2017 Northwest Minnesota County Variety Research Trials

Variety Plot Trial Booklet Funded by MSRPC and the Soybean Checkoff

MINNESOTA SOYBEAN RESEARCH & PROMOTION COUNCIL

Variety Trial Organizers & Participants:

- Marshall County Soybean-Corn Growers
- Pennington/Red Lake County Soybean-Corn Growers
- Polk County Soybean-Corn Growers

Special Thanks to:

- Bill Craig, Ag Service Director, Marshall & Pennington County, Project Lead
- Russ Severson, Crookston, MN, Project Support
- Dr. Angie Peltier, University of Minnesota Extension Educator, Statistical Analysis

FY 17 Soybean Production Projects Funded by the MN Soybean Research & Promotion Council

Principal Investigator	Email	Project Title (PMD)
Agronomic Research and Tech Transfer		
Jodi DeJong-Hughes	dejon003@umn.edu	Maximizing Soil Warming and Health under Different Tillage Practices in a Corn-Soybean Rotation & Corresponding Field Days
Phillip Glogoza	glogo001@umn.edu	NW Minnesota Soybean Research and Tech Transfer
Daniel Kaiser	dekaiser@umn.edu	Nutrient Management for Profitable Soybean Production in Minnesota
Daniel Kaiser	dekaiser@umn.edu	Is manganese needed for soybean production in Minnesota?
Seth Naeve	naeve002@umn.edu	Nitrogen Management is Not All About the Corn Crop: Understanding Direct and Indirect Effects of Nitrogen on Soybean
Seth Naeve	naeve002@umn.edu	The Minnesota Challenge: Interactions between SCN and IDC
Seth Naeve	naeve002@umn.edu	Soybean Production Outreach Conferences
Dave Grafstrom	dave.grafstrom@northlandcollege.edu	Soybean Management Decision Making aided with UAS, Satellite Imagery, and VRT Technology
David Torgerson	mnwheat@gvtel.com	Young Farmer Research Education and Leadership Program And On-Farm Research Network Exploratory Committee
Axel Garcia	axel@umn.edu	Effect of Novel Crops on Water and Nitrogen Use in Soybean-Corn Rotation Practices
Heather Koop	hkoop@umn.edu	Decreasing environmental impacts of soybean aphid management
Disease & SCN Management		
Kathyrn Bushley	kbushley@umn.edu	Nematode Egg Parasites and Endophytes as Antagonists of Soybean Cyst Nematode and Sudden Death Syndrome
Senyu Chen	chenx099@umn.edu	Characterization of novel SCN-resistance in soybean and virulence of SCN populations in response to SCN-resistance
Dean Malvick	dmalvick@umn.edu	Developing Critical Information to Improve Management of Key Soybean Stem and Root Diseases in Minnesota
Cody Hirsch	cdhirsch@umn.edu	High-throughput hyperspectral phenotyping to identify and understand soybean diseases
Insect Management		
Bruce Potter	bpotter@umn.edu	Understanding spatial and temporal changes in Minnesota soybean pests (Year II).
Bob Koch	koch0125@umn.edu	Soybean aphid management (2017): Insecticide resistance and biological control
Soybean Breeding, Molecular Genetics and Functional Genomics		
Walid Sadok	msadok@umn.edu	Enhancing canopy conductance to increase soybean yields and tolerance to multiple stresses in Minnesota
Sue Gibson	gibso043@umn.edu	Manipulating regulation of primary carbon metabolism to improve seed composition and yield – year two
Sue Gibson	gibso043@umn.edu	Field-testing ELP genes for effects on seed composition and yield
Gary Muehlbauer	muehl003@umn.edu	Novel traits for soybean improvement through mutagenesis and germplasm collections
Bob Stupar	stup0004@umn.edu	New biotechnology for soybean improvement
Aaron Lorenz	lore0149@umn.edu	Soybean breeding and genetics
Aaron Lorenz	lore0149@umn.edu	Advancing Varietal Resistance to Soybean Cyst Nematode in Minnesota

Coordinated County Variety Trials and Research Trials:

The data presented here is part of a coordinated effort by Minnesota county soybean growers to expand the amount of research information that soybean growers have access to in northwest Minnesota. These trials are funded by entry fees paid by participating seed companies.

