NORTERA

PROJECT TITLE
Sweet Corn Planting Populations (2023)

BACKGROUND

Optimum final plant density is required to ensure maximum factory recovery and field yield. Work was done over 10 years ago to determine the optimum planting population for sweet corn. Since then, very few hybrids tested at that time are still being planted today and the planting population recommendation may no longer be viable. Similarly, only one optimum planting population was established at the time. As genetics improve, some hybrids may express greater stress tolerance, particularly to crowding stress.

OBJECTIVE

Evaluate 5 commercial sweet corn hybrids on their response to varying planting density in regards to yield and theoretical recovery.

MATERIALS & METHODS

The trial was conducted as a randomized complete block design, replicated 4 times in plots seeded 4 rows wide, 20' long. All hybrids were evaluated at the following planting populations: 15,000, 20,000, 25,000, 30,000

All crop nutrition and weed control was managed as per industry standard.

Plots were evaluated to confirm the desired final plant stands were met at the 3-leaf stage by counting the number of plants emerged in the middle 2 rows of each plot.

At harvest, all cobs were harvested from the middle two rows of each plot, sorted by cob diameter (>2" and <2") and each size category was weighed. It is assumed that ears less than 2" in diameter would not be harvested mechanically.

RESULTS

Across all hybrids tested, increasing plant density resulted in fewer ears per plant. As expected, each hybrid tested reacted differently to changes in plant density. Overall, increasing plant density reduced average harvestable ear weight as well, however different hybrids responded more dramatically than others in this way. It is important to note that certain processing parameters are impacted by the hybrid reacting to changes in plant density, however are not discussed in this report.

This project will conclude after the 2025 growing season, compiling three years of project data.

