Row Spacing and Seeding Rate Impact on Irrigated Soybean Yield

Trial Objective

- Row spacing and seeding rates are two factors that can have a major impact on soybean yield. However, questions remain as to which factor is more important for obtaining optimum yields.
- The objective of this study was to determine the effect of four different row spacings and two seeding rates on soybean yield potential.

Research Site Details

Location	Soil Type	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield (bu/acre)	Seeding Rate (seeds/acre)	Row Spacing (in)
Gothenburg, NE	Hord silt loam	Wheat	Strip Tillage	6/1/22	10/16/22	90	140,000 200,000	7.5-inch 15-inch 30-inch Twin-Row

- The trial was arranged as a randomized complete block design with four replications and two treatment factors.
  - » Row Spacing
    - – 7.5-inch, 15-inch, 30-inch, Twin-Row (Two rows spaced 8 inches apart on 30-inch centers)
  - » Seeding Rates
    - –]140,000 seeds/acre and 200,000 seeds/acre
- Soybean product used was 2.8 maturity group (MG) XtendFlex® Soybeans
- Soybeans were fully irrigated throughout the growing season for a total of 9 inches of water applied.
- 29 lb nitrogen (N)/acre, 25 lb phosphorus (P)/acre, 25 lb sulfur (S)/acre, 0.25 lb zinc (Zn)/acre were applied through strip-tillage application prior to planting on 4/14/2022.
- Weeds were controlled uniformly across the study.
- Total grain weight, test weight, and moisture content were collected with a plot combine to calculate yield per acre. Statistical analysis for Fisher's LSD was performed.

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Understanding the Results

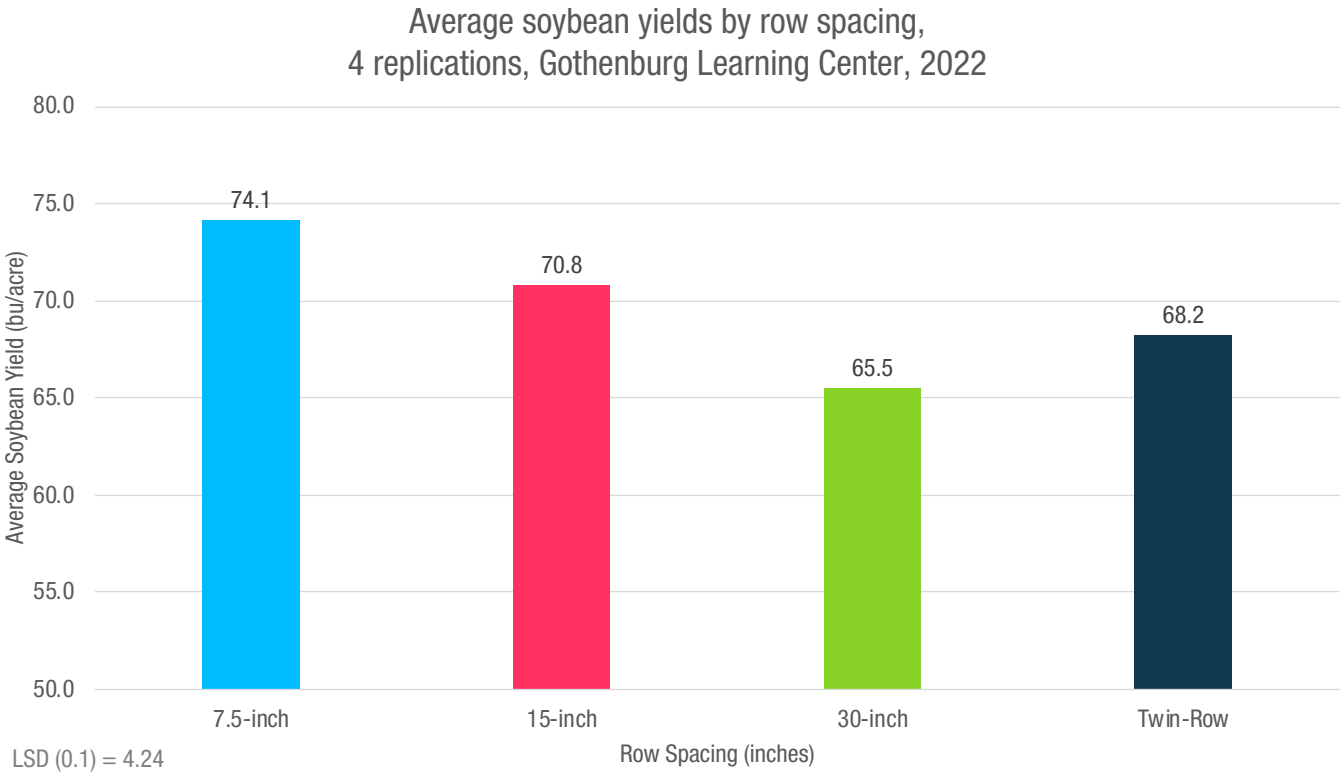

Figure 1. Average soybean yields averaged over both seeding rates as impacted by row spacing at the Bayer Water Utilization Learning Center, Gothenburg, NE (2022).

