Soybean Planting Date by Maturity Trial

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Objective

Evaluate how variety maturity and planting date influence soybean grain yield.

Materials and Methods

Site-Year 1, Nashua 2022

Soil type	Readlyn, Floyd
Previous crop	Corn
Cultivar	Multiple
Planting date	Multiple
Row spacing	30-in.
Seeding rate	189,417 seeds/acre
Tillage	Spring field cultivation–April 12
Fertilizer	None, soil test Melich-3 P = 34ppm and Melich-3 K = 247ppm
Nitrogen	None
Harvest date	October 4
Experimental design	Randomized complete block design
Replications	Four
Treatments	Four dates of planting (April 12, April 27, May 16, June 1) and three varieties (P18A33X (ST), P23A15X (untreated), P23A15X (ST), P28A51X (ST). Seed Treatment (ST) with Pioneer's PPST with full rate of iLevo

Site-Year 2, Nashua 2023

Soil type	Readlyn, Floyd
Previous crop	Corn
Cultivar	Multiple
Planting date	Multiple
Row spacing	30-in.
Seeding rate	189,417 seeds/acre
Tillage	Spring field cultivation–April 11
Fertilizer	133 lbs MAP/acre and 270 lbs # 0-0-60/acre on November 9, 2022 Soil test Melich-3 P = 38ppm & Melich-3 K = 263 ppm November 1, 2022
Nitrogen	None
Harvest date	October 2
Experimental design	Randomized complete block design
Replications	Four
Treatments	Four dates of planting (April 11, April 28, May 17, June 1) and three varieties (P18A73E (ST), P21A53E (untreated), P21A53E (ST), P28A65E (ST). Seed Treatment (ST) with Pioneer's PPST with full rate of iLevo

Results

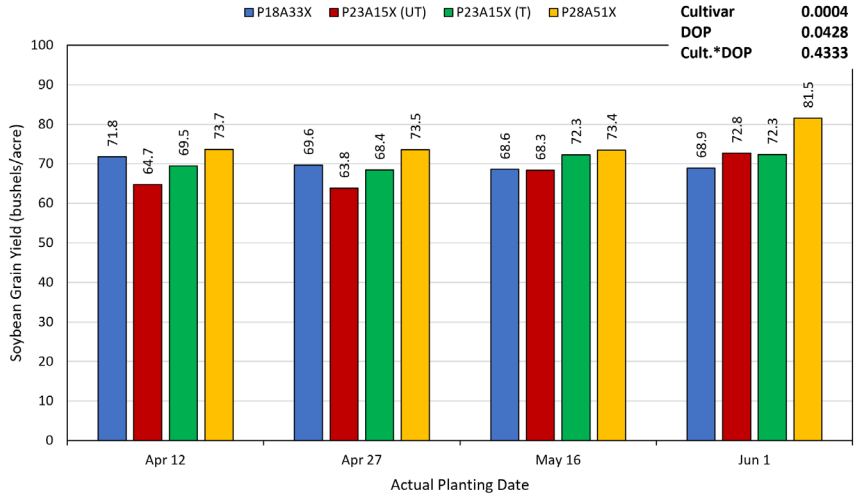

Figure 1. Soybean grain yield (13%) for four planting dates and four soybean maturities (1.8, 2.3, and 2.8) near Nashua, IA in 2022.

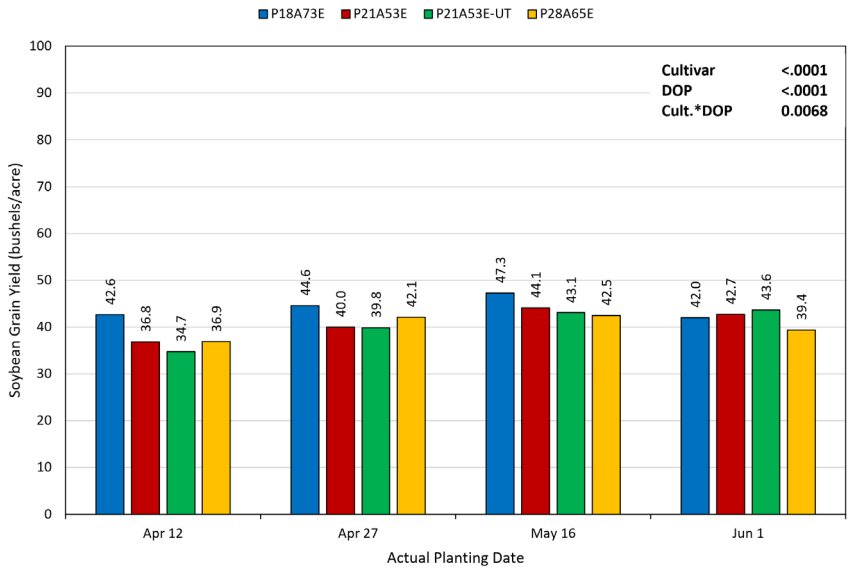

Figure 2. Soybean grain yield (13%) for four planting dates and four soybean maturities (1.8, 2.1, and 2.8) near Nashua, IA in 2023.

Key Takeaway

In 2022, P28A51X (later maturity) was higher yielding than P18A33X (1.8MG) and P23A15X (2.3MG) ($P = 0.0004$).

In 2022, April 12, May 16 and June 1 planting dates had statistically nonsignificant yields, however, April 27 was statistically lower than June 1 ($P = 0.0428$).

In 2023, again both cultivar maturity and date of planting were significant, however, the earlier maturity was higher yielding than the later ones (except at the June 1 planting date) ($P < 0.0001$). And the May 16 planting date was higher yielding than April 12 and April 27 ($P < 0.0001$).