Corn Planting Date by Maturity Trial

Ken Pecinovsky, farm superintendent, Research Farms
Mark Licht, associate professor, Department of Agronomy

Objective

To evaluate how corn hybrid maturity and planting date influence grain yield.

Materials and Methods

Site-Year 1, Nashua 2022

Soil type	Kenyon
Previous crop	Soybeans
Cultivar	Multiple, see treatments below
Planting date	Multiple, see treatments below
Row spacing	30-in.
Seeding rate	35,077 seeds/acre
Tillage	Spring field cultivation on April 12, 2022
Fertilizer	None, Fall 2021 soil test Melich-3 P = 28ppm, soil test Melich-3 K = 237ppm
Nitrogen	178 lbs. N/acre as anhydrous ammonia on April 10, 2022
Harvest date	October 26, 2022
Experimental design	Randomized complete block design
Replications	Four
Treatments	Four dates of planting (April 12, April 27, May 16, June 1) and three hybrids (P0075Q, P0589AM, P1185Q)

Site-Year 2, Nashua 2023

Soil type	Kenyon
Previous crop	Soybeans
Cultivar	Multiple, see treatments below
Planting date	Multiple, see treatments below
Row spacing	30-in.
Seeding rate	35,077 seeds/acre
Tillage	Spring field cultivation on April 10, 2023
Fertilizer	130 # P/ac as 11-52-0 and 270 # K/ac as 0-0-60 on November 9, 2022 Fall 2022 soil test Melich-3 P = 26ppm, soil test Melich-3 K = 242ppm
Nitrogen	200 lbs. N/acre as anhydrous ammonia on April 8, 2023
Harvest date	October 16, 2023
Experimental design	Randomized complete block design
Replications	Four
Treatments	Four dates of planting (April 14, April 27, May 16, June 1) and three hybrids (P00177AM, P05737AM, P1185Q)

Results

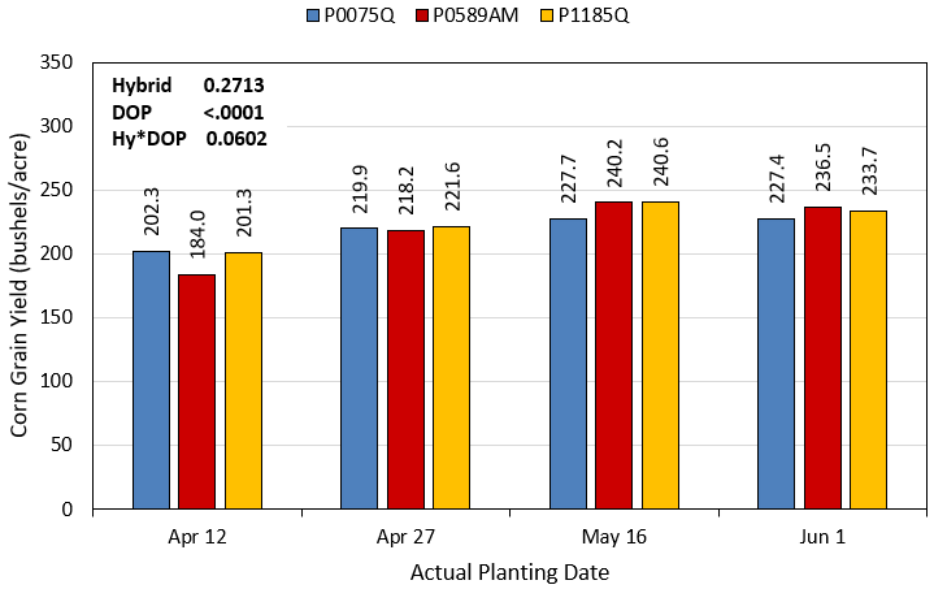

Figure 1. Corn grain yield (15%) for four planting dates and three corn hybrid maturities (100-d, 105-d, and 111-d) near Nashua, IA in 2022.

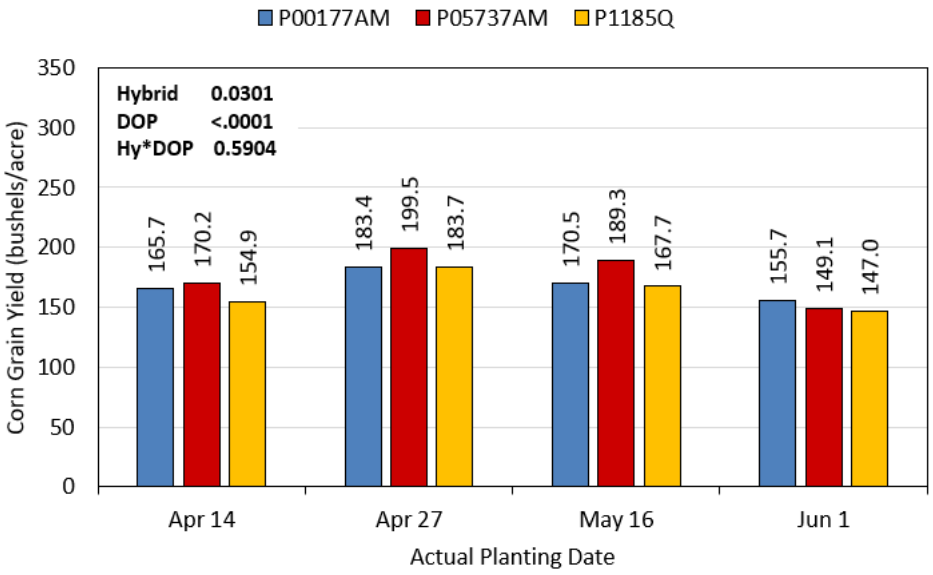

Figure 2. Corn grain yield (15%) for four planting dates and three corn hybrid maturities (100-d, 105-d, and 111-d) near Nashua, IA in 2023.

Key Takeaway

In 2022, hybrids did not have significant yield differences across planting dates. However, in 2023, the 105-d hybrid was higher yielding than the 111-d hybrid. In both 2022 and 2023, date of planting significantly impacted corn yield. The highest yields were achieved on the May 16 and June 1 planting dates in 2022. Whereas in 2023, the highest yields were achieved with the April 27 planting date.