SB87009	RR2XT	0.9	9/10	29	41.5	50.0	--
Thunder	SB88007N	RR2XT	0.7	9/6	28	38.8	46.5	44.7
Thunder	TE7902	Enlist	0.2	9/16	22	36.4	--	43.2
Mean				9/9	26	38.5	47.3	44.6
CV %				1.3	7.4	7.9	--	--
LSD 0.05				1.9	2.7	4.2	--	--
LSD 0.10				1.6	2.3	3.5	--	--

Planted: May 23. Harvested: Nov. 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 northern region. Langdon REC and Pembina County (Cavalier).

Table 29. 2019 Soybean - Enlist, GT, RR and Xtend - Pekin (Langdon REC) - Authors, B. Hanson, T. Hakanson and L. Henry (1 of 2).

Company/ Brand	Variety	Herbicide Trait	Maturity		Plant Height (inch)	Plant Lodge (0-9)	Seed Oil (%)	Seed Protein (%)	Seed Yield		
			Group	Maturity ¹ (date)					2019	2-yr. Avg.	2-site Avg. ²
									------(bu/a)-----		
Allegiant	01E23	Enlist	0.1	9/16	33	3	14.9	33.3	38.4	--	--
Allegiant	02X21N	RR2XT	0.1	9/16	34	2	14.2	33.1	51.2	--	--
Allegiant	04X08N	RR2XT	0.2	9/22	35	1	15.1	34.2	57.0	--	--
Dahlman	1003E3	Enlist	0.3	9/22	28	0	14.5	33.4	44.4	--	34.8
Dahlman	6903XN	RR2XT	0.3	9/16	34	1	15.3	32.1	51.7	--	44.9
Dairyland	DSR-0200/R2Y	RR2Y	0.2	9/12	37	2	14.9	33.8	49.6	47.7	40.5
Dairyland	DSR-C999/R2Y	RR2Y	00.9	9/17	33	0	14.9	32.2	47.7	50.4	41.1
Dyna-Gro	S009XT68	RR2XT	00.9	9/12	37	1	13.9	33.5	53.3	52.9	41.4
Dyna-Gro	S03XT29	RR2XT	0.3	9/16	36	1	13.8	33.2	53.3	52.3	45.1
Dyna-Gro	S04XT77	RR2XT	0.4	9/19	31	0	15.1	33.5	53.5	53.4	41.8
Golden H.	GH0145X	RR2XT	0.1	9/14	35	1	14.5	32.6	52.4	--	42.1
Golden H.	GH0308X	RR2XT	0.3	9/16	31	0	14.1	33.2	51.4	--	42.8
Hefty	H008X8	RR2XT	00.8	9/10	34	1	15.5	32.2	44.1	--	37.5
Hefty	H02X9	RR2XT	0.2	9/17	35	1	14.2	32.55	56.7	--	45.3
Hefty	H03X8	RR2XT	0.3	9/20	36	0	14.2	32.5	52.9	49.8	41.5
Hefty	H03E9	Enlist	0.3	9/23	31	0	14.2	33.7	49.6	--	36.5
Integra	40209	Enlist	0.2	9/16	29	3	15.0	33.3	40.3	--	35.7
Integra	50001	RR2XT	0.0	9/19	31	0	14.7	33.7	45.4	--	37.9
Integra	50309N	RR2XT	0.3	9/17	34	1	14.7	32.9	49.1	52.2	42.1
Legacy	LS-0239N RR2X	RR2XT	0.2	9/15	34	1	14.6	32.1	58.0	55.3	48.0
Legacy	LS-0337N RR2X	RR2XT	0.3	9/19	33	0	15.1	33.9	55.4	55.7	44.4
Legacy	LS-0429 E3	Enlist	0.4	9/20	35	1	14.8	34.1	50.7	--	42.7
Legacy	LS-0438RR2X	RR2XT	0.4	9/22	33	0	15.1	34.3	56.3	55.0	45.1
LG Seeds	LGS00663RX	RR2XT	00.6	9/10	29	1	15.8	31.2	44.7	43.6	35.0
LG Seeds	LGS00899RX	RR2XT	00.8	9/9	32	1	16.1	32.2	50.8	49.7	39.8
LG Seeds	LGS0111RX	RR2XT	0.1	9/16	34	1	15.2	34.4	51.8	51.0	43.7
LG Seeds	LGS0355RX	RR2XT	0.3	9/17	35	1	14.1	33.2	55.4	52.9	46.2
LG Seeds	LGS0400RX	RR2XT	0.4	9/21	35	0	14.7	32.8	52.5	53.8	45.9
NDSU	ND17009GT	GT	00.9	9/10	34	0	15.4	35.9	45.0	45.1	35.6
NDSU	ND18008GT	GT	00.8	9/9	31	1	15.9	33.0	35.6	35.7	27.8
Syng NK	S01-C4X	RR2XT	0.1	9/14	34	0	14.6	32.0	51.9	--	42.1
Syng NK	S02-F9X	RR2XT	0.2	9/16	31	0	15.7	31.3	51.4	--	41.7
Syng NK	S03-E3	Enlist	0.2	9/16	31	2	14.7	32.3	49.3	--	--
Syng NK	S03-S6X	RR2XT	0.3	9/16	33	1	14.7	32.4	51.8	--	40.0
Syng NK	S05-N5X	RR2XT	0.5	9/22	31	0	14.6	32.7	60.1	--	--
Peterson	20EN02	Enlist	0.2	9/17	30	2	14.6	34.0	42.5	--	37.2
Peterson	20EN03	Enlist	0.3	9/19	32	1	14.8	31.4	44.5	--	36.7
Proseed	50-10	RR2Y	0.1	9/10	39	2	16.1	32.8	53.5	--	44.0
Proseed	BX 80-35	LLGT27	0.3	9/22	31	0	14.0	36.3	58.9	--	48.4
Proseed	XT 60-40	RR2XT	0.4	9/20	33	0	15.3	33.8	54.3	--	42.8
Proseed	XT 60-09	RR2XT	00.9	9/11	36	1	14.6	33.1	54.2	52.6	44.4
Proseed	XT 80-20N	RR2XT	0.2	9/16	31	2	14.1	33.0	48.9	49.8	42.4
REA	RX00810	RR2XT	00.8	9/7	29	0	15.3	32.2	39.4	--	32.5
REA	RX0228	RR2XT	0.2	9/16	39	0	14.7	33.6	47.6	45.3	37.8
REA	RX0330	RR2XT	0.3	9/22	33	0	14.6	32.8	46.8	--	39.0
Mean				9/16	33	1	14.8	33.1	49.9	50.5	40.8
CV %				1.3	8.7	112.0	--	--	6.2	--	--
LSD 0.05				2.1	4.0	1.2	--	--	4.3	--	--
LSD 0.10				1.8	3.3	1.0	--	--	3.7	--	--

