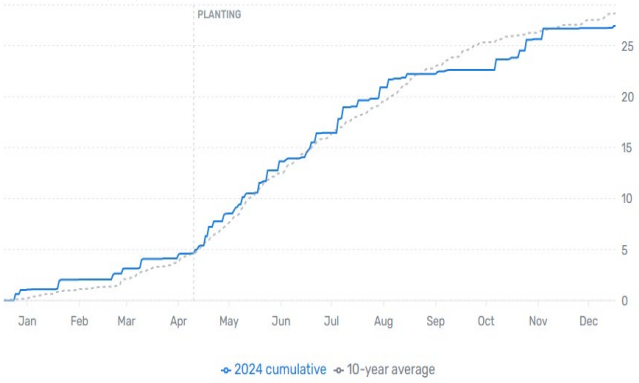
Corn Hybrids and Planting Population

Study ID: 1538001202401
County: Adams
Soil Type: Hastings silt loam
Planting Date: 4/24/24
Harvest Date: 10/18/24
Population: Variable
Row Spacing (in): 36”
Variety: Variable
Reps: 6
Previous Crop: Soybean
Tillage: No-Till
Herbicides: ***Pre:*** glyphosate + atrazine + Trivolt® + dicamba ***Post:*** glyphosate + Harness Max® + atrazine + DiFlexx®
Seed Treatment: Company standard
Foliar Insecticides: None
Foliar Fungicides: 8 oz/ac Delaro Complete® + 5 oz/ac Hero applied on 7/17/24. 10.5 oz/ac Quilt® Xcel applied on 8/15/24.

Fertilizer: 200 lbs/ac 11-52-0 + 31 lbs/ac 90% Agrisol®
Irrigation: Pivot
Rainfall (in):



Introduction:

The selection of a corn hybrid that is grown in a specific field can affect the harvested yield. In addition, hybrids can respond differently to the number of seeds that are planted. Thus, it is important to test the combination of hybrid and planting rate for specific farm conditions. Two corn hybrids were planted in a paired comparison at three different populations in an irrigated field in Adams County, Nebraska. Each half of the planter was loaded with a different hybrid and the seeding rate was changed with each full pass through the field. Each treatment combination was replicated six times.

Results:

	Target Population	Stand Counts (plants/acre)	Moisture (%)	Yield (bu/ac)†	Marginal Net Return‡ ($/ac)
DEKALB® DKC62-89	32,000 seeds/ac	31,167 C*	14.0 A	260 B	1014 A
	36,000 seeds/ac	35,667 B	14.0 A	267 A	1027 A
	40,000 seeds/ac	37,833 A	14.0 A	269 A	1023 A
P-Value:		<0.001	0.56	0.001	0.26
Fontanelle® 13DT621	32,000 seeds/ac	31,833 C	14.7 A	252 B	973 A
	36,000 seeds/ac	35,500 B	14.7 A	254 AB	968 A
	40,000 seeds/ac	39,500 A	14.7 A	256 A	963 A
P-Value:		<0.001	0.94	0.03	0.34

*Values with the same letter are not significantly different at a 90% confidence level.
†Bushels per acre corrected to 15.5% moisture.
‡Marginal net return based on $4.35/bu corn, DEKALB® DKC62-89 seed cost: 32,000 seeds/ac- $118/ac, 36,000 seeds/ac- 132.75/ac, 40,000 seeds/ac 147.50/ac. Fontanelle® 13DT621 seed cost: 32,000 seeds/ac- $122/ac, 36,000 seeds/ac- $137.25/ac, 40,000 seeds/ac- $152.50/ac.

Summary:

- There were significant differences between stand count and yield for both hybrids.
- Planting DEKALB® DKC62-89 at a target seeding population of either 36,000 or 40,000 seeds/ac yielded higher (267 bu/ac; 269 bu/ac) than at a seeding rate of 32,000 seeds/ac (260 bu/ac) With this, marginal net return was similar between the three target populations when planting this variety.
- Planting Fontanelle® 13DT621 at 40,000 seeds/ac yielded higher than at 32,000 seeds/ac.
- There were no significant differences for moisture or marginal net return for either hybrid or any of the treatments, indicating increasing seeding rates improved yields but did not overcome the increased seed costs
- Further research is needed to determine optimum seeding rates for hybrids in different conditions.