There were three MN soybean counties across northern MN that participated in this coordinated effort. The results of these trials will be disseminated in the On-Farm Cropping Trials booklet which will be available at the Prairie Grains Conference, December 14, 2017 and at county soybean association meetings, or by contacting Lorri Hartel at lhartel@prairieagcomm.com.

About This Variety Plot Trial:

The County Soybean Variety Plots are randomized small plot trials. They utilized three replicated blocks in each location. The soybean plots were planted with a Haldrup small plot cone planter and harvested with a Zurn small-plot combine. For weed control, the plots were sprayed with glyphosate by the farmer-cooperator using commercial-sized equipment, utilizing driving lanes through the plots.

Data Interpretation:

Statistics are a mathematical tool used to summarize and interpret groups of numbers. For these trials statistics were used to both analyze the distribution and variance of yield data. Provided that the analysis indicated that statistical differences existed among varieties, an LSD (least significant difference) test was used to compare each variety with every other variety in the trial.

If the numerical difference in yield between two varieties is larger than the LSD value listed in the table, with 80 percent probability, the yields are considered significantly different from one another. This means that while there is an 80 percent probability that these differences are due to genetic differences between varieties, there is also a 20 percent probability that they are due to another cause such as variability in seed treatments, soil type or fertility, or other environmental factors. If the difference between two varieties is less than the LSD value, then the variety yields are considered the same. The LSD is also a measure of variability within a trial; and a higher LSD value indicates there is more variability at a location compared to a location with a lower LSD.

Coefficient of Variation (CV) is an indicator of how much variability there was within the soybean trial location (uneven seeding rate, emergence, insect damage, disease, soil type etc.) that was not due to any effect of the varieties. A CV of less than 15 indicates a very uniform trial site; therefore, differences in soybean yields are more likely the result of varieties rather than other external factors.

Relative Maturity:

Companies provided relative maturity ratings for each entry. These ratings consist of a number for the maturity group (MG) designations (000, 00, 0, 1, 2) followed by a decimal and another number, ranging from 0-9, which indicates a ranking within each MG. For example a 0.1 entry is an early group 0, while a 0.9 entry, is the latest group 0. The greater the MG value the more time is needed to complete developmental milestones.

County Variety Trials and Plot Tours:

In 2017 county soybean varietal trials were conducted in Marshall, Pennington/Red Lake, and Polk counties. The plots are conducted as random, replicated trials. The trial results are published as an average of the three replications in a booklet available in print and online for use by soybean growers and seed company representatives. This and university plot data can assist soybean producers to purchase top yielding varieties and improve soybean production and profitability within the region. County plot tours, sponsored by the University of Minnesota Extension and Minnesota Soybean Research & Promotion Council, were held in August. The plot tours allowed growers to view the plots and learn about soybean varieties from seed company representatives. Production updates were also presented by the University of Minnesota Extension researchers. Note: Varieties containing an X are Roundup Ready2Xtend® soybeans containing dicamba and glyphosate tolerant genetics.

County Collaborators:

Bill Craig, Ag Services Director, Marshall & Pennington Counties & Russ Severson, Polk County Soybean Growers, Associate Director

Characteristics of Soybean Varieties and Variety Placement Across Zones

PHYTOPHTHORA ROOT ROT is a destructive soil borne disease that can cause soybean stand loss and reduced plant productivity. The primary means of managing this disease is to plant varieties that are resistant to the pathogen. This is a bit of a 'cat and mouse' game since there are more than 55 pathogen races and approximately 8 resistance genes, designated as *Rps* genes, that offer complete resistance only to specific races. Partial resistance is also available and offers a lower level of resistance to all pathogen races. The key to managing this disease is to know which *Rps* gene is used in each soybean field you plant and make an annual evaluation of how well it is performing. For example, if you plant in two fields a variety that has an *Rps* 1k gene and notice few symptoms of Phytophthora root rot in field A but severe symptoms in areas of field B, you will want to avoid selecting varieties expressing the *Rps* 1K gene in field B in future soybean years.

