



Soybean Response to Seeding Rate and Row Configuration in North Dakota

Trial Objective

- To evaluate the yield potential and overall plant performance of soybeans planted in narrow (15-inch) vs. wide (30-inch) rows at low, average, and high seeding rates.

Research Site Details

| Location | Soil Type | Previous Crop | Tillage Type | Planting Date | Harvest Date | Potential Yield (bu/acre) | Seeding Rate (seeds/acre) |
|----------------|-----------|---------------|--------------------------------------|---------------|--------------|---------------------------|---------------------------|
| Carrington, ND | Silt loam | Corn | No tillage into standing corn stalks | 05/11/18 | 09/14/18 | 40 | 120K, 160K, 200K |

- Three soybean products were planted in 15-inch and 30-inch row spacing:
 - Product A (0.2 MG), Product B (0.5 MG), and Product C (0.6 MG)
 - All products were medium bushy types
- Three seeding rates were used:
 - Low - 120,000 seeds/acre
 - Average - 160,000 seeds/acre
 - High - 200,000 seeds/acre
- Plots were 20 ft wide by 500 ft long.
- Due to the extremely dry growing season, canopy closure on 30-inch rows was not observed.
- No lodging or diseases were observed in the plots.

Understanding the Results

- Narrow row spacing (15 inches) had a slight yield advantage over wide row spacing (30 inches) in this trial (Figure 1).
- Differences in yield between the different seeding rates were minor (Figure 3).

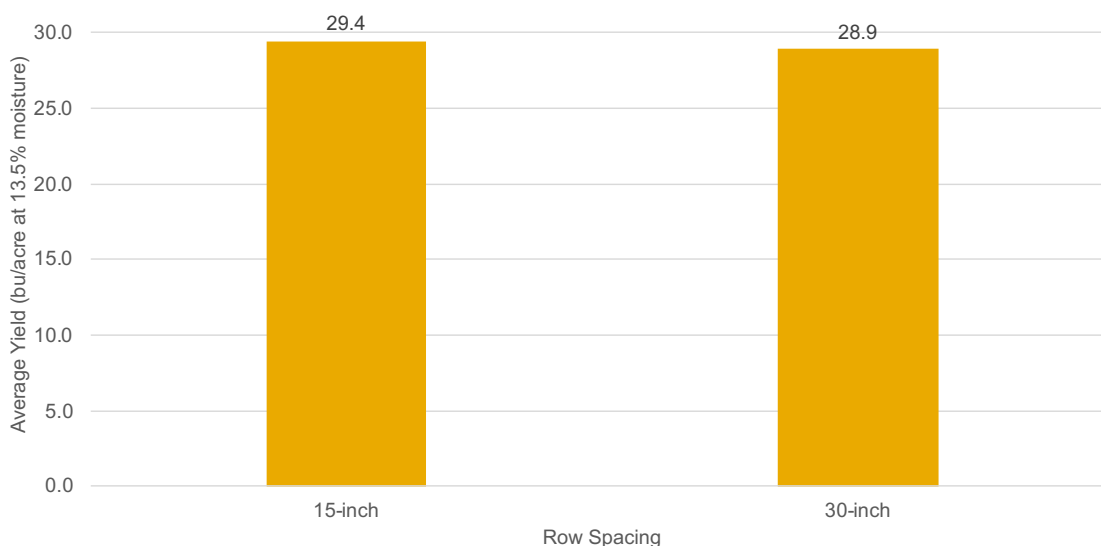


Figure 1. Yield response to row spacing averaged across the three soybean products and three different seeding rates.



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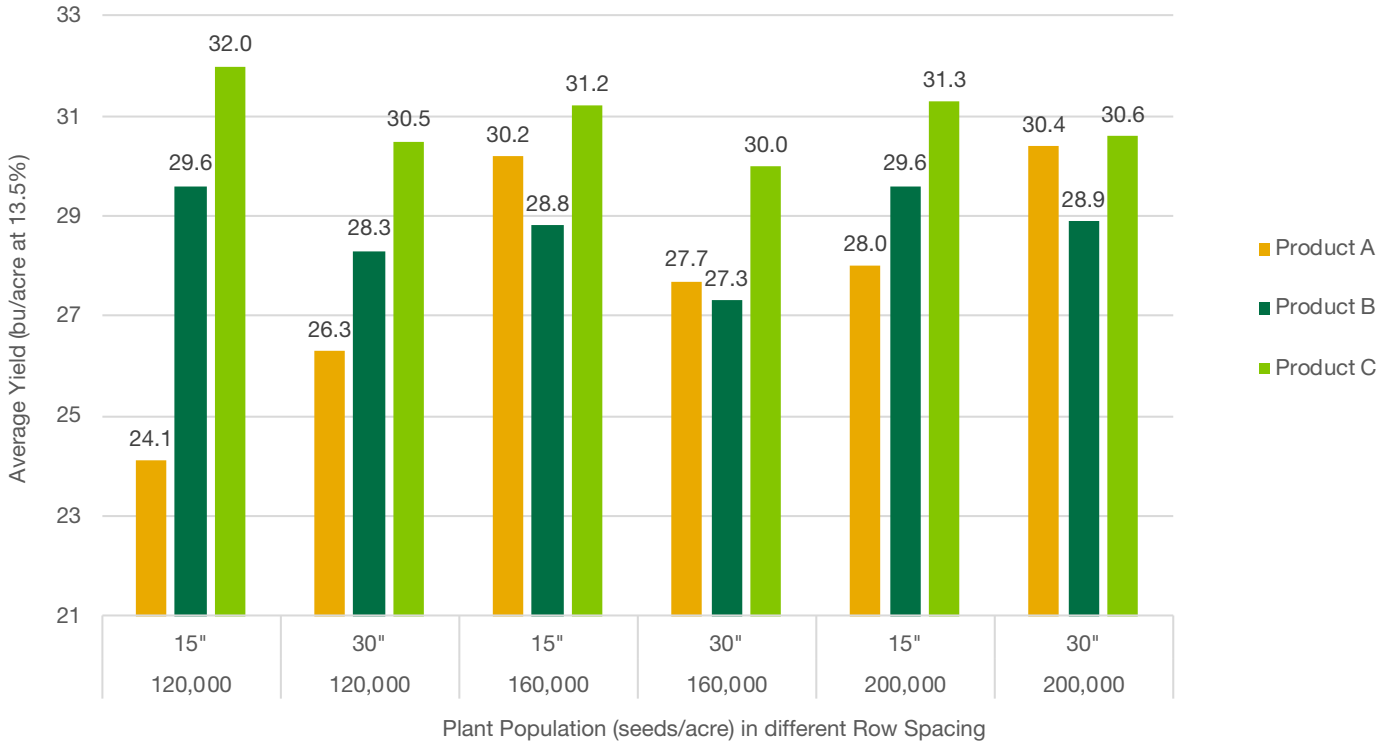


