

AGRONOMY RESEARCHUPDATE & PIONEER.





Soybean Productivity on Raised Seedbeds

Objectives

- · Evaluate soybean yield and response when grown on raised seedbeds compared with conventional tillage in flat land areas prone to soil water logging.
- Assess the effect of tile drainage on soybean production.

Study Description

Plot Layout: 4-row randomized plots

Replicates: 4 per location

Factors: Raised seedbed vs. flat

Tile drainage vs. no tile drainage

2012 Raised Beds Locations: Fargo and Prosper, ND,

Hitterdal, Rothsay, and Barnesville, MN.

2013-2014 Raised Beds Locations: Fargo and Casselton, ND.

2011-2014 Tile Drainage Location: Fargo, ND.



Raised bed



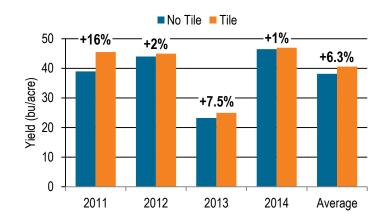
Flat

Results

- In 2014, when averaged across three locations, a significant difference was observed in stand count, vigor, iron chlorosis score, height, and yield between soybean grown on raised beds compared to flat land.
- These results are similar to trends observed in 2013.
- During the dry 2012 growing season, there were no yield differences observed between raised beds and flat land.
- Tile drainage did not significantly affect yield in 2012 or 2014.
- On average, tile drainage resulted in a 6.3% yield increase over the 2011-2014 period.

Tillage	Stand Count	Vigor ¹	IDC ²	Height
	plants/acre	1-9	1-5	cm
Flat	109,850	4.8	2.4	58.5
Raised bed	136,850	5.7	2.2	61.6
LSD (P=0.10)	7,525	0.8	0.15	2.7

¹ Vigor: 1 is poor, 9 is best.



Tillage	Yield 2012 ¹	Yield 2013 ²	Yield 2014 ²
	bu/acre	bu/acre	bu/acre
Flat	44.6	30.3	49.7
Raised bed	44.4	33.4	51.7
LSD (<i>P</i> =0.10)	NS	2	1.8

¹ Averaged across 5 locations.

Research conducted by Hans Kandel, North Dakota State University as a part of the DuPont Pioneer Crop Management Research Awards (CMRA) Program. This program provides funds for agronomic and precision farming studies by university and USDA cooperators throughout North America. The awards extend for up to four years and address crop management information needs of DuPont Pioneer agronomists, customers, and Pioneer sales professionals.

2014 data are based on average of all comparisons made in North Dakota locations through October 2014. Multi-vear and multi-location is a better predictor of future performance. Do not use these or any other data from a limited number of trials as a significant factor in product selection. Product responses are variable and subject to a variety of environmental, disease, and pest pressures. Individual results may vary.

² Iron deficiency chlorosis: 1 is green plant tissue, 5 is dead tissue.

² Averaged across three locations: Fargo (tile), Fargo (no tile), and Casselton.