SOYBEAN CYST NEMATODE (SCN) is a highly damaging pest of soybean. Surveys indicate this pest is expanding its range in NW Minnesota and testing your soil is recommended. Crop rotation and planting SCN resistant varieties are the primary means for managing this microscopic roundworm.

IRON-DEFICIENCY CHLOROSIS (IDC) scoring is based on the 2017 NDSU Roundup Ready Soybean Iron-deficiency Chlorosis Trial (author T. Helms). Data was averaged across four test sites. Follow this link for the full trial report. *https://www.ag.ndsu.edu/varietytrials/fargo-main-station/2017-trial-results/2017-ndsu-roundup-ready-iron-deficiency-chlorosis-trial/view*

See charts on bottom of next page for reference numbers.

Early Soybean Varieties - 00.8 and Earlier

Company	Variety	Relative Maturity	Seed Treatment[1]	Phytophthora Gene[2]	SCN Trait[3]	IDC Scoring[4]
Channel	00717R2X	00.7	9, 10, 18, 21	3	1	2.0
Crop Production Services	Dyna-Gro S005RY87	0.05	5, 8, 13, 19, 21	3		2.2
Crop Production Services	Dyna-Gro S005XT38	0.05	5, 8, 13, 19, 21	HR3		1.8
GoldenHarvest	GH00866	0.08	8, 5, 19	N/A	N/A	1.9
NorthStar Genetics	NS 0072R2	00.7	19, 9, 5, 21	3	NG	2.0
Peterson Farms Seed	18X008N	00.8	Other	4	1	2.0
Prairie Brand Seed	PB-00766R2	0.07	5, 8, 19	3		not listed
Thunder Seed	SB88005N	00.5	19	3		not listed
Thunder Seed	Astro R2Y	00.8	19	4		1.8
Wensman Seed	W10063NRX	0.06		3	1	2.1

Late Soybean Varieties - 0.4 and later

Company	Variety	Relative Maturity	Seed Treatment[1]	Phytophthora Gene[2]	SCN Trait[3]	IDC Scoring[4]
Channel	0518R2X	0.5	9, 10, 18, 21	1c/3a	1	2.0
Crop Production Services	Dyna-Gro S04XT77	0.4	5, 8, 13, 19, 21	5	1	2.0
Dairyland Seed	DSR-0418/R2Y	0.4	5, 8, 19, 20	3	1	1.7
GoldenHarvest	S06-Q9	0.6	8, 5, 19	N/A	1	2.2
Hefty Seed Company	H05X7	0.5	Dominace©	RPS 3A	SUS	2.4
Integra Seed	20468	0.4	21	None	1	1.7
Latham Hi-Tech Seeds	LH0485N RR2Y	0.4				not listed
Latham Hi-Tech Seeds	LH0838N RR2Y	0.8				not listed
Legacy Seed Inc	LS-0438N RR2X	0.4		-	1	2.1
NorthStar Genetics	NS 60442NXR2	0.4	19, 9, 5, 21	1	1	2.2
Proseed Inc	XT60-40N	0.4	Cruiser©	3a	1	2.0
Stine Seed	05RH26	05	None	5		not listed
Wensman Seed	W1050NRX	0.5		5	1	2.2