Table 29. 2019 Soybean - Enlist, GT, RR and Xtend - Pekin (Langdon REC) - Authors, B. Hanson, T. Hakanson 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)----- 2019 2-yr. Avg. 2-site Avg. ²		
Thunder	3601 R2Y	RR2Y	0.1	9/13	36	2	15.3	33.3	52.6	51.9	42.5
Thunder	SB8001	RR2XT	0.1	9/17	30	1	14.1	32.2	45.5	--	37.9
Thunder	SB8903N	RR2XT	0.3	9/16	36	2	16.0	32.1	54.4	54.8	45.1
Thunder	TE7003	Enlist	0.3	9/18	33	2	14.7	32.8	48.0	--	39.5
Thunder	TE7902	Enlist	0.2	9/18	32	1	14.2	33.4	42.2	--	35.7
Mean				9/16	33	1	14.8	33.1	49.9	50.5	40.8
CV %				1.3	8.7	112.0	--	--	6.2	--	--
LSD 0.05				2.1	4.0	1.2	--	--	4.3	--	--
LSD 0.10				1.8	3.3	1.0	--	--	3.7	--	--

Planted: May 23. Harvested: Oct 31.

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. 2019 Soybean - Conventional - Minot (North Central REC) - Authors, E. Eriksmoen and J. Effertz.**

Company/ Brand	Variety	Maturity Group	IDC Rating ¹ (1-5)	Maturity ² (date)	Plant Height (inches)	Test Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed Yield ------(bu/a)----- 2019 3-yr. Avg.	
NDSU	ND Benson	0.4	1.9	9/18	24	57.2	15.8	36.1	48.6	33.2
NDSU	ND Henson	0.0	2.1	9/10	20	57.3	16.4	34.6	51.7	32.3
NDSU	ND Rolette	00.9	1.3	9/13	21	57.7	16.4	34.6	45.3	--
NDSU	ND Stutsman	0.7	1.9	9/17	22	56.8	15.5	34.1	48.5	36.6
U of M	MN0083	00.8	--	9/4	21	57.5	15.4	35.8	30.0	--
U of M	MN0810CN	0.8	--	9/17	27	57.6	15.2	36.3	43.0	--
	RR check	00.6	--	9/3	22	57.1	15.0	35.1	38.4	28.6
	RR check	00.8	--	9/5	20	57.3	15.4	34.1	44.2	--
	RR check	00.9	2.4	9/6	20	57.2	15.2	34.8	39.8	28.3
	RR check	0.8	2.0	9/21	23	54.0	15.2	33.8	47.8	--
Mean			2.1	9/14	22	57.0	15.5	34.9	43.7	31.8
CV %			20	13	8.3	0.9	2.2	1.4	8.3	--
LSD 0.05			0.3	3.0	3.0	0.8	0.6	0.8	6.2	--
LSD 0.10			0.3	2.0	2.0	0.7	0.5	0.7	5.2	--

Planted: May 17. Harvested: Oct. 8. Previous crop: wheat.

¹Iron deficiency chlorosis rating: 1-green, 3-yellow, 5-dead tissue.²Maturity is date of 95% brown or tan pods.

Table 31. 2019 Soybean - Enlist, GT, RR and Xtend - Minot (North Central REC) - Authors, E. Eriksmoen, J. Effertz and A. Kraklau.