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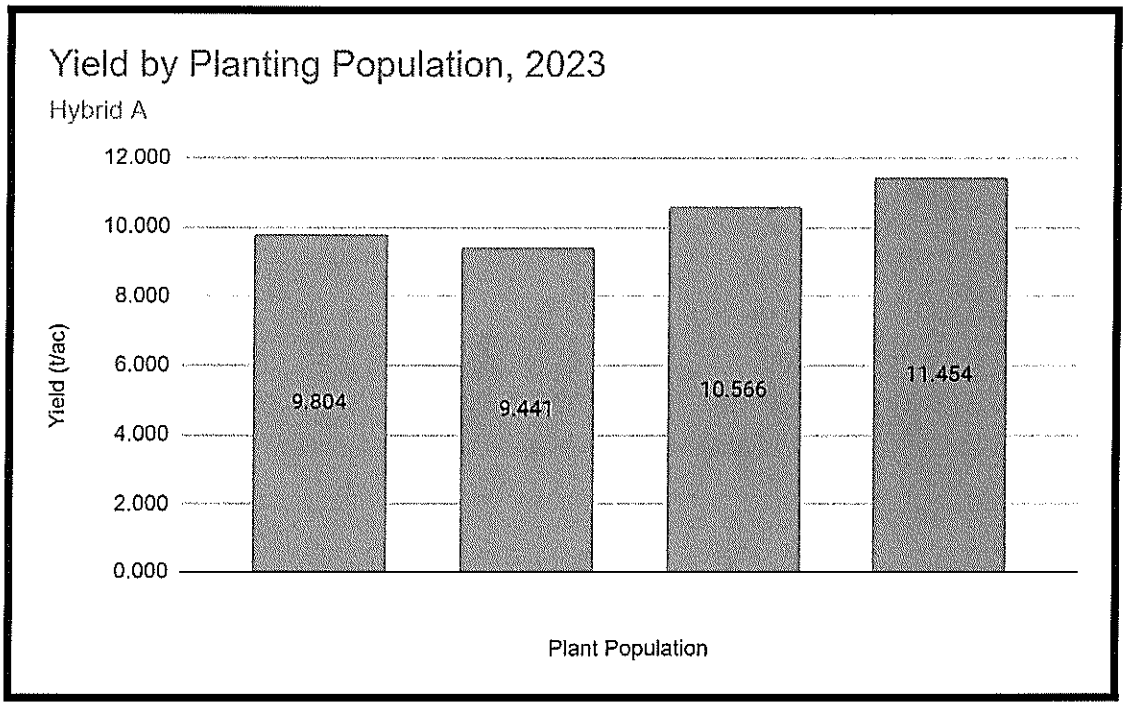
Variety	Population	Cobs Harvested	Cobs/ Plant	Weight of Harvested Cobs (lbs)	% Harvestable (Count)	% Harvestable (Weight)	Average Harvestable Cob Weight	Estimated Yield (t/ac)	Standard Deviation	Comments
Hybrid A	15,000	24.75	1.65	21.17	85.36%	92.77%	0.935	9.804	0.437	
Hybrid A	20,000	28.50	1.43	21.13	75.05%	88.76%	0.893	9.441	1.660	
Hybrid A	25,000	26.50	1.06	21.66	94.35%	97.49%	0.847	10.566	0.641	
Hybrid A	30,000	30.75	1.03	23.16	98.39%	98.90%	0.758	11.454	0.287	
Hybrid B	15,000	13.75	0.92	21.76	81.81%	91.04%	0.881	9.905	0.000	Average of 2 reps
Hybrid B	20,000	26.25	1.31	21.65	79.90%	91.87%	0.952	9.958	1.107	
Hybrid B	25,000	26.25	1.05	22.22	97.21%	98.49%	0.858	10.943	0.512	
Hybrid B	30,000	28.75	0.96	23.75	90.33%	94.29%	0.866	11.194	0.546	
Hybrid C	15,000	20.00	1.33	19.78	95.30%	97.16%	1.011	9.601	0.575	Average of 3 reps
Hybrid C	20,000	25.25	1.26	22.93	85.46%	89.76%	0.962	10.295	1.424	
Hybrid C	25,000	25.75	1.03	22.88	83.95%	87.31%	0.922	10.191	3.111	
Hybrid C	30,000	29.00	0.97	24.95	86.15%	90.99%	0.928	11.343	1.241	Average of 3 reps
Hybrid D	15,000	31.50	2.10	24.66	73.27%	91.41%	1.014	11.263	0.333	
Hybrid D	20,000	26.25	1.31	23.35	87.37%	94.66%	0.986	11.029	0.576	
Hybrid D	25,000	36.50	1.46	27.37	69.70%	90.04%	0.972	12.273	0.782	
Hybrid D	30,000	31.75	1.06	25.30	90.72%	96.39%	0.855	12.215	1.202	
Hybrid E	15,000	19.75	1.32	17.05	80.03%	90.85%	0.984	7.730	0.260	
Hybrid E	20,000	23.00	1.15	19.51	82.73%	86.10%	0.885	8.411	0.812	
Hybrid E	25,000	24.67	0.99	20.61	70.25%	77.58%	0.921	7.997	1.209	Average of 3 reps
Hybrid E	30,000	26.50	0.88	20.82	71.78%	74.77%	0.822	7.789	0.451	