Medium Soybean Varieties - 00.9 - 0.3

Company	Variety	Relative Maturity	Seed Treatment[1]	Phytophthora Gene[2]	SCN Trait[3]	IDC Scoring[4]
Channel	0218R2X	0.2	9, 10, 18, 21	3	1	1.5
Channel	0317R2X	0.3	9, 10, 18, 21	3a	1	2.0
Crop Production Services	Dyna-Gro S03RY36	0.3	5, 8, 13, 19, 21	3		1.8
Dairyland Seed	DSR-C918/R2Y	0.09	5, 8, 19, 20	4		2.2
Dairyland Seed	DSR-0225R2Y	0.2	5, 8, 19, 20	3		2.1
Dairyland Seed	DSR-0305/R2Y	0.3	5, 8, 19, 20	4		2.1
GoldenHarvest	GH0145X	0.1	8, 5, 19	3	N/A	not listed
GoldenHarvest	GH0391	0.3	8, 5, 19	N/A	1	2.0
Hefty Seed Company	H009X7	0.09	Dominace©	4	SUS	1.9
Hefty Seed Company	H02X7	0.2	Dominace©	3	SUS	2.1
Hefty Seed Company	H03X7	0.3	Dominace©	RPS 3A	R3, M14	2.1
Integra Seed	20097	.09	21	3	1	2.1
Integra Seed	20126	0.1	21	5	1	2.1
Integra Seed	50319N	0.3	21	4	1	not listed
Legacy Seed Inc	LS-0135 RR2	0.1		3	-	1.9
Legacy Seed Inc	LS-0334 RR2	0.3		4	1	2.2
Legacy Seed Inc	LS-0337N RR2X	0.3		5	1	2.1
NorthStar Genetics	NS 60092XR2	00.9	19, 9, 5, 21	4	NG	1.7
NorthStar Genetics	NS 0111R2	0.1	19, 9, 5, 21	3	NG	1.9
Partners Brand Seed Co	PB00961 RR2Y	0.09	6, 9, 13, 18	4		not listed
Partners Brand Seed Co	PB0251 RR2Y	0.2	6, 9, 13, 18	5		not listed
Partners Brand Seed Co	PB0361 RR2Y	0.3	6, 9, 13, 18			not listed
Peterson Farms Seed	17X009	00.9	Other	4	N/A	2.0
Peterson Farms Seed	17R009	00.9	Other	4	N/A	not listed
Prairie Brand Seed	PB-0146R2	0.1	5, 8, 19	3	1	2.1
Prairie Brand Seed	PB-0397R2	0.3	5, 8, 19			2.1
Proseed Inc	XT60-09	0.09	Cruiser©	4		2.1
Proseed Inc	50-10	0.1	Cruiser©	3		2.2
Proseed Inc	30-20	0.2	Cruiser©	3a		2.1
Stine Seed	01RE00	01	None	5		not listed
Stine Seed	03RD66	03	None	5		2.1
Thunder Seed	SB8703	0.3	19	3		2.1
Wensman Seed	W1011RX	0.1		3		2.3
Wensman Seed	W1039NRX	0.3		4	1	2.3

SEED TREATMENTS[1]: 1-16: Fungicides / 17-19: Insecticides / 20: Inoculants / 21: Other

Ref #	*Treatment*	*Ref #*	*Treatment*	*Ref #*	*Treatment*
1	Azoxystrobin	8	Mefenoxam	15	Trichoderma harzianum Rifai
2	Bacillus pumilus	9	Metalaxyl	16	Trifloxystrobin
3	Bacillus subtilis	10	Pyraclostrobin	17	Clothianidin
4	Captan ©	11	Streptomyces griseoviridis	18	Imidacloprid
5	Fludioxonil	12	Streptomyces lydicus	19	Thiamethoxam
6	Ipconazole	13	Thiabendazole	20	Bradyrhizobium japonicum
7	Mancozeb	14	Thiram©	21	Other

Phytophthora[2]

Ref #	*Gene*
1	Rps 1a
2	Rps 1b
3	Rps 1c
4	Rps 1k
5	Rps 3
6	Rps 4
7	Rps 6
ng	No Gene

SCN Trait[3]

Ref #	*Trait*
1	PI88788
2	Peking
SUS	Susceptible
NG	No Gene

IDC Scoring[4]

Ref #	
1	Green
3	Yellow
5	Dead

Seed Treatments, Phytophthora Genes & SCN Traits listed for each variety are as reported by the seed company.