Company/ Brand	Variety	Herbicide Trait	Maturity Group	IDC Rating ¹ (1-5)	Plant Maturity (date)	Test Height (inches)	Seed Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed Yield 2019 3-yr. Avg. ----(bu/a)----	
Dairyland	DSR-0200/R2Y	RR	0.2	1.7	9/16	26	57.0	15.1	34.1	47.8	40.0
Dairyland	DSR-C999/R2Y	RR	00.9	2.8	9/10	26	56.3	16.0	33.3	52.3	41.3
Dyna-Gro	S009XT68	XT	00.9	2.3	9/14	28	57.3	15.0	33.2	50.3	41.5
Dyna-Gro	S03XT29	XT	0.3	1.7	9/16	25	57.1	15.2	32.8	52.9	41.7
Hefty	H006x0	XT	00.6	--	9/3	22	56.6	16.2	31.9	41.4	--
Hefty	H007x7	XT	00.7	--	9/6	19	57.1	16.2	32.3	41.4	--
Hefty	H008x8	XT	00.8	--	9/8	29	56.7	16.2	31.7	49.3	39.3
Hefty	H009x7	XT	00.9	--	9/10	26	57.1	15.2	33.1	41.1	38.8
Hefty	H01E9	Enlist	0.1	2.2	9/17	22	55.8	15.4	33.5	51.9	--
Hefty	H01x0	XT	0.1	2.8	9/15	24	56.4	15.9	33.8	52.2	--
Hefty	H02E0	Enlist	0.2	1.9	9/16	19	56.5	16.0	31.6	50.3	--
Hefty	H02x7	XT	0.2	--	9/17	33	56.2	16.0	32.3	62.3	45.2
Hefty	H03x7	XT	0.3	--	9/17	19	56.6	15.6	33.9	51.8	42.3
Hefty	H04E8	Enlist	0.4	--	9/18	23	56.8	16.2	32.8	40.6	--
Integra	40350E3	Enlist	0.3	--	9/20	22	56.8	15.3	33.7	61.0	--
Integra	20215 R2Y	RR	0.2	2.2	9/15	25	57.0	15.2	33.7	51.2	47.5
Integra	50001 R2X	XT	0.1	2.5	9/16	25	56.4	15.7	33.5	52.6	--
Integra	50309N R2X	XT	0.3	1.5	9/17	23	56.8	15.4	32.2	48.6	38.4
Legacy	LS-00639N RR2X	XT	00.6	2.3	9/4	23	56.9	15.9	31.9	43.2	--
Legacy	LS-00930 RR2X	XT	00.9	2.6	9/17	21	56.1	15.7	34.0	46.9	--
Legacy	LS-0239N RR2X	XT	0.2	1.7	9/11	23	56.7	15.6	32.4	48.2	--
Legacy	LS-0438 RR2X	XT	0.4	2.6	9/18	23	56.2	16.1	32.7	50.5	--
LG Seeds	LGS00663RX	XT	00.6	2.1	9/6	24	57.3	15.5	32.7	46.8	38.1
LG Seeds	LGS00899RX	XT	00.8	2.3	9/14	26	56.9	16.3	32.1	47.9	--
LG Seeds	LGS0111RX	XT	0.1	2.6	9/16	28	56.2	16.2	32.2	52.8	48.0
NDSU	ND17009GT	GT	00.9	3.1	9/14	25	58.3	16.4	34.0	49.6	42.8
NDSU	ND18008GT	GT	00.7	2.8	9/4	23	56.7	16.4	33.6	36.0	34.4
NorthStar	NS 60092XR2	XT	00.9	2.0	9/14	23	57.2	15.5	33.1	46.9	39.4
NorthStar	NS 90094E3	Enlist	00.9	1.4	9/17	24	56.9	16.0	32.5	45.9	--
NorthStar	NS 90214E3	Enlist	0.2	2.5	9/17	22	55.9	15.6	32.3	46.6	--
P3 Genetics	2002E	Enlist	0.2	--	9/17	22	56.4	15.4	32.5	47.4	--
Peterson	18X008	XT	00.8	2.3	9/7	25	56.9	16.0	33.0	46.5	39.4
Peterson	19EN008	Enlist	00.8	1.6	9/17	25	56.9	16.4	31.3	54.7	--
Peterson	20X01	XT	0.1	3.2	9/15	22	56.2	16.0	33.1	43.4	--
Proseed	50-10	RR	0.1	2.9	9/13	21	56.8	16.4	33.2	53.3	--
Proseed	EL 80-093	Enlist	00.9	2.2	9/17	26	56.9	16.0	31.8	57.0	--
Proseed	XT 60-09	XT	00.9	2.2	9/14	23	56.9	16.3	32.3	52.7	41.7
Proseed	XT 80-20	XT	0.2	1.6	9/14	22	56.4	15.6	32.3	41.9	39.2
REA	RX00749	XT	00.7	1.8	9/6	25	56.1	15.9	32.2	50.1	38.3
REA	RX00810	XT	00.8	2.4	9/6	22	56.1	16.0	33.2	46.1	--
REA	RX0228	XT	0.2	1.6	9/15	29	56.7	15.9	33.4	44.5	35.5
REA	RX0330	XT	0.3	1.9	9/18	25	56.6	15.3	32.5	50.8	--
Thunder	ASTRO R2Y	RR	00.8	1.8	9/12	30	56.9	15.3	33.6	45.6	33.9
Thunder	SB88007N	XT	00.7	2.2	9/6	28	56.8	16.2	32.5	50.4	36.7
Thunder	SB89006N	XT	00.6	--	9/7	24	56.8	16.0	31.8	50.7	38.2
Thunder	TE79009	Enlist	00.9	--	9/17	20	56.6	15.3	33.6	48.4	--
U of M	M06R-614008GT	GT	00.8	2.6	9/8	21	57.2	15.7	33.0	44.3	--
Mean				2.4	9/12	24	56.7	15.9	32.9	48.1	40.1
CV %				23	10.4	7.1	0.8	2.2	2.2	7.0	--
LSD 0.05				0.4	2	3.0	0.7	0.6	1.2	5.5	--
LSD 0.10				0.3	2	2.0	0.6	0.5	1.0	4.6	--

Planted: May 22. Harvested: Oct. 25. Previous crop: wheat.

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

Table 32. 2019 Soybean - Enlist, GT, RR and Xtend - Mohall (North Central REC) - Authors, E. Eriksmoen, J. Effertz and A. Kraklau.

