



Soybean Seeding Rate Trial

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Objective

Determine the effects of soybean seeding rate and final population on soybean yield to potentially improve farmers' profitability.

Materials and Methods

Site-Year 1: Crawfordsville | Crop Year–2022

Soil type	Taintor, Mahaska, Kalona
Previous crop	Corn
Cultivar	P29T37E (upright) and P26T57E (bushy)
Planting date	May 9, 2022
Row spacing	30-in.
Seeding rate	20,000 to 200,000 seeds/acre by 30,000 increments
Tillage	Chisel plow–November 23, 2021; field cultivator–April 28, 2022
Fertilizer	31-150-138 prior to previous corn–November 6, 2020
Nitrogen	No nitrogen
Harvest date	October 4, 2022
Experimental design	Randomized complete block design
Replications	4
Treatments	Cultivar and seeding rate

Site-Year 2: Nashua | Crop Year–2022

Soil type	Kenyon, Readlyn
Previous crop	Corn
Cultivar	P23A15X (upright) and P25A04X (bushy)
Planting date	May 21, 2022
Row spacing	30-in.
Seeding rate	20,000 to 200,000 seeds/acre by 30,000 increments
Tillage	Chisel plow–November 9, 2021; field cultivator–May 20, 2022
Fertilizer	150 lbs. K ₂ O/ac., 57 lbs. P ₂ O ₅ /ac. and 25.5 lbs. S/ac.–November 22, 2021
Nitrogen	No nitrogen
Harvest date	October 10, 2022
Experimental design	Randomized complete block design
Replications	4
Treatments	Cultivar and seeding rate

Site-Year 3: Sutherland | Crop Year–2022

Soil type	Kenyon, Readlyn
Previous crop	Primghar, Galva
Cultivar	P23A15X (upright) and P25A04X (bushy)
Planting date	May 12, 2022
Row spacing	30-in.
Seeding rate	20,000 to 200,000 seeds/acre by 30,000 increments
Tillage	Chisel plow–November 23, 2021; disc–April 15, 2022, field cultivator–May 12, 2022
Fertilizer	19-48-55 VRT applied November 17, 2021; 1.5 ton lime VRT applied November 23, 2021
Nitrogen	No nitrogen
Harvest date	September 29, 2022
Experimental design	Randomized complete block design
Replications	4
Treatments	Cultivar and seeding rate

Results

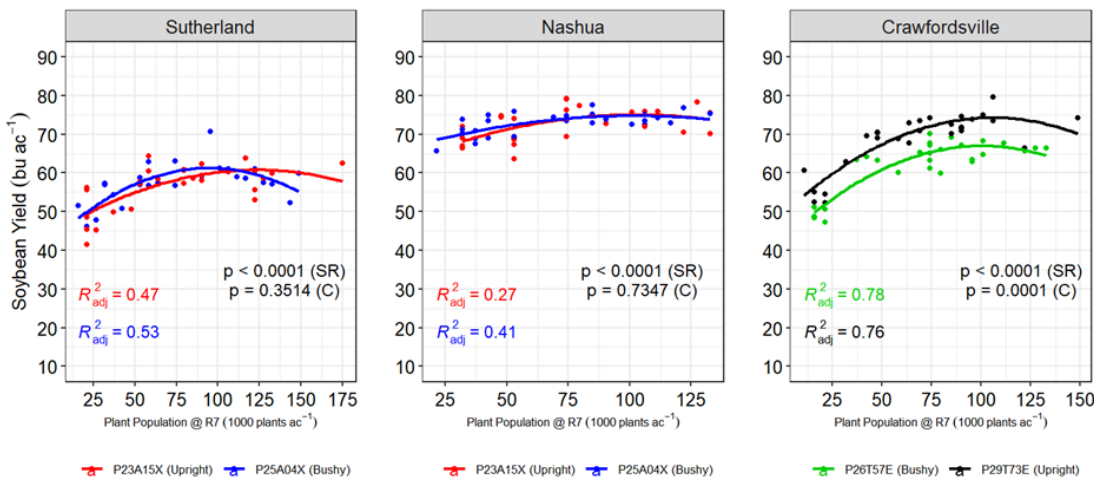


Figure 1. Soybean grain yield (13%) for an upright and bushy variety across a range of plant populations near Sutherland, Nashua, and Crawfordsvile, Iowa in 2022.

Key Takeaways

- There were no differences between cultivars in Nashua and Sutherland. In Crawfordsvile, the cultivars were statistically different ($P = 0.0001$); however, the beginning maturity (R7) plant population had a similar yield response for both cultivars.
- Maximum yields were achieved with final plant populations of 75,000 to 125,000 plants/acre.

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