



Effects of Fungicide and Planting Date on Soybean Productivity

Trial Objective

- To optimize yield potential, soybean growers often plant as early as possible within the recommended planting window for the region. Such early planting; however, runs the risk of predisposing seeds and young seedlings to early-season stressors such as insects, diseases, and cool, wet soils, which can substantially affect stand establishment and overall plant and field health. To avoid these conditions, growers can plant later when soil conditions are optimal for germination and growth. Both options have effects on field performance and suitability/convenience for the whole farm operation.
- It is necessary to protect established plants from stressors that ultimately reduce yield potential. The application of a fungicide can protect soybean plants from foliar diseases and increase overall plant health, which can lead to increased grain yield.
- Yield responses observed from the application of a foliar fungicide greatly depend on seed product selection, as individual products respond differently to a fungicide application.
- The objective of this trial was to evaluate the impact fungicide application and planting date have on soybean productivity.

Research Site Details

Location	Soil Type	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield (bu/acre)	Seeding Rate (seeds/acre)
Huxley, IA	Clay Loam	Corn	No-till	4/27/2020 5/13/2020	10/14/2020	60	140,000

- Three soybean products were used for the trial:
 - » 2.0 maturity group (MG) product
 - » 2.4 maturity group (MG) product
 - » 2.9 maturity group (MG) product
- Each product was planted on two different dates:
 - » April 27, 2020 (early planting date)
 - » May 13, 2020 (late planting date)
- Delaro® Complete fungicide was applied at a rate of 8 oz/acre at the R3 growth stage.
- Trial was carried out in 30-inch row spacing, 4 rows/treatment with 5 replications.
- Tillage and weed management were the same for all treatments.



Effects of Fungicide and Planting Date on Soybean Productivity

Understanding the Results

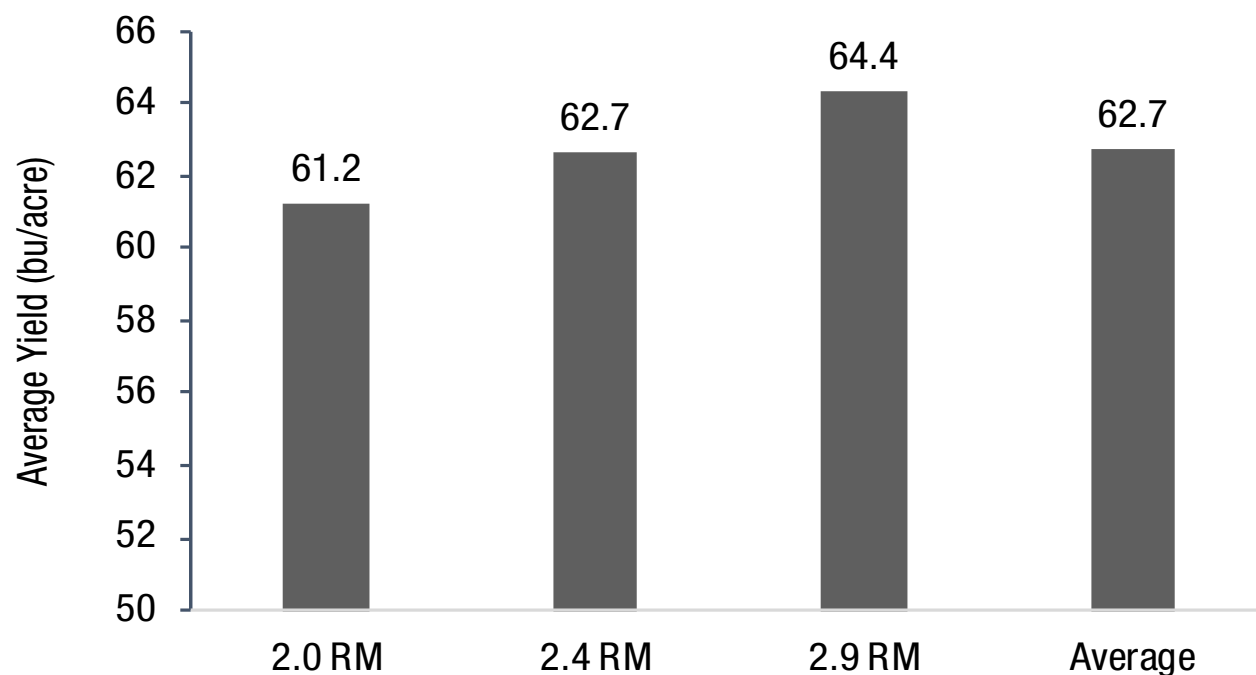


Figure 1. Yields of three soybean products averaged across planting dates and fungicide applications. Average represents the average yield of all the three products.