Company/ Brand	Variety	Herbicide Trait	Maturity Group	IDC Rating ¹	Plant Height	Test Weight	Seed Oil	Seed Protein	Seed Yield	
									2019	2-yr. Avg.
									----- (bu/a) -----	
Dyna-Gro	S005XT38	XT	00.5	2.1	25	58.0	15.5	31.5	39.8	34.6
Dyna-Gro	S007XT27	XT	00.7	2.2	23	58.9	14.9	32.5	39.5	34.6
Dyna-Gro	S009XT68	XT	00.9	2.3	25	58.0	14.9	32.2	32.4	--
Hefty	H006x0	XT	00.6	--	22	57.7	14.9	32.5	37.8	--
Hefty	H007x7	XT	00.7	--	21	59.0	15.1	32.7	37.5	--
Hefty	H008x8	XT	00.8	--	25	56.4	15.9	32.1	36.4	29.8
Hefty	H009x7	XT	00.9	--	28	56.8	14.8	32.7	42.0	--
Hefty	H01E9	Enlist	0.1	2.2	23	55.9	13.3	33.6	35.7	--
Hefty	H01x0	XT	0.1	2.8	25	56.3	15.7	33.5	48.1	--
Hefty	H02E0	Enlist	0.2	1.9	24	54.9	13.1	32.1	42.6	--
Hefty	H02x7	XT	0.2	--	29	55.3	16.2	30.6	40.1	34.2
Hefty	H03x7	XT	0.3	--	25	55.7	15.4	32.1	40.5	36.8
Integra	20097 R2Y	RR	00.9	2.7	25	57.1	14.7	33.2	43.7	36.2
Integra	40089 E3	Enlist	00.8	1.9	25	57.0	14.3	31.7	39.1	--
Integra	40129 E3	Enlist	0.1	1.4	23	54.0	15.2	31.0	35.7	--
Integra	40209 E3	Enlist	0.2	2.3	25	55.8	13.2	33.2	37.3	--
Integra	50001 R2X	XT	0.1	2.5	24	54.5	15.8	32.4	40.9	--
Integra	50060N	XT	00.6	--	27	56.7	14.9	32.6	47.4	--
Legacy	LS-00639N RR2X	XT	00.6	2.3	24	57.9	15.3	32.5	41.6	--
Legacy	LS-00930 RR2X	XT	00.9	2.6	22	57.1	15.7	32.4	41.6	--
Legacy	LS-0239N RR2X	XT	0.2	1.7	25	56.6	14.9	32.1	42.5	--
LG Seeds	LGS00663RX	XT	00.6	2.1	20	58.9	15.1	32.3	36.8	31.6
LG Seeds	LGS00899RX	XT	00.8	2.3	25	57.0	15.8	32.7	45.3	--
LG Seeds	LGS0111RX	XT	0.1	2.6	26	55.5	15.7	32.4	56.7	44.1
NDSU	ND17009GT	GT	00.9	3.1	25	58.7	15.2	34.7	33.7	29.7
NDSU	ND18008GT	GT	00.7	2.8	24	58.0	15.5	32.8	31.8	28.6
NorthStar	NS 60065NXR2	XT	00.6	2.2	24	57.7	15.3	32.0	35.9	--
NorthStar	NS 90084NE3	Enlist	00.7	1.8	23	56.2	14.4	32.1	36.7	--
NorthStar	NS 90094E3	Enlist	00.9	1.4	22	54.8	14.5	32.1	41.5	--
P3 Genetics	2002E	Enlist	0.2	--	25	55.3	13.7	33.2	38.7	--
Peterson	18X008	XT	00.8	2.3	25	57.6	15.8	32.5	40.9	--
Peterson	19EN008	Enlist	00.8	1.6	25	55.7	14.3	32.7	38.8	--
Peterson	20X01	XT	0.1	3.2	23	56.1	15.7	32.1	38.9	--
Proseed	50-10	RR	0.1	2.9	26	58.0	15.0	32.8	42.1	--
Proseed	EL 80-093	Enlist	00.9	2.2	25	56.4	14.7	31.7	45.7	--
Proseed	XT 60-09	XT	00.9	2.2	27	57.7	15.7	31.9	44.1	--
Proseed	XT 80-20	XT	0.2	1.6	23	57.1	15.1	31.4	37.7	--
REA	RX00749	XT	00.7	1.8	23	57.6	15.1	32.4	39.5	31.2
REA	RX00810	XT	00.8	2.4	21	56.8	15.6	32.9	52.3	--
REA	RX0330	XT	0.3	1.9	26	51.5	15.6	34.2	38.6	--
Thunder	ASTRO R2Y	RR	00.8	1.8	25	57.9	13.8	33.7	37.3	36.6
Thunder	SB88007N	XT	00.7	2.2	25	57.8	16.0	32.3	41.4	35.0
Thunder	SB89006N	XT	00.6	--	23	56.9	15.1	31.9	33.0	31.1
Mean				2.4	24	56.8	15.0	32.5	40.1	33.9
CV %				22.6	5.3	1.4	3.3	2.8	14.0	--
LSD 0.05				0.4	2.0	1.1	0.7	1.3	7.9	--
LSD 0.10				0.3	2.0	0.9	0.6	1.1	6.6	--

Planted: May 23. Harvested: Oct. 18. Previous crop: canola.

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

Table 33. 2019 Soybean - Enlist, GT, RR and Xtend - Garrison (North Central REC) - Authors, E. Eriksmoen, J. Effertz and A. Kraklau.

Company/ Brand	Variety	Herbicide Trait	Maturity Group	IDC Rating ¹ (1-5)	Plant Height (inch)	Test Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed Yield	
									2019	2-yr. Avg.
Dyna-Gro	S03XT29	XT	0.3	1.7	26	57.4	14.3	34.3	51.3	45.9
Dyna-Gro	S04XT77	XT	0.4	2.4	23	56.6	14.8	34.5	49.8	43.6
Dyna-Gro	S05EN70	Enlist	0.5	2.2	24	53.4	15.1	33.1	44.3	--
Integra	20215 R2Y	RR	0.2	2.2	24	57.0	14.3	34.6	55.2	46.1
Integra	20300 R2Y	RR	0.3	2.5	25	53.1	14.5	34.5	46.0	--
Integra	40209 E3	Enlist	0.2	2.3	22	56.1	14.5	35.2	47.7	--
Integra	50309N R2X	XT	0.3	1.5	26	57.2	14.7	34.1	51.0	43.8
LG Seeds	LGS00899RX	XT	00.8	2.3	25	56.9	15.4	34.0	47.7	--
LG Seeds	LGS0111RX	XT	0.1	2.6	26	54.7	14.8	34.7	53.2	44.7
LG Seeds	LGS0355RX	XT	0.3	1.8	25	56.8	14.1	34.5	53.7	49.8
NDSU	ND17009GT	GT	00.9	3.1	25	59.1	15.6	36.7	39.9	36.7
NDSU	ND18008GT	GT	00.7	2.8	23	57.8	15.4	36.1	33.4	31.7
P3 Genetics	2002E	Enlist	0.2	--	23	56.9	14.6	34.9	46.2	--
Peterson	18X008	XT	00.8	2.3	25	57.1	15.3	33.8	41.9	--
Peterson	19EN008	Enlist	00.8	1.6	28	57.5	15.4	33.2	45.5	--
Peterson	20X01	XT	0.1	3.2	22	56.6	14.9	34.6	50.0	--
Proseed	50-10	RR	0.1	2.9	30	56.9	15.4	34.6	48.1	--
Proseed	EL 80-093	EN	00.9	2.2	27	57.7	15.2	33.4	49.2	--
Proseed	XT 60-09	XT	00.9	2.2	26	56.5	15.5	33.4	44.8	--
Proseed	XT 80-20	XT	0.2	1.6	25	57.2	14.4	34.1	53.7	--
Rea	RX00810	XT	00.8	2.4	22	56.9	15.0	34.7	43.4	--
Rea	RX0330	XT	0.3	1.9	27	54.8	14.6	33.3	42.1	--
Rea	RX0520	XT	0.5	2.1	22	52.5	14.5	35.2	41.1	--
Thunder	TE79009	Enlist	00.9	--	24	56.5	15.4	33.4	40.1	--
Mean				2.4	25	56.5	14.9	34.4	46.5	42.8
CV %				22.6	6.7	0.9	1.6	1.3	9.5	--
LSD 0.05				0.4	2.0	0.7	0.3	0.6	6.2	--
LSD 0.10				0.3	2.0	0.6	0.3	0.5	5.2	--

Planted: May 29. Harvested: Oct. 8. Previous crop: soybean.