- Average soybean yields consistently increased in response to decreasing row spacing.
- Planting soybeans in 7.5-inch rows resulted in significantly higher average yields than both the 30-inch and the twin-row spacing treatments, regardless of seeding rate.
- Soybean yields for the 15-inch row spacing were not statistically different than the yields for the 7.5-inch row spacing but were significantly higher than the 30-inch yields.
- Overall, in this study, the narrowest row spacing of 7.5-inches resulted in the highest soybean yields, whereas the widest row spacing of 30-inches resulted in the lowest soybean yields.

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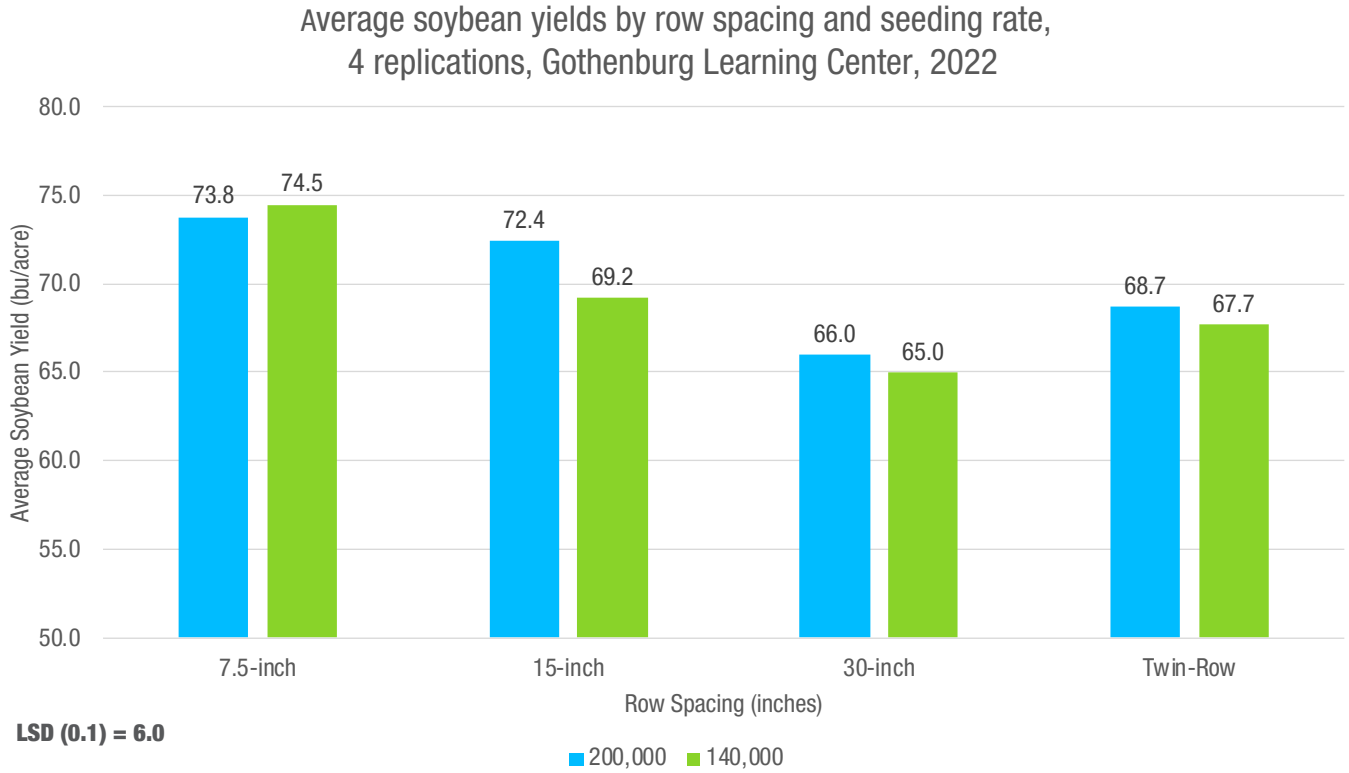

Figure 2. Average soybean yields as impacted by row spacing and seeding rate at the Bayer Water Utilization Learning Center, Gothenburg, NE (2022).

- In this study, soybean seeding rate did not result in significant differences in average soybean yield.
- Increasing the seeding rate from 140,000 to 200,000 seeds/acre did not result in a significant difference in yield regardless of row spacing.

Key Learnings

- In this study, row spacing was more impactful on soybean yields than seeding rate in a fully irrigated environment.
- In 2022, irrigated XtendFlex® soybeans planted at 140,000 seeds/acre with row spacing at 7.5" helped maximize yield potential.
- The 30-inch row spacing resulted in the lowest yields regardless of the seeding rate.
- Farmers should work with their local seeds sales team member to help identify the best adapted XtendFlex® soybean product for their production systems.

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Legal Statements

The information discussed in this report is from a single site, replicated demonstration. This informational piece is designed to report the results of this demonstration and is not intended to infer any confirmed trends. Please use this information accordingly.

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