Relative maturities listed in the tables are as reported by the seed company.

EARLY MATURITY
00.8 and Earlier

Company	Variety	Relative Maturity	Marshall County (bu/ac)	Pennington/ Red Lake County (bu/ac)	Polk County (bu/ac)	Combined (bu/ac)
Wensman Seed	W10063NRX	0.06	54.8	48.4	48.0	50.4
Channel	00717R2X	00.7	39.1	50.8	52.8	47.6
Thunder Seed	SB88005N	00.5	49.8	43.1	49.1	47.3
Thunder Seed	Astro R2Y	00.8	38.5	lost plot	56.3	47.3
Crop Production Services	Dyna-Gro S005RY87	0.05	44.3	47.0	50.3	47.2
NorthStar Genetics	NS 0072R2	00.7	42.2	42.8	55.1	46.7
GoldenHarvest	GH00866	0.08	45.0	43.7	50.7	46.4
Crop Production Services	Dyna-Gro S005XT38	0.05	41.6	41.9	49.1	44.2
Prairie Brand Seed	PB-00766R2	0.07	47.8	37.9	45.4	43.7
Peterson Farms Seed	18X008N	00.8	38.0	43.8	46.0	41.4
		Mean	**44.1**	**44.3**	**50.4**	**46.2**
		CV	13.6	10.4	7.0	10.1
		LSD (0.20)	6.5	5.2	3.9	6.1
		Top 1/3	54.8 - 49.2	50.8 - 46.5	56.3 - 52.7	50.4 - 47.4
		Mid 1/3	49.1 - 43.5	46.4 - 42.1	52.6 - 49.0	47.3 - 44.3
		Bottom 1/3	43.4 - 37.8	42.0 - 37.7	48.9 - 45.3	44.2 - 41.2

MEDIUM MATURITY
00.9 - 0.3

Company	Variety	Relative Maturity	Marshall County (bu/ac)	Pennington/ Red Lake County (bu/ac)	Polk County (bu/ac)	Combined (bu/ac)
Legacy Seed Inc	LS-0337N RR2X	0.3	64.2	46.1	63.7	58.9
Proseed Inc	50-10	0.1	63.1	48.6	64.2	58.1
Channel	0317R2X	0.3	65.6	48.6	59.8	58.0
Proseed Inc	30-20	0.2	63.3	44.9	63.9	56.5
Dairyland Seed	DSR-0225R2Y	0.2	64.9	41.2	60.6	55.6
Legacy Seed Inc	LS-0135 RR2	0.1	55.6	45.1	58.9	55.3
Crop Production Services	Dyna-Gro S03RY36	0.3	61.6	50.0	53.7	55.1
Integra Seed	20126	0.1	60.8	45.7	58.2	54.9
Integra Seed	20097	.09	62.7	42.5	58.7	54.6
GoldenHarvest	GH0391	0.3	55.8	46.3	60.8	54.3
Channel	0218R2X	0.2	60.0	46.1	56.4	54.2
Legacy Seed Inc	LS-0334 RR2	0.3	59.6	44.2	58.0	53.9
Partners Brand Seed Company	PB0361 RR2Y	0.3	56.9	42.8	62.1	53.9
Proseed Inc	XT60-09	0.09	56.2	48.1	55.4	53.9
NorthStar Genetics	NS 60092XR2	00.9	60.7	44.8	55.3	53.6
Prairie Brand Seed	PB-0146R2	0.1	63.3	45.3	51.5	53.3
Partners Brand Seed Company	PB0251 RR2Y	0.2	55.3	45.7	58.7	53.2
Hefty Seed Company	H009X7	0.09	53.0	49.1	55.3	52.5
Thunder Seed	SB8703	0.3	56.1	47.9	53.4	52.5
NorthStar Genetics	NS 0111R2	0.1	61.5	40.3	55.6	52.4
Wensman Seed	W1011RX	0.1	56.3	46.8	54.2	52.4
Hefty Seed Company	H03X7	0.3	55.2	41.3	57.9	51.5
Dairyland Seed	DSR-C918/R2Y	0.09	54.2	41.2	59.0	51.5
GoldenHarvest	GH0145X	0.1	60.0	41.6	51.1	50.9
Stine Seed	03RD66	03	48.5	48.8	53.6	50.3
Integra Seed	50319N	0.3	51.9	45.5	51.9	49.8
Hefty Seed Company	H02X7	0.2	48.5	43.2	57.1	49.8
Wensman Seed	W1039NRX	0.3	53.4	40.0	54.1	49.2
Prairie Brand Seed	PB-0397R2	0.3	52.5	43.7	50.2	48.8
Partners Brand Seed Company	PB00961 RR2Y	0.09	52.6	40.4	52.9	48.6
Dairyland Seed	DSR-0305/R2Y	0.3	46.9	41.2	57.3	48.5
Peterson Farms Seed	17X009	00.9	55.0	44.8	45.2	48.3
Peterson Farms Seed	17R009	00.9	49.8	44.1	49.4	47.8
Stine Seed	01RE00	01	53.5	38.0	45.7	45.7
		Mean	**57**	**44.5**	**55.8**	**52.6**
		CV	10.5	12.0	8.4	10.5
		LSD (0.20)	6.4	NS	5.0	8.9
		Top 1/3	65.6 - 59.4	50.0 - 46.0	64.2 - 57.9	58.9 - 54.5
		Mid 1/3	59.3 - 53.1	45.9 - 41.9	57.8 - 51.5	54.4 - 50.0
		Bottom 1/3	53.0 - 46.8	41.8 - 37.8	51.4 - 45.1	49.9 - 45.5