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

Table 34. 2019 Soybean - Enlist, GT, RR and Xtend - Rugby (North Central REC) - Authors, E. Eriksmoen, J. Effertz and A. Kraklau.

Company/ Brand	Variety	Herbicide Trait	Maturity Group	IDC Rating ²	Plant Height	Test Weight	Seed Oil	Seed Protein	Seed Yield	
									2019	2-yr. Avg.
				(1-5)	(inch)	(lb/bu)	(%)	(%)	-----(bu/a)----	
Integra	20215 R2Y	RR	0.2	2.2	24	56.6	15.5	33.7	41.9	48.4
Integra	40129 E3	Enlist	0.1	1.4	22	56.0	16.2	32.2	34.6	--
Integra	40209 E3	Enlist	0.2	2.3	22	55.8	15.6	33.3	35.9	--
Integra	50001 R2X	XT	00.1	2.5	23	56.0	15.8	33.7	41.8	--
Integra	50309N R2X	XT	0.3	1.5	24	56.7	15.3	32.8	40.7	53.5
Legacy	LS-00930 RR2X	XT	00.9	2.6	23	56.5	15.9	33.3	43.4	--
Legacy	LS-0239N RR2X	XT	0.2	1.7	25	56.7	15.2	33.1	40.5	47.1
Legacy	LS-0429 E3	EN	0.4	1.8	24	55.6	15.9	34.0	40.9	--
Legacy	LS-0438 RR2X	XT	0.4	2.6	23	55.7	15.9	34.0	41.0	--
LG Seeds	LGS00663RX	XT	00.6	2.1	21	57.5	15.7	33.6	33.5	--
LG Seeds	LGS00899RX	XT	00.8	2.3	24	56.4	16.4	33.0	38.6	--
LG Seeds	LGS0111RX	XT	0.1	2.6	27	56.0	16.1	33.8	45.7	--
NDSU	ND17009GT	GT	00.9	3.1	24	58.6	16.6	35.0	35.3	46.3
NDSU	ND18008GT	GT	00.7	2.8	21	56.5	16.7	33.7	36.8	46.5
NorthStar	NS 60264N XR2	XT	0.2	1.8	23	56.3	15.5	33.0	46.5	51.9
NorthStar	NS 90214E3	Enlist	0.2	2.5	21	55.7	15.5	33.6	42.0	--
NorthStar	NS 90334E3	Enlist	0.3	2.4	22	56.5	15.5	33.2	46.3	--
P3 Genetics	2002E	Enlist	0.2	--	21	56.0	15.8	33.2	37.7	--
Peterson	18X008	XT	00.8	2.3	27	56.5	16.6	32.8	35.2	--
Peterson	19EN008	Enlist	00.8	1.6	25	56.5	16.1	32.7	40.5	--
Peterson	20X01	XT	0.1	3.2	22	56.3	16.1	33.3	35.6	--
Proseed	50-10	RR	0.1	2.9	29	56.7	16.4	33.1	42.5	--
Proseed	EL 80-093	Enlist	00.9	2.2	24	56.5	16.3	32.8	38.9	--
Proseed	XT 60-09	XT	00.9	2.2	26	56.7	16.6	32.7	37.5	--
Proseed	XT 80-20	XT	0.2	1.6	25	56.4	15.4	32.6	44.0	--
REA	RX00749	XT	00.7	1.8	23	56.6	15.8	33.7	33.2	44.6
REA	RX00810	XT	00.8	2.4	21	56.1	16.3	33.2	38.6	--
REA	RX0228	XT	0.2	1.6	26	56.3	15.9	33.7	39.6	49.9
REA	RX0330	XT	0.3	1.9	24	55.9	15.2	33.3	41.7	--
Mean				2.4	24	56.4	15.9	33.3	39.7	48.5
CV %				22.6	7.6	0.7	1.7	1.3	9.1	--
LSD 0.05				0.4	3.0	0.5	0.4	0.6	5.0	--
LSD 0.10				0.3	2.0	0.4	0.3	0.5	4.2	--

Planted: May 23. Harvested: Oct. 21. Previous crop: soybean.

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

Table 35. 2019 Soybean - Enlist, GT, RR and Xtend - Wilton (North Central REC) - Authors, E. Eriksmoen, J. Effertz and A. Kraklau.

