



Influence of Seeding and Irrigation Rates on Corn Product Performance in Northeast Nebraska

Trial Objective

- Information is needed on how seeding and irrigation rates influence corn product performance.
- This study was designed to assess corn products across multiple seeding rates and two irrigation environments to help growers select products and seeding rates for the irrigation environment on their farm.

Research Site Details

Location	Soil Type	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield (bu/acre)	Seeding Rate (seeds/acre)
Battle Creek, NE	Loamy sand	Corn	Conventional	5/2/19	10/28/19	215	Variable

- Ten corn products ranging from relative maturities (RM) of 108 to 113 were evaluated.
- The trial was a split-plot design with irrigation as the whole plot and corn product by seeding rate as the subplot. Treatment combinations were replicated twice.
- Two irrigation rates were used:
 - Full irrigation (100% FI) – 7.6 inches/acre
 - 50% of FI – 3.8 inches/acre
- In addition to irrigation, 23.7 inches of rainfall occurred during the growing season.
- For both irrigation rates, the ten corn products were planted at 32, 36, and 40K (K=000s) seeds/acre.
- At 100% FI, the ten products were also planted at 24, 44, and 50K seeds/acre.
- At 50% FI, the ten products were also planted at 18, 28, and 48K seeds/acre.
- Weeds were managed uniformly, and no fungicides or insecticides were applied.

Understanding the Results

- The performance of each corn product under the different seeding rates stresses the importance of knowing the optimum seeding rate for each product (Table 1).
- As a general trend, yields were greater at higher seeding rates. However, on an individual product basis, 44,000 seeds/acre was better than 50,000 seeds/acre under 100% FI and 36,000 seeds/acre was better than 40,000 or 48,000 seeds/acre under 50% of FI for some products. Several products exhibited much better yield performance with 100% FI, three products had similar yields under both irrigation rates, and a couple products had better yield performance under 50% of FI.



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Table 1. Corn product performance (bu/acre) as influenced by seeding rate (K=000s/acre) and irrigation environment at Battle Creek, NE in 2019 (100% FI received a total of 31.3 inches/acre and 50% of FI received a total of 27.5 inches/acre).

Planting Rates (000's/acre) and Average Yield (bu/acre) of Each Corn Product at Two Irrigation Rates										
Corn Product	Irrigation Rate	18K	24K	28K	32K	36K	40K	44K	48K	50K
108RM-A	FI		192		227	219	214	214		224
	50% FI	197		209	236	228	233		233	
108RM-B	FI		173		188	193	189	197		206
	50% FI	146		180	197	189	199		203	
109RM-E	FI		208		224	226	241	258		241
	50% FI	177		210	231	235	233		249	
111RM-A	FI		188		214	216	205	213		201
	50% FI	161		188	184	204	203		199	
111RM-D	FI		213		224	214	239	243		228
	50% FI	181		208	223	217	221		230	
111RM-E	FI		220		219	224	231	227		230
	50% FI	170		225	219	210	227		239	
112RM-A	FI		199		223	222	212	228		217
	50% FI	164		211	225	229	208		207	
112RM-B	FI		188		222	221	231	229		216
	50% FI	176		208	216	209	215		183	
113RM-B	FI		175		206	214	215	195		203
	50% FI	155		187	225	189	197		224	
113RM-E	FI		202		218	230	216	225		221
	50% FI	181		201	213	221	222		215	

Key Learnings

- Corn products differ in their response to irrigation amount and seeding rate.
- Producers should consider their irrigation and precipitation environment when making product and seeding rate decisions to achieve the best yield potential on that acre.
- Growers should consult their local seed sales team for information on how their branded products performed in the study.

Legal Statements

The information discussed in this report is from a single site, replicated demonstration. This informational piece is designed to report the results of this demonstration and is not intended to infer any confirmed trends. Please use this information accordingly.

Performance may vary, from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the grower's fields. ©2019 Bayer Group. All rights reserved. 1021_R3

