

Row Configuration, Planting Rate and RM of Grain Corn at Minot

Summary: The main objective of this trial was to compare single row and twin row planting configurations. Trials were planted during the 2017, 2018 and 2020 growing seasons with a SRES small plot planter using Great Plains no-till openers and Monosem seed singulation meters. The twin row configuration consists of 10 inch paired rows that are planted on 30 inch centers. This configuration is common with some crops such as peanut and with corn in some regions of the country. A twin row configuration allows for more plant to plant growing space within each row compared to traditional single rows. These trials also included 3 planting rates of two hybrids with distinctly different maturities. Comparisons between row configurations showed twin rows producing higher plant stands which translated into 8 more bushels of yield on average than single rows. 30k and 35k planting rates produced statistically similar plant stands and grain yields. As would be expected, there were differences between the hybrids with the later maturing hybrid producing significantly higher yields. In conclusion, these results show benefits of using a twin row configuration, a planting rate of 30k produced optimum yields and the 85 day hybrid was better suited for this environment.

Combined Means - Row Configuration

Row Configuration	Harvest Stand	Days to Silk	Ear Height	Harvest Moisture	Test Weight	Grain Yield
	plants/A	DAP*	inches	%	lbs/bu	bu/A
30" Single	27,066a	69a	35a	20.7a	58.1a	93.5a
30" Twin	31,137b	69a	35a	21.4a	58.6a	101.6b

Means followed by the same letter within each column were not statistically different.

Combined Means - Planting Rate

Planting Rate	Harvest Stand	Days to Silk	Ear Height	Harvest Moisture	Test Weight	Grain Yield
Seeds/A	plants/A	DAP*	inches	%	lbs/bu	bu/A
25k	23,735a	69a	35a	21.2a	58.8a	88.6a
30k	30,549b	69a	36a	20.6a	57.9a	101.9b
35k	33,020b	69a	35a	21.4a	58.3a	102.0b

Means followed by the same letter within each column were not statistically different.

Combined Means - Hybrid

Hybrid	Harvest Stand	Days to Silk	Ear Height	Harvest Moisture	Test Weight	Grain Yield
RM	plants/A	DAP*	inches	%	lbs/bu	bu/A
76 day	28,942a	67a	35a	20.5a	59.4a	85.4a
85 day	29,261a	71b	36a	21.6a	57.2b	109.6b

Means followed by the same letter within each column were not statistically different.

**Days after planting.*

Planting Date: May 15, 2017, May 14, 2018 and May 19, 2020

Harvest Date: Oct. 21, 2017, Oct. 11, 2018 and Oct. 12, 2020

Previous Crop: 2016 = Barley, 2017 = Soybean and 2019 = wheat

Tillage System: Minimum Till

Soil Type: Williams Loam

Test Weight and Yield are adjusted to 15.5% moisture