Yield Observations When Shifting to Earlier Relative Maturity Soybeans

Research Description

Trial Overview:

- We continue to see a growing trend of growers planting early soybeans and managing them at a higher level with seed treatments and foliar applications of fungicide and insecticide. This shift to earlier soybean maturity groups is becoming increasingly important in some locations.

There are many benefits of planting early soybeans including, but not limited to, earlier harvest timing, earlier cover crop seeding, and risk management benefits.

Objective:

- Determine the yield impact of early soybean product selection against the normal maturity group products for the location.

Research Site Details:

Location	Soil Type	Previous Crop	Tillage Type	Planting Date	Harvest Date(s)	Potential Yield (bushel per acre)	Planting Rate (seeds per acre)
Storm Lake, IA	