Company/ Brand	Variety	Herbicide Trait	Maturity Group	IDC Rating ²	Plant Height	Test Weight	Seed Oil	Seed Protein	Seed Yield	
									2019	2-yr. Avg.
									----- (bu/a) -----	
Croplan	RX0426	XT	0.4	--	19.8	57.7	15.4	37.0	43.5	--
Croplan	RX0500	XT	0.5	--	18.8	57.5	15.2	37.3	43.4	--
Dyna-Gro	S03XT29	XT	0.3	1.7	25.8	58.1	14.2	36.9	47.1	40.5
Dyna-Gro	S04XT77	XT	0.4	2.4	20.8	57.7	15.3	37.2	43.5	38.1
Dyna-Gro	S05EN70	Enlist	0.5	2.2	22.0	57.4	15.6	36.1	44.5	--
Dyna-Gro	S06XT59	XT	0.6	2.6	24.8	57.9	14.5	36.9	41.1	39.1
Integra	20300 R2Y	RR	0.3	2.5	22.0	57.5	14.6	37.7	42.0	36.4
Integra	40209 E3	Enlist	0.2	2.3	20.3	56.9	14.6	37.7	44.1	--
Integra	50309N R2X	XT	0.3	1.5	21.5	57.8	14.7	36.1	48.6	41.1
Integra	INT40350	Enlist	0.3	--	19.5	57.6	15.1	36.7	38.3	--
Legacy	LS-0429 E3	Enlist	0.4	1.8	24.0	57.9	15.0	37.8	49.0	--
Legacy	LS-0438 RR2X	XT	0.4	2.6	22.0	57.5	15.1	38.3	46.1	40.9
Legacy	LS-0638N RR2X	XT	0.6	2.6	24.8	57.9	14.7	36.2	48.4	42.3
LG Seeds	LGS0111RX	XT	0.1	2.6	25.0	57.7	14.7	38.1	47.1	39.8
LG Seeds	LGS0355RX	XT	0.3	1.8	23.0	57.5	14.2	37.0	46.5	39.8
LG Seeds	LGS0400RX	XT	0.4	2.5	23.8	57.6	15.3	35.5	45.2	--
NDSU	ND17009GT	GT	00.9	3.1	24.3	59.0	15.3	38.4	43.8	34.2
NDSU	ND18008GT	GT	00.7	2.8	21.5	57.3	15.7	37.2	43.0	35.5
P3 Genetics	2002E	Enlist	0.2	--	19.8	57.1	14.4	37.7	42.9	--
Peterson	18X008	XT	00.8	2.3	24.3	57.7	15.9	35.3	44.9	--
Peterson	19EN008	Enlist	00.8	1.6	25.3	57.8	14.8	36.7	49.4	--
Peterson	20X01	XT	0.1	3.2	20.0	57.1	15.1	37.4	41.6	--
Proseed	50-10	RR	0.1	2.9	27.3	57.9	15.7	36.8	49.7	--
Proseed	EL 80-093	Enlist	00.9	2.2	26.5	57.7	14.5	37.3	47.3	--
Proseed	XT 60-09	XT	00.9	2.2	24.5	57.7	15.7	35.6	45.2	--
Proseed	XT 80-20	XT	0.2	1.6	22.8	57.9	14.7	36.6	41.4	--
REA	RX00810	XT	00.8	2.4	20.8	56.9	15.4	36.0	40.5	--
REA	RX0330	XT	0.3	1.9	23.8	57.3	15.2	36.0	44.5	--
REA	RX0520	XT	0.5	2.1	20.3	57.8	14.9	36.8	44.1	--
Thunder	SB8903N	XT	0.3	1.8	24.8	57.8	14.4	37.1	46.8	39.0
Thunder	TE79009	Enlist	00.9	--	23.5	57.5	14.9	36.8	48.1	--
Mean				2.4	23.0	57.6	15.0	36.9	45.1	38.9
CV %				22.6	9.1	0.7	2.0	1.6	8.5	--
LSD 0.05				0.4	3	0.6	0.4	0.8	5.4	--
LSD 0.10				0.3	2	0.5	0.4	0.7	4.5	--

Planted: May 29. Harvested: Oct. 8. Previous crop: corn.

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

Table 36. 2019 Soybean - GT, RR and Xtend - Hettinger (REC) - Author, J. Rickertsen and M. Wells.

Company/ Brand	Variety	Maturity Group	Maturity ¹ (date)	Plant Height (inch)	Test Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed Yield ------(bu/a)----- 2019 2-yr. Avg.	
Integra	50309N	0.3	9/22	30	54.8	16.4	32.8	43.0	--
Integra	50510N	0.5	9/27	30	55.4	16.5	32.5	47.9	--
NDSU	ND17009GT	00.9	9/16	30	55.9	17.1	34.0	40.5	--
NDSU	ND18008GT	00.8	9/15	30	54.4	17.1	33.0	34.3	30.3
Proseed	30-20	0.2	9/20	32	54.7	16.0	34.2	44.0	37.5
Proseed	BX 80-35	0.3	9/24	30	55.6	16.3	34.6	42.4	--
Proseed	XT 60-40N	0.4	9/23	31	54.6	16.6	33.8	40.1	--
REA	RX0330	0.3	9/23	29	54.7	16.4	33.1	36.1	--
REA	RX0520	0.5	9/26	33	55.3	16.2	33.2	38.5	--
REA	RX0719	0.7	9/22	30	55.4	16.2	34.2	41.9	35.9
REA	RX0929	0.9	10/1	32	55.9	16.4	32.9	42.9	37.0
U of M	M06R-614008	0.6	9/21	30	54.5	16.4	33.7	35.4	--
Mean			9/23	31	55.1	16.5	33.5	40.6	35.1
CV %			0.5	6.5	1.4	3.2	2.4	10.6	--
LSD 0.05			1.2	2.8	1.1	0.8	1.2	6.1	--
LSD 0.10			1.0	2.3	0.9	0.6	1.0	5.1	--

Planted: May 30. Harvested: Oct. 23. Previous crop: spring wheat.

¹Maturity is date of 95% brown or tan pods.**Table 37. 2019 Soybean - Conventional - Hettinger (REC) - Author, J. Rickertsen and M. Wells.**

Company/ Brand	Variety	Maturity Group	Maturity ¹ (date)	Plant Height (inch)	Test Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed Yield ------(bu/a)----- 2019 2-yr. Avg.	
NDSU	ND Benson	0.4	9/27	32	56.0	16.5	33.7	36.5	33.4
NDSU	ND Stutsman	0.7	9/26	31	55.6	16.8	32.4	42.1	39.5
U of M	MN0810CN	0.8	9/28	35	55.5	15.6	35.0	32.2	--
U of M	MN0083	00.8	9/13	27	54.2	16.5	34.3	29.2	--
Mean			9/23	31	55.3	16.4	33.9	35.0	36.4
CV %			0.7	4.8	0.8	17.0	2.1	10.7	--
LSD 0.05			1.3	2.3	0.7	0.4	1.0	5.8	--
LSD 0.10			1.1	1.9	0.5	0.3	0.8	4.8	--

Planted: May 30. Harvested: Oct. 23 Previous crop: spring wheat.