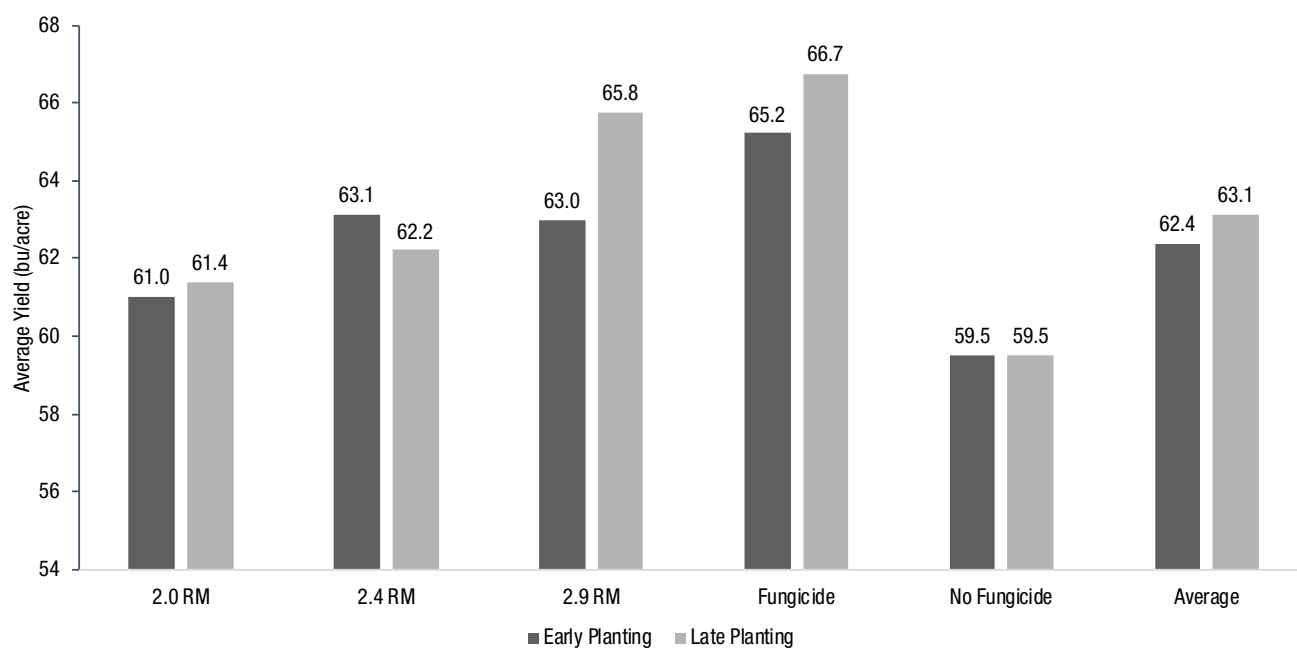


Figure 2. Effects of planting date and fungicide application on the yields of three soybean products. Data represents yields averaged across fungicide applications. Average represents the average yield of all products at that planting date.



