

CORN PRODUCT PERFORMANCE INFLUENCED BY SEEDING AND IRRIGATION RATE

TRIAL OVERVIEW

- Managing irrigated corn production is intensive and demanding as farmers try to extract value out of every input.
- There are many interactions in the field that impact yield potential, including seeding rate, irrigation environment, and corn product. This study was designed to evaluate the interaction of these factors on the yield potential of different corn products.

RESEARCH OBJECTIVE

- Evaluate the effect of different seeding rates under full and limited irrigation on corn product yield potential to aid producers in selecting the optimal corn products and planting populations for the irrigation environment on their farm.

Location	Soil	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield/Acre	Planting Rate/Acre
Gothenburg, NE	Hord silt loam	Corn	Conventional	05/07/2017	11/01/2017	240 bu/acre	24K, 30K, 36K, and 42K

SITE NOTES:

- 21 corn products were tested with RM ranging from 105 to 116.
- Two irrigation rates were used:
 - 100% full irrigation (FI) to meet the evapotranspiration demands of the crop (totaling 6 inches)
 - 50% of FI (totaling 3 inches)
- Irrigation treatments were applied using a variable rate irrigation system.
- The study design was a split-split plot with irrigation as the whole plot, corn product as the first split, and planting density as the second split.
- Watermark granular matrix soil moisture sensors were installed before tassel to track soil moisture.
- Weeds were controlled uniformly across the study and no fungicides or insecticides were applied.

UNDERSTANDING THE RESULTS

- There was a general trend across corn products for higher yields at the 36,000 or 42,000 seeds/acre seeding rates.
 - For the 100% FI treatment, 42,000 seeds/acre provided the highest yield potential.
 - For the 50% FI treatment, 36,000 seeds/acre provided the highest yield potential.
- The response of some corn products differed from the generalized trend. For example, the 114RM-B product yielded the highest at 30,000 seeds/acre at both irrigation rates.

WHAT DOES THIS MEAN FOR YOUR FARM?

- Farmers should select corn products that have shown good performance in the seeding rate and irrigation environments on their farm.
- Producers should work with their local seed sales team to identify how their branded corn products performed in this study.
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Corn product	Seeding Rate (seeds/acre)				Average yield
	24K	30K	36K	42K	
105RM-A	200	207	216	214	209
100% FI	202	217	217	230	216
50% FI	196	187	214	182	195
105RM-B	202	215	225	231	218
100% FI	207	232	231	248	229
50% FI	198	197	219	214	207
106RM-A	197	214	231	232	218
50% FI	197	214	231	232	218
106RM-B	202	206	226	225	215
100% FI	202	223	235	243	226
50% FI	201	190	217	208	204
108RM-A	206	220	215	210	213
100% FI	213	235	233	229	228
50% FI	198	204	196	192	197
108RM-B	209	240	232	225	226
100% FI	217	247	239	253	239
50% FI	200	232	224	197	213
109RM	194	214	213	225	212
100% FI	211	237	231	252	233
50% FI	176	192	194	199	191
110RM-A	210	230	240	235	229
100% FI	219	245	261	253	245
50% FI	201	215	218	217	213
110RM-B	205	227	233	235	225
100% FI	208	228	235	242	228
50% FI	203	227	231	228	222
110RM-C	194	206	209	209	204
100% FI	196	209	198	212	204
50% FI	192	203	220	206	205
112RM-A	193	205	205	202	201
100% FI	183	204	219	194	200
50% FI	203	206	191	210	202
112RM-B	205	220	230	214	217
100% FI	218	234	249	229	232
50% FI	192	206	210	198	202
112RM-C	203	232	228	228	223
100% FI	211	247	251	265	243
50% FI	194	218	205	191	202
113RM-A	204	232	231	225	223
100% FI	212	239	240	243	233
50% FI	196	226	222	207	213
113RM-B	187	204	199	194	196
100% FI	179	213	211	199	200
50% FI	196	195	188	189	192
113RM-C	207	223	208	223	215
100% FI	219	246	233	263	240
50% FI	195	200	183	184	190
113RM-D	210	220	240	219	222
100% FI	207	212	230	216	216
50% FI	213	228	250	222	228
114RM-A	220	234	244	249	237
100% FI	237	260	253	268	255
50% FI	203	208	235	231	219
114RM-B	212	241	234	240	232
100% FI	222	253	246	252	243
50% FI	202	230	221	227	220
115RM	223	244	256	261	246
100% FI	232	247	259	274	253
50% FI	214	241	252	249	239
116RM	233	257	260	262	252
100% FI	234	265	271	294	262
50% FI	232	250	249	245	244
Average	206	224	228	227	221

Table 1. Corn product performance influenced by seeding rate and irrigation

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