¹Maturity is date of 95% brown or tan pods.**Table 38. 2019 Soybean - Roundup Ready and Xtend - Mandan (Hettinger REC) - Author, J. Rickertsen and M. Wells.**

Company/ Brand	Variety	Maturity Group	Test Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed Yield 2019 (bu/a)
Integra	50309N	0.3	54.8	15.2	33.5	39.8
Integra	50510N	0.5	55.0	16.1	32.0	46.9
Proseed	30-20	0.2	54.6	15.7	34.0	36.2
Proseed	BX 80-35	0.3	55.8	15.8	33.9	43.7
Proseed	XT 60-40N	0.4	55.2	15.7	33.0	39.7
REA	RX0330	0.3	55.1	15.2	33.1	42.7
REA	RX0520	0.5	55.1	15.2	33.7	42.6
REA	RX0719	0.7	55.0	15.9	33.3	44.8
REA	RX0929	0.9	55.5	15.8	32.2	40.0
U of M	M06R-614008	0.6	55.7	15.4	34.4	42.2
Mean			55.1	15.6	33.2	41.8
CV %			0.7	2.0	2.1	8.9
LSD 0.05			0.6	0.5	1.0	5.4
LSD 0.10			0.5	0.4	0.8	4.5

Planted: June 5. Harvested: Oct. 24. Previous crop: spring wheat.

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

Table 39. 2019 Soybean - Dryland, Enlist, RR and Xtend - Williston - Authors, J. Bergman and G. Pradhan.

Company/ Brand	Variety	Maturity Group	Maturity ¹ (date)	Plant Height (inch)	Seed Protein (%)	Seed Yield 2019 (bu/a)
Dyna-Gro	S009XT68	00.9	9/10	25	32.9	39.8
Dyna-Gro	S03XT29	0.3	9/10	25	31.8	43.5
Integra	40209 E3	0.3	9/13	22	32.0	36.4
Integra	50309N	0.3	9/10	23	32.1	43.8
LG Seeds	LGS00899RX	00.8	9/10	24	31.9	36.9
LG Seeds	LGS0111RX	0.1	9/10	24	33.3	42.1
NDSU	ND14-6120	0.1	9/10	24	32.5	39.7
NDSU	ND17009GT	00.9	9/10	26	34.4	38.5
NDSU	ND18008GT	00.8	9/10	22	33.2	37.3
Peterson	16R01	0.1	9/10	26	33.5	38.3
Peterson	19X03	0.3	9/10	23	31.9	42.6
Peterson	20EN02	0.2	9/15	20	31.3	33.3
Proseed	30-20	0.2	9/11	25	33.8	42.0
Proseed	EL 80-093	00.9	9/10	21	30.9	38.4
Proseed	XT 60-09	00.9	9/10	25	32.8	40.0
REA	RX0520	0.5	9/20	25	32.4	39.1
REA	RX00810	00.8	9/10	18	32.9	41.0
REA	RX0330	0.3	9/16	25	32.8	38.5
REA hybrids	RX00749	00.7	9/10	20	31.5	34.2
Syng NK	S006-R7X	00.6	9/10	19	33.4	37.4
Syng NK	S007-Y4	0.5	9/10	22	31.8	39.0
Syng NK	S01-C4X	0.1	9/10	24	31.7	40.5
Syng NK	S02-F9X	0.2	9/12	22	30.9	42.0
U of M	M06R-614008GT	00.8	9/11	18	32.5	36.9
Mean			9/11	23	32.5	39.0
CV %			0.8	8	1.9	7.8
LSD 0.05			1.4	3	0.9	4.3
LSD 0.10			1.2	2	0.7	3.6

Planted: May 14. Harvested: Oct. 7. Previous crop: German Foxtail Millet

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

Table 40. 2019 Soybean - Irrigated, Enlist, GT, RR and Xtend - Nesson Valley (Williston REC) - Authors, J. Jacobs and T. Tjelde.

Company/ Brand	Variety	Maturity		Plant Height (inch)	Seed Yield	
		Group	Maturity ¹ (date)		2019	2-Yr. Avg. ------(bu/a)-----
Dyna-Gro	S009XT68	00.9	9/17	18	31.2	--
Dyna-Gro	S03XT29	0.3	9/20	20	34.3	--
Golden H.	GH0145X	0.1	9/16	19	29.0	--
Golden H.	GH0308X	0.3	9/14	19	31.4	--
Integra	40209 E3	0.2	9/16	18	29.3	--
Integra	40350 E3	0.3	9/16	19	29.2	--
Integra	50309N	0.3	9/17	19	33.3	--
NDSU	ND17009GT	00.9	9/21	20	38.6	47.8
NDSU	ND18008GT	00.8	9/14	19	26.3	37.8
Peterson	16R01	0.1	9/16	18	30.2	--
Peterson	19EN02	0.2	9/14	18	30.2	--
Peterson	19X03	0.3	9/14	19	33.7	--
Proseed	30-20	0.2	9/17	17	29.3	--
Proseed	EL 80-093	00.9	9/14	17	30.3	--
Proseed	XT 60-09	00.9	9/14	16	26.8	--
REA	RX00749	00.7	9/20	20	35.9	43.5
REA	RX00810	00.8	9/17	19	34.0	--
REA	RX0330	0.3	9/19	18	32.6	--
REA	RX0520	0.5	9/15	19	30.7	--
Syng NK	S0006-R7X	00.6	9/15	19	31.3	--
Syng NK	S007-Y4	00.5	9/18	19	30.5	--
Syng NK	S01-C4X	0.1	9/14	17	29.3	--
Syng NK	S02-F9X	0.2	9/13	18	31.9	--
U of M	M06R-614008GT	00.8	9/18	16	30.2	--
Mean			9/16	18	31.2	43.0
CV %			4.1	13.6	20.7	--
LSD 0.05			7.2	3.5	9.1	--
LSD 0.10			6.0	2.9	7.6	--

Planted: May 15. Harvested: Oct. 8. Previous crop: corn.

¹Maturity is date of 95% brown or tan pods.**Table 41. 2019 Soybean - Irrigated, Conventional - Nesson Valley (Williston REC) - Authors, J. Jacobs and T. Tjelde.**

Company/ Brand	Variety	Maturity		Plant Height (inch)	Seed Yield	
		Group	Maturity ¹ (date)		2019	2-Yr. Avg. ------(bu/a)-----
NDSU	ND Benson	0.4	9/21	24	44.9	58.5
NDSU	ND Henson	0.0	9/17	20	39.6	53.9
NDSU	ND Rolette	00.9	9/18	22	36.6	--
NDSU	ND Stutsman	0.7	9/16	22	35.7	58.6
Mean			9/18	22	39.2	57.0
CV %			4.8	15.9	18.1	--
LSD 0.05			NS	NS	NS	--
LSD 0.10			NS	NS	9.2	--

Planted: May 15. Harvested: Oct. 8. Previous crop: corn.