Effects of Fungicide and Planting Date on Soybean Productivity

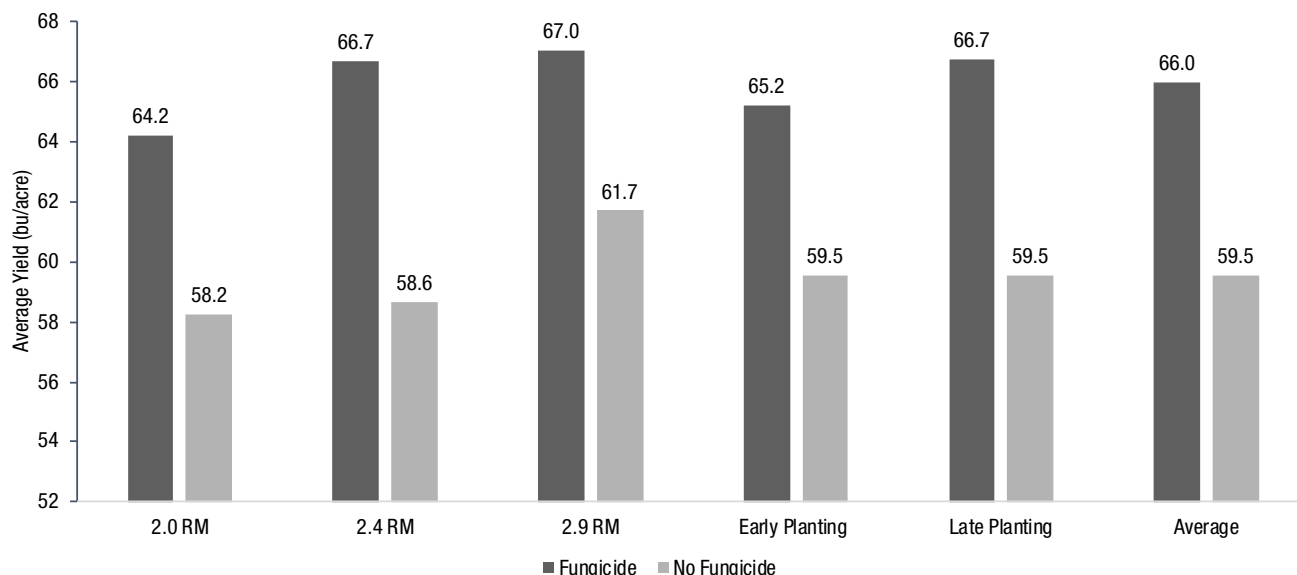


Figure 3. Effects of fungicide application on planting date and yields of three soybean products. Data represents yields averaged across the two planting dates. Average represents the average yield of all products at that fungicide treatment.

- At the trial site, yield increased as the relative maturity of products increased (Figure 1).
- Late planting date out-performed early planting date in the 2.0 RM and 2.9 RM products but not in the 2.4 RM product. On average, there wasn't much difference in yield between the planting dates (Figure 2).
- Fungicide application substantially improved yields in all the products, with an average yield gain of 6 bu/acre (Figure 3).
- Without a fungicide application, yields were the same, however, with fungicide application, late planting slightly out-performed early planting (Figures 2 and 3).

Key Learnings

- In all production regions, products within the appropriate maturity group should be selected to optimize yields. The 2.9 RM product is the full-season product selected for the trial location and yielded the highest (Figure 1).
- For this site, early planted soybeans have historically yielded higher than late planted soybeans. For this trial year, the trial location experienced cold and wet conditions after the early planting date. This resulted in protracted germination and emergence, a situation not experienced by the late planting. This, in part, may explain why early planting did not out-perform late planting this year (Figure 2).
- Over the past several years, foliar fungicides have consistently improved soybean yields at the trial site. In general, there wasn't a disease outbreak at the trial site; however, there were minor incidences of sudden death syndrome (SDS), frogeye leaf spot, Septoria brown spot and Cercospora leaf blight in both the fungicide sprayed and unsprayed plots. Also, the site was in the path of the derecho that hit Iowa in August of 2020.
- With the current grain price of about \$10/bushel, a 2 to 3 bu/acre yield gain is needed to cover the cost of the fungicide application. Thus, fungicide was cost effective for all the treatments in this study.
- Crop yield response to production inputs can be highly variable, often impacted by the environmental conditions during the growing season. Farmers are therefore advised to consult their trusted crop advisors when making such decisions.



Effects of Fungicide and Planting Date on Soybean Productivity

Legal Statements

The information discussed in this report is from a multiple 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.

ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. 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.

Not all products are registered in all states and may be subject to use restrictions. The distribution, sale, or use of an unregistered pesticide is a violation of federal and/or state law and is strictly prohibited. Check with your local dealer or representative for the product registration status in your state. Delaro® is a registered trademark of Bayer Group. All other trademarks are the property of their respective owners. ©2020 Bayer Group. All rights reserved. 5003_R2_20

