

NDSU North Central Research Extension Center, Minot
2017 Confection Sunflower Row Spacing and Seeding Rate Trial at Minot

Row Spacing	Seeding Rate	Plant Stand	Days to 50% Blm	Days to Mature	Plant Height	Harvest Moisture	Seed Over Screen			Test Weight	Yield
							>22/64	>20/64	>18/64		
	seeds/A	plants/A	DAP*	DAP*	inches	%	-----%-----			lbs/bu	lbs/A
30"	15,000	8,483	66	111	55	16.3	25	45	48	27.5	2478
	20,000	6,649	66	112	58	17.7	24	42	45	27.1	1856
	25,000	13,450	66	111	61	14.4	26	41	47	27.2	2427
	30,000	14,749	66	111	60	13.4	28	42	48	26.9	2958
Twin Row	15,000	12,151	65	111	58	14.0	25	40	46	27.0	2483
	20,000	13,832	65	112	60	16.6	26	41	47	28.2	2297
	25,000	16,278	66	111	61	15.5	27	40	46	27.2	2379
	30,000	20,175	65	111	61	13.5	29	38	48	27.7	3003
15"	15,000	11,157	66	111	58	13.9	27	44	49	26.3	2048
	20,000	14,214	66	111	60	14.5	25	39	44	26.3	2863
	25,000	15,055	66	111	59	17.1	26	40	47	27.7	2661
	30,000	19,335	66	111	57	17.0	29	43	50	28.6	3116
C.V.%		8.8	1.5	0.8	4.9	13.9	7.4	7.5	8.2	3.7	12.7
LSD 5%		2,056	NS	NS	NS	NS	NS	NS	NS	NS	546

Combined Means-Row Spacing

Row Spacing	Plant Stand	Days to 50% Blm	Days to Mature	Plant Height	Harvest Moisture	Seed			Test Weight	Yield
						>22/64	>20/64	>18/64		
	plants/A	DAP*	DAP*	inches	%	-----%-----			lbs/bu	lbs/A
30"	10,833	66	111	58	15.4	26	42	47	27.2	2430
Twin Row	15,609	65	112	60	14.9	27	40	47	27.5	2541
15"	14,940	66	111	59	15.6	27	41	47	27.2	2672
LSD 5%		2,056	NS	NS	NS	NS	NS	NS	NS	NS

Combined Means-Seeding Rates

Seeding Rate	Plant Stand	Days to 50% Blm	Days to Mature	Plant Height	Harvest Moisture	Seed			Test Weight	Yield
						>22/64	>20/64	>18/64		
	plants/A	DAP*	DAP*	inches	%	-----%-----			lbs/bu	lbs/A
15,000	10,597	66	111	57	14.7	26	43	48	26.9	2336
20,000	11,565	66	112	59	16.3	25	41	45	27.2	2339
25,000	14,928	66	111	60	15.7	26	40	47	27.4	2489
30,000	18,086	66	111	59	14.6	29	41	49	27.7	3026
LSD 5%		2,644	NS	NS	NS	2	NS	NS	NS	367

*Days after planting.

NS = No statistical difference between treatments.

Planting Date: May 23

Hybrid: Nuseed Panther DMR

Harvest Date: October 22

Previous Crop: Barley

Soil Type: Williams Loam

Test weight and yield are adjusted to 10% moisture.

Summary: The main objective of this trial was to compare 15", 30" and twin row configurations using four different seeding rates. The trial was planted 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 row configuration is common with some crops such as peanut and corn in some regions of the country. 15" and twin row configurations allow for more plant to plant growing space within each row compared to 30" single rows. Average plant stands were significantly higher for twin rows and 15" rows compared to 30" rows however, these differences did not correlate with yield. There was no statistical difference between row configurations for any agronomic, seed quality or yield characteristic. The highest seeding rate produced a significantly higher yield and percentage of large seeds than the other seeding rates. In conclusion, sunflowers are known for their ability to flex their head size according to plant populations and growing conditions, and this ability was expressed in this trial. Higher plant populations produce smaller heads, but not smaller seed size, which dry down more quickly and tend to have less lodging. This trial showed a yield advantage from planting at higher seeding rates without lowering seed quality. There was no advantage or disadvantage to using any particular row configuration. This trial will need to be repeated in order to verify these findings.