LATE MATURITY
0.4 and later

Company	Variety	Relative maturity	Marshall County (bu/ac)	Pennington/ Red Lake County (bu/ac)	Polk County (bu/ac)	Combined (bu/ac)
Legacy Seed Inc	LS-0438N RR2X	0.4	56.1	50.3	64.1	57.9
Proseed Inc	XT60-40N	0.4	51.6	47.7	62.4	54.2
Wensman Seed	W1050NRX	0.5	50.2	47.4	59.5	52.3
NorthStar Genetics	NS 60442NXR2	0.4	52.3	43.1	59.9	51.8
Latham Hi-Tech Seeds	LH0838N RR2Y	0.8	49.3	43.0	58.2	50.3
GoldenHarvest	S06-Q9	0.6	46.7	42.6	61.0	50.1
Latham Hi-Tech Seeds	LH0485N RR2Y	0.4	49.8	44.4	55.5	49.9
Stine Seed	05RH26	05	51.7	42.7	54.1	49.5
Crop Production Services	Dyna-Gro S04XT77	0.4	47.6	46.0	59.6	49.3
Dairyland Seed	DSR-0418/R2Y	0.4	49.8	37.3	59.4	48.8
Integra Seed	20468	0.4	47.0	42.4	56.6	48.7
Channel	0518R2X	0.5	46.5	41.4	57.4	48.4
	Check		49.5	36.2	59.1	48.1
Hefty Seed Company	H05X7	0.5	47.5	41.5	56.1	46.8
		Mean	**49.5**	**43.3**	**58.8**	**50.4**
		CV	10.3	5.9	6.9	9.0
		LSD (0.20)	NS	2.6	NS	6.4
		Top 1/3	56.1 - 52.9	50.3 - 45.6	64.1 - 60.8	57.9 - 54.2
		Mid 1/3	52.8 - 49.6	45.5 - 40.8	60.7 - 57.4	54.1 - 50.4
		Bottom 1/3	49.5 - 46.3	40.7 - 36.0	57.3 - 54.0	50.3 - 46.6

FY 17 Soybean Production Projects Funded by the MN Soybean Research & Promotion Council

Mission: To help farmers turn discoveries from science into higher crop yields and enhance profit potential in the field.