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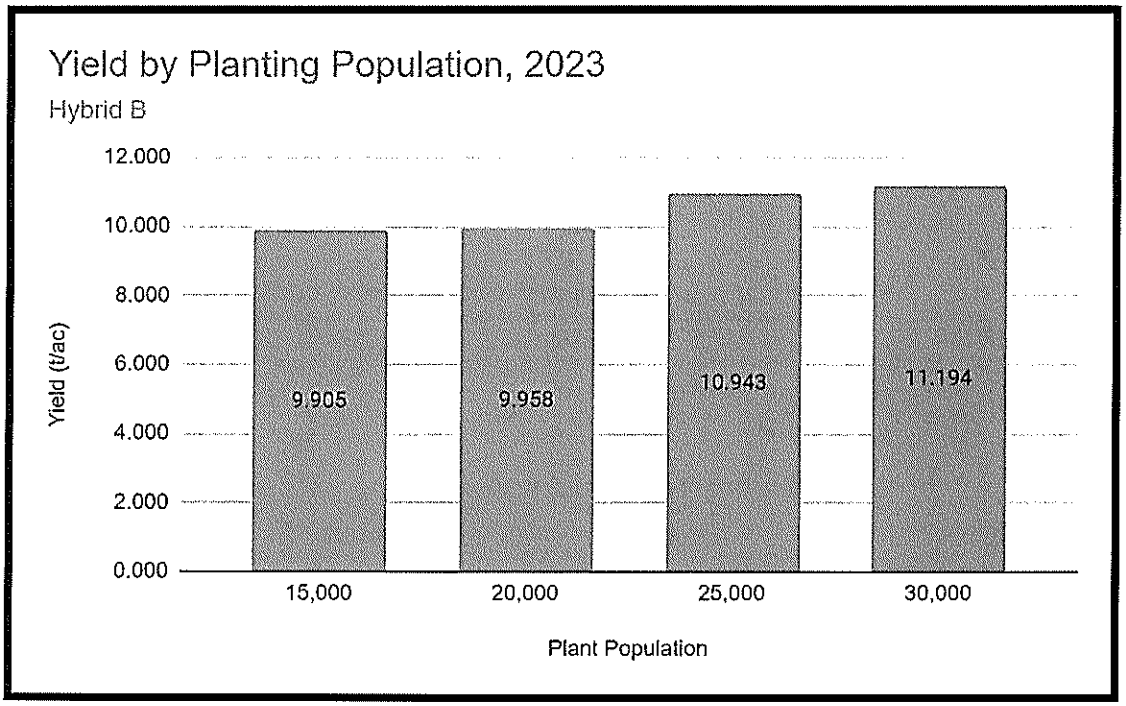

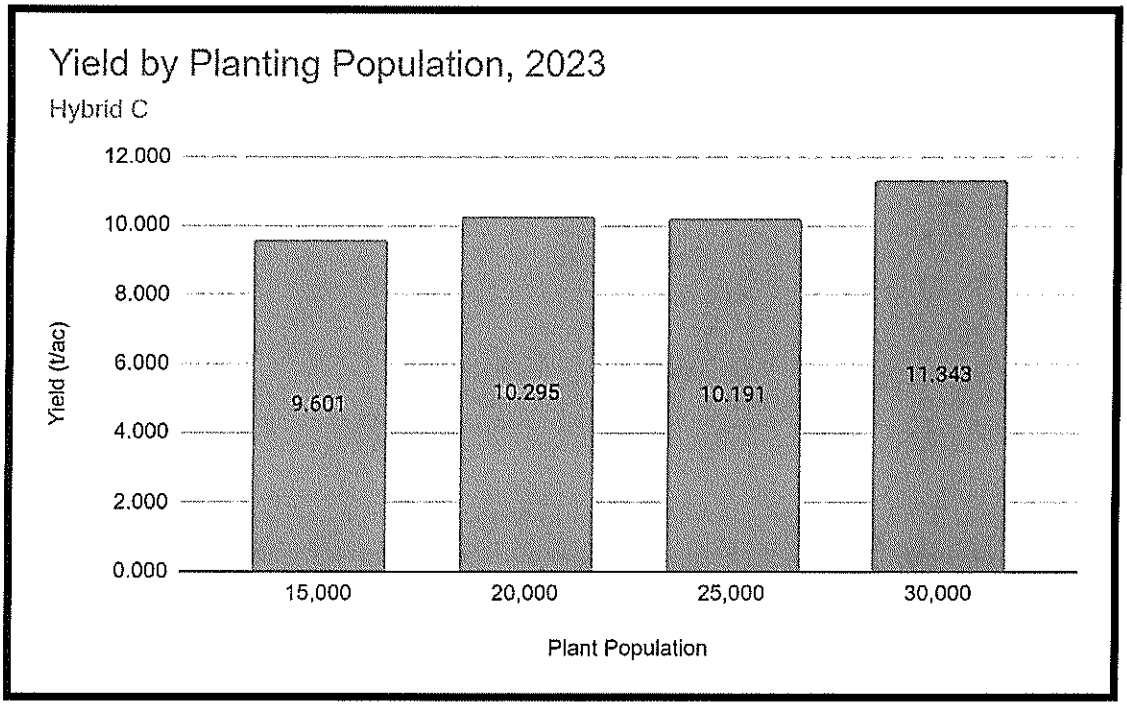

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