

2017 Northwest Minnesota County Variety Research Trials

PRAIRIE GRAINS CONFERENCE
Grand Forks, ND December 14, 2017
Bill Craig, Plot Coordinator



THANK YOU COOPERATORS

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:

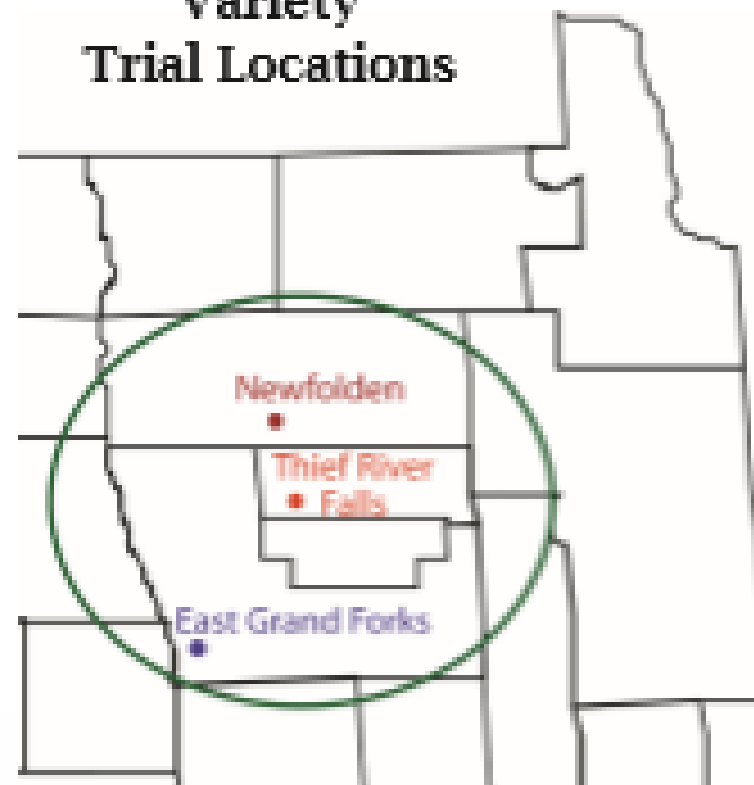
Kevin Krueger, K & D Farms

East Grand Forks, MN

Planting Date: May 11, 2017

Harvest Date: October 9, 2017

Variety Trial Locations



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.

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.

**Variety Plot Trial Booklet
Funded by MSRPC
and the Soybean Checkoff**



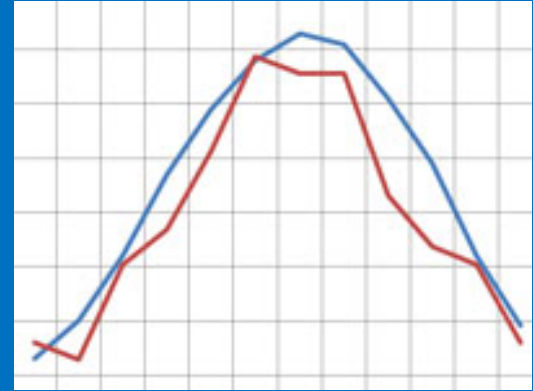
Variety Trial Organizers & Participants:

- 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

Average vs Mean



Average or mean? Are there any differences?

The term 'average' is used to express that something is statistically the norm. It would mean that a value is expected, middle, usual or common. The 'average' represents a value that would best represent a sample.

In mathematics, we normally consider average as the sum of all values divided by the number of values added. Strictly speaking, it is the 'arithmetic mean', or simply referred to as the 'mean'. The mean is almost considered synonymous with average, but statisticians will definitely disagree, because, in essence, mean is only a form of describing an average.

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	GH00886	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	48.8	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 S03RY38	0.3	61.6	50.0	53.7	55.1
Integra Seed	20128	0.1	60.8	45.7	58.2	54.9
Integra Seed	20097	.09	62.7	42.5	58.7	54.6
GoldenHarvest	GH0381	0.3	55.8	48.3	60.8	54.3
Channel	0218R2X	0.2	60.0	48.1	58.4	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 80092XR2	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-C018/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	XT80-40N	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	S08-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	20488	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

PLEASE LET YOUR SEED DEALER KNOW
THAT YOU APPRECIATE THEM
PARTICIPATING IN YOUR
COUNTY PLOT

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

Cheese lovers, listen up:



Cheese Has The Same Effect On Your Brain As Heroin

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Green Bay
Packers

THIS EXPLAINS PACKERS FANS



Green Bay
Packers

U OF M PLANTING DATE DATA

Table 1. Percent yield loss and percent potential yield at various dates of planting soybean in MN.

Planting date	% of yield loss	% potential yield
5-10	0	100
5-20	3	97
5-30	9	91
6-10	18	82
6-20	30	70
6-30	43	57

TWO YEARS OF DATA CROOKSTON MN RUSS SEVERSON, U OF M EXTENSION

Table 2. Planting date and percent yield from 2007-08

Planting date	2007 % yield	2008 % yield
4-25	100	100
5-2	100	98
5-9	100	96
5-26	98	92
5-30	90	87
6-5	75	81

- SOYBEANS ARE SENSITIVE TO DAY LENGTH FOR INITIATING FLOWERING AND MATURITY; THESE EVENTS ARE TRIGGERED BY THE LENGTH OF THE NIGHT OR DARK PERIOD.

WHEN VARIETIES ARE PLANTED BEFORE THE MIDDLE OF JUNE, FLOWERING IS TRIGGERED BY SHORTER DAYS AFTER JUNE 21.

FOR EACH THREE TO FIVE DAY DELAY IN PLANTING, FLOWERING AND MATURITY ARE DELAYED ONLY ABOUT ONE DAY.



THEREFORE IF YOU PLANT THE SAME VARIETY ON MAY 10 AND JUNE 10 THE BLOOMING AND MATURITY OF THE LATER PLANTING IS DELAYED ABOUT 6 TO 10 DAYS.



Figure 1. Difference in maturity on September 5, 2007 for the same soybean variety when planted 4/25 vs. 6/11.

U OF M SEEDING RATE RECOMMENDATIONS

Maturity group II soybeans	140,000 live seeds per acre
Maturity group I soybeans	150,000 live seeds per acre
Maturity group 0 soybeans	160,000 live seeds per acre
Maturity group 00 soybeans	170,000 live seeds per acre

CAUTIONS

- ❖ Recommendations are independent of row spacing
- ❖ Recommendations are based on live seed. Carefully examine germ rates on seed tags
- ❖ Seeding rate suggestions are based on excellent to ideal planting conditions. Planting early into cold and/or wet soils may require increased seeding rates. Seeding into heavy clay soils will likely require greater seeding rates when compared with light or sandy soils
- ❖ Seeding with planting equipment that distributes the seed poorly either linearly or vertically will require greater seeding rates. Likewise, greater seeding rates will be required when planted at excessive speeds
- ❖ Soybeans planted in high pH areas that are prone to iron deficiency chlorosis (IDC) may benefit from higher seeding rates.

- Soybean yields have not varied significantly over a wide range of plant populations. A plant population of approximately 150,000 plants per acre is desirable regardless of row spacing.



- If planting in narrow row spacings (less than 10 inches), we suggest soybean seeding rates be adjusted upward.
- We recommend seeding rates of 175,000 seeds per acre in 20 in 12- to 15-inch row spacings and 200,000 seeds per acre when drill seeding.

QUESTIONS?