Why it matters:
Unbiased production research information is vital to farmers across Minnesota. Because fewer public dollars are spent on agricultural research and extension, projects supported by the Production action team make valuable management information and new soybean cultivars available to farmers across the state.

Research Funding:
In 2017, the Production action team recommended 24 projects for funding. Checkoff dollars are leading the way to increasing soybean yield and enhancing environmental stewardship. Funded projects included developing genetic resistance to SCN, Soybean Aphid and Sudden Death Syndrome, development of biological control for soybean cyst nematode, enhancing soybean aphid management, optimizing soybean plant nutrition management and continued technology transfer program support for control of herbicide resistant weeds, optimizing soybean pest (insect and disease) management and improving soil health.

Wells Drainage Site: This 17-acre site, dedicated to soybean research, has been set up to investigate how large scale interactions of drainage with production practices will impact soybean yield and quality. Current studies being conducted include drainage interactions with tillage, soybean production practices, N management on corn and seed treatment on environmental impacts and soybean yield. Results from these cutting edge studies will be used to develop best management practices that will impact soybean profitability and environmental quality.

Conservation Tillage Conference and Soil Health Field Day: The Production action team co-sponsored the University of Minnesota Conservation Tillage Conference and the Soil Health Field Day, which demonstrated the impacts of conservation tillage, soil salinity and other agronomic practices on soil health. Farmers could see actual compaction following various tillage practices via soil pits excavated in the field. Agronomic practices were evaluated for crop and soil health responses. Several different equipment manufacturers demonstrated equipment to minimize tillage effects and provide in-furrow cover crop planting methods.

Production Project Breakout: *(See list of projects on page 2.)*

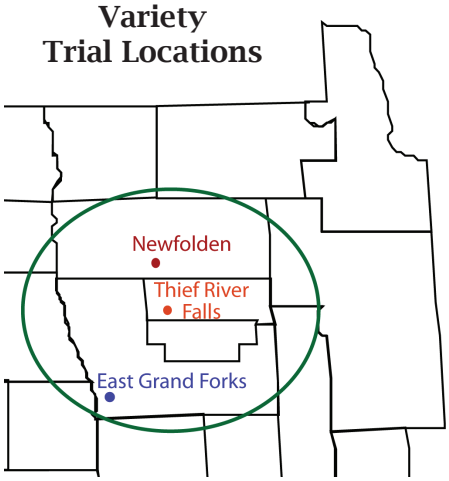
Plot Information

Marshall County Plot Cooperators:
Rodney & Jared Liedberg, Liedberg Farms
Newfolden, MN
Planting Date: May 12, 2017
Harvest Date: October 6, 2017

Pennington/Red Lake Counties:
Kyle Mehrkens, Thief River Falls, MN
Planting Date: May 12, 2017
Harvest Date: October 5, 2017

Polk County:
Kevin Krueger, K & D Farms
East Grand Forks, MN
Planting Date: May 11, 2017
Harvest Date: October 9, 2017

Variety Trial Locations



Thank you to the following companies for participating in the 2017 Soybean Variety Trials:

Channel - channel.com ▪ **Crop Production Services** - cpsagu.com
Dairyland Seed Company - Dairylandseed.com ▪ **GoldenHarvest** - goldenharvestseeds.com
Hefty Seed Company - heftyseed.com ▪ **Integra Seeds** - integraseed.com
Latham Hi-Tech Seeds - lathamseeds.com ▪ **Legacy Seed** - legacyseeds.com
NorthStar Genetics - northstargenetics.com ▪ **Partners Brand** - partnersbrandseed.com
Peterson Farms Seed - petersonfarmsseed.com ▪ **Prairie Brand** - prairiebrand.com
Proseed Inc. - proseed.net ▪ **Stine** - stineseed.com
Thunder Seed - thunderseed.com ▪ **Wensman Seed Company** - wensmanseed.com