

RESPONSE OF THREE SOYBEAN POPULATIONS TO THREE ROW CONFIGURATIONS

Study Guidelines

A demonstration trial was conducted at the Monsanto Learning Center at Scott, MS to evaluate how soybean products respond to planting populations, row widths, and configurations. Mid-south growers are interested in determining the best combination of planting population and row configuration to obtain optimum yields with soybean products. Cotton growers would like a soybean row configuration that is compatible with their cotton planting equipment. This demonstration was designed primarily to evaluate the impact of row configuration and planting population on soybean production.

Five Asgrow® soybean brands (AG4531, AG4533, AG4633, AG5533, and AG5634) were each planted in three row configurations:

- 30-inch single
- 38-inch single
- 38-inch twin (7.5 inches apart on 38-inch beds).

Each product was also planted at three populations in each row configuration:

- 90,000 seeds/acre
- 120,000 seeds/acre
- 150,000 seeds/acre.

Standard agronomic practices for the area were implemented with irrigation provided as needed.

Results and Observations

Average soybean yield, under the conditions of this demonstration trial, was 65.5 bushels per acre (bu/acre). The 38-inch twin row configuration was the highest yielding system (Figure 1). The 30-inch rows were generally intermediate in yield, and the 38-inch single rows were the lowest yielding. The 38-inch seedbeds help to improve drainage and allows for the planting of twin rows, spaced 7.5 inches apart, on top of the bed.

Planting population did not have a big impact on soybean yield in this trial (Figure 2). Soybean yield was adequate, even at the lowest planting rate of 90,000 seeds/acre. However, optimum soybean yields generally occurred at the 120,000 seeds/acre planting rate (Figure 3).

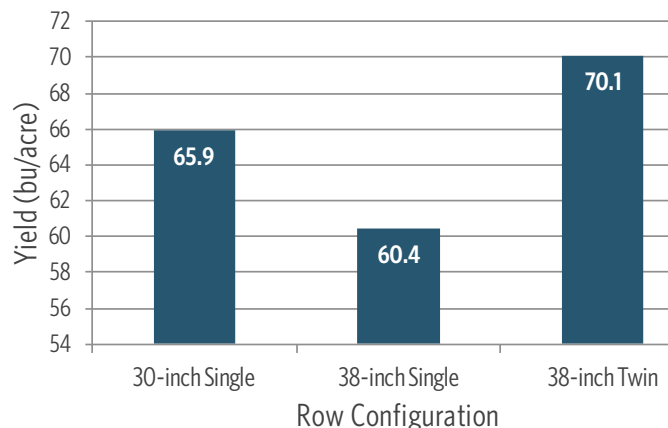


Figure 1. Soybean yield as influenced by row width and planting configuration (averaged across five Asgrow® soybean brand products and three planting populations).

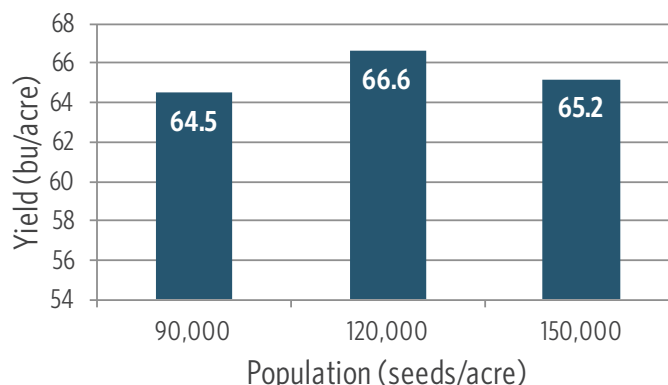


Figure 2. Soybean yield as influenced by planting population (averaged across five Asgrow® soybean brand products and three row configurations).