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

Table 42. 2019 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 2019				Sargent 2019				Combined 2019			
			Test Weight (lb/bu)	-----Seed----- Protein Oil Yield (%) (%) (bu/a)			Test Weight (lb/bu)	-----Seed----- Protein Oil Yield (%) (%) (bu/a)			Test Weight (lb/bu)	-----Seed----- Protein Oil Yield (%) (%) (bu/a)		
Hefty	H09X9	0.9	56.7	32.5	16.9	43.2	56.6	33.4	17.3	59.9	56.6	33.0	17.1	51.5
Hefty	H11X8	1.1	58.0	32.6	17.2	53.7	57.4	33.2	17.1	60.8	57.7	32.9	17.1	57.2
Hefty	H11E9	1.1	58.8	32.7	16.4	48.2	57.1	32.9	16.6	56.3	58.0	32.8	16.5	52.3
Integra	40829N	0.8	57.4	33.2	16.5	54.9	55.9	32.8	16.8	55.0	56.7	33.0	16.6	54.9
Integra	51229N	1.2	58.2	32.2	17.4	55.4	56.4	32.4	17.2	55.3	57.3	32.3	17.3	55.4
Integra	41440N	1.4	57.1	32.1	17.0	55.7	57.5	32.4	17.1	54.6	57.3	32.2	17.1	55.2
Legacy	LS-0829E3	0.9	56.6	33.0	16.7	51.7	55.9	32.2	16.7	57.0	56.3	32.6	16.7	54.4
Legacy	LS-0830NRR2X	0.8	58.0	32.0	16.7	50.2	56.4	32.7	16.3	54.2	57.2	32.4	16.5	52.2
Legacy	LS-1220NE3	1.2	57.5	33.1	16.6	57.7	57.4	32.5	16.5	57.0	57.5	32.8	16.5	57.4
Peterson	19EN11	1.1	57.9	33.1	16.8	51.1	57.8	32.7	16.6	53.0	57.8	32.9	16.7	52.0
Peterson	20X09N	0.9	58.5	32.2	16.9	50.8	56.8	32.2	16.8	55.0	57.7	32.2	16.9	52.9
Proseed	EL80-93	0.9	57.7	32.9	17.2	48.5	56.7	32.5	16.7	56.6	57.2	32.7	16.9	52.6
Proseed	EL90-53	0.5	58.1	31.1	17.2	47.7	55.4	31.5	17.1	51.4	56.8	31.3	17.1	49.6
Proseed	EL90-83	0.8	57.4	33.6	16.4	54.9	56.3	32.7	16.7	54.0	56.9	33.2	16.6	54.4
Proseed	XT80-60	0.6	56.8	33.0	16.7	51.3	56.1	33.7	16.5	52.8	56.4	33.3	16.6	52.0
Mean			57.6	32.6	16.8	51.7	56.7	32.7	16.8	55.5	57.2	32.6	16.8	53.6
C.V. %			2.1	2.4	2.6	9.9	1.1	1.8	1.9	6.7	1.7	2.1	2.2	9.4
LSD 0.05			NS	1.3	NS	8.4	1.1	1.0	0.5	6.0	1.1	0.8	0.4	5.7
LSD 0.10			NS	1.1	NS	6.9	0.9	0.8	0.4	5.0	0.9	0.7	0.4	4.7

Planted: May 14. Harvested: Oct. 29. Previous crop: conventional soybean.

Table 43. 2019 Soybean - Enlist, RR and Xtend - Steele County - Authors, A. Johnson, H. Kandel and C. Deplazes.

Company/ Brand	Variety	Maturity Group	Test Weight (lb/bu)	Seed Oil (%)	Seed Protein (%)	Seed Yield 2019 (bu/a)
Asgrow	AG 03X7	0.3	56.8	33.1	16.3	46.9
Asgrow	AG 05X9	0.5	57.4	33.9	15.7	54.6
Asgrow	AG 06X8	0.6	59.0	33.6	16.9	47.5
Channel	0320R2X	0.3	57.9	34.1	16.0	54.2
Channel	0720R2X	0.7	55.2	33.0	16.8	51.9
Croplan	RX0200	0.2	56.6	33.0	16.8	57.2
Croplan	RX0426	0.4	57.3	33.0	16.0	57.9
Croplan	RX0500	0.5	58.1	33.7	16.0	50.5
Integra	40829N	0.8	55.8	34.4	16.2	58.6
Integra	50309NR2X	0.3	57.2	33.9	16.1	54.1
Integra	50510N	0.5	56.0	33.8	16.5	52.8
NorthStar	NS 60555NXR2	0.5	57.7	33.7	16.3	55.0
NorthStar	NS 80885NLG+	0.8	55.9	34.2	16.2	52.4
NorthStar	NS 90544NE3	0.5	57.2	32.8	16.9	55.0
NorthStar	NS 90764E3	0.7	54.9	34.1	16.3	56.4
Proseed	EL90-53	0.5	53.8	33.8	16.3	52.4
Proseed	XT60-40	0.4	55.5	33.5	16.4	50.2
Proseed	XT80-60N	0.6	56.0	34.2	16.1	51.3
Proseed	XT80-80N	0.8	56.5	33.7	16.2	52.9
Stine	07EA36	0.7	55.9	34.0	16.3	54.2
Syng NK	S03-S6X	0.3	57.5	32.3	16.0	50.7
Syng NK	S05-N5X	0.5	57.3	32.7	16.8	60.3
Syng NK	S06-K4X	0.6	57.2	33.3	15.6	46.6
Thunder	SB8807N	0.7	58.0	33.0	15.7	49.8
Thunder	SB8903N	0.3	56.9	33.2	15.6	49.8
Thunder	SB8906N	0.6	55.4	33.8	16.3	52.1
Mean			56.6	33.5	16.2	52.9
C.V. %			2.2	1.6	2.9	6.6
LSD 0.05			2.0	0.9	0.8	5.7
LSD 0.10			1.7	0.7	0.6	4.8

Planted: May 13. Harvested: Oct. 30. Previous crop: conventional corn.

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