Figure 2. Yield response of soybean products to row spacing and seeding rate.

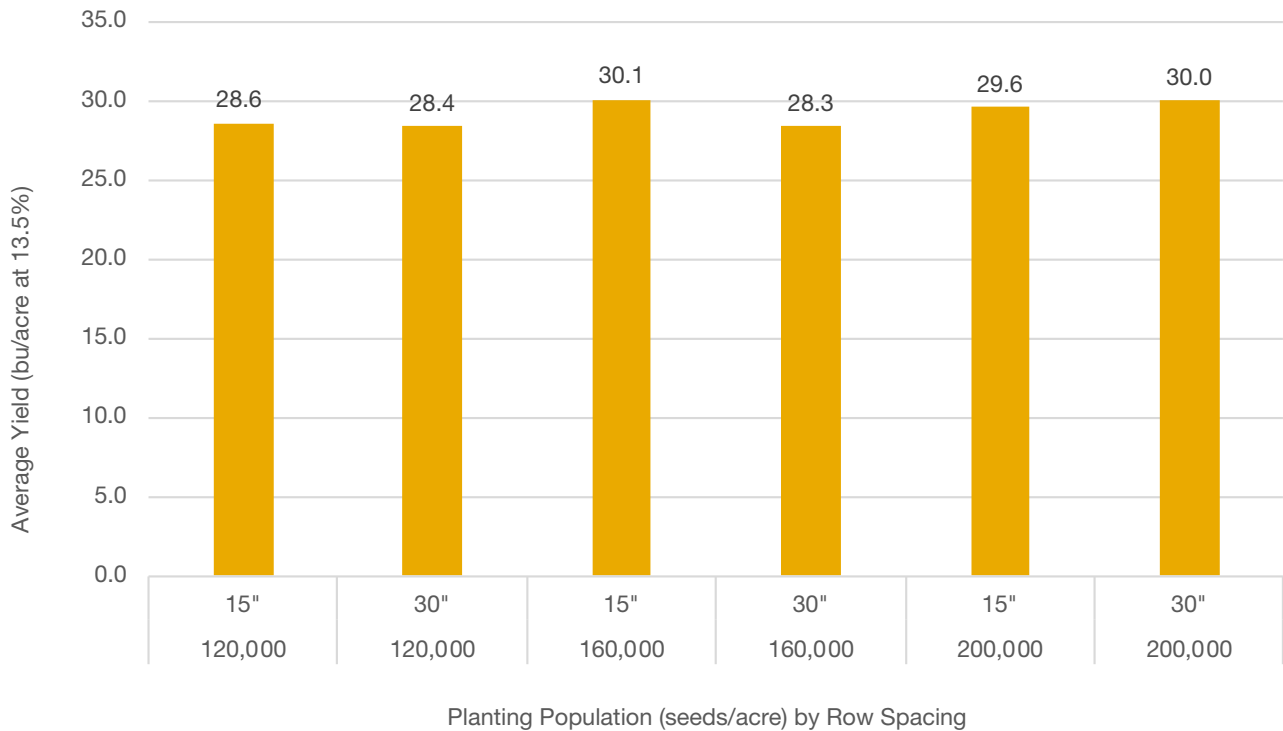


Figure 3. Yield response to row spacing and seeding rate averaged across the three soybean products.



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What Does This Mean for Your Farm?

- Narrow row spacing generally has a slight yield advantage over wide row spacing in soybean.¹
- Narrow row spacing can improve canopy closure, which is especially important in a dry year such as 2018, which can improve moisture conservation and weed control. However, during a wet year, narrow row spacing can lead to increased incidence of diseases such as white mold.
- Individual soybean products can respond differently to seeding rate and row spacing due to differences in plant structure and responses to environmental impacts, such as white mold, in both wet and dry years.
- Though minimal differences in yield were observed between the different seeding rates in this trial, we do not recommend using lower than optimal seeding rates as this may be associated with yield penalties.²

Sources

¹ Hoefft, R.G., Nafziger, E.D., Johnson, R.R., and Aldrich, S.R. 2000. Planting decisions and operations. Modern Corn and Soybean Production (ed. 1) P. 81-106. MCSP Publications, Champaign, IL.

² Esker. P., Peltier, A., Bradley, C., Chilvers, M., Malvick, D., Mueller, D., and Wise, K. 2011. Management of white mold in soybean. Spec. Rep. August 2011. North Central Soybean Research Program., Ankeny, IA.

Legal Statements

The information discussed in this report is from a single site non-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.

Performance may vary, from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the grower's fields.

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