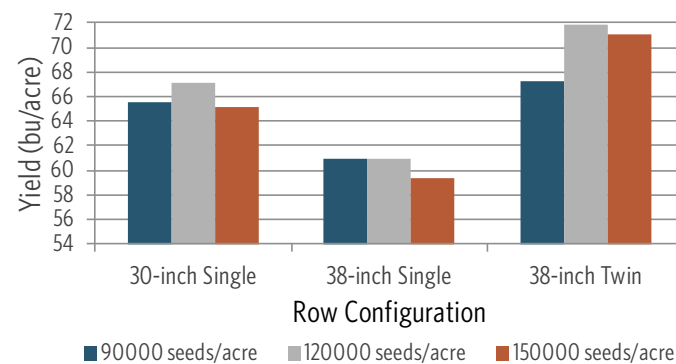


Figure 3. Soybean yield as influenced by planting population and row configuration (averaged across five Asgrow® soybean brand products).

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The results also show that soybean seed planted in 38-inch twin rows can yield more at higher planting populations. Research has shown that soybean plants have the ability to adjust growth and development to compensate for different plant populations.

Twin rows generally produced higher yields than single rows, but some differences in soybean product response were observed (Figure 4). Asgrow® soybean brands AG4531, AG5533, and AG5634 responded better to lower planting populations, whereas Asgrow® soybean brands AG4533 and AG4633 responded better to higher planting populations (Figure 5). Soybean products should be evaluated on a case-by-case basis to determine how they fit into any production system.

Summary Comments

The results indicate that row configuration can be more important than planting population to optimize yield in Mid-south soybean production. The relationship of row configuration and drainage can have an impact on soybean plant health and final stand. The 38-inch beds can provide improved drainage, and twin rows can help soybean plants respond better to higher planting populations. However, soybean products that perform well in various row configurations and at various populations are available to Mid-south soybean growers. Growers should evaluate soybean products to determine which products have the highest probability of performing well in a specific combination of row spacing and plant population.

Legals

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

For more information regarding the intellectual property protection for the seed products identified in this publication, please see www.asgrowanddekalb.com. Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.

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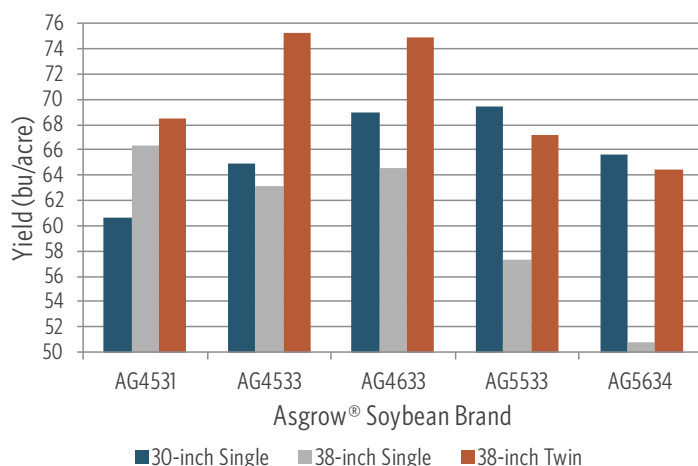


Figure 4. Yields of soybean products as influenced by row width and planting configuration (averaged across three planting populations).

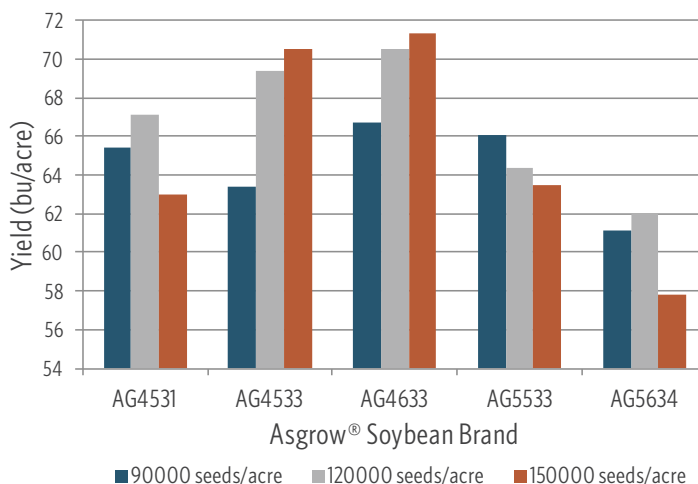


Figure 5. Yields of soybean products as influenced by planting population (averaged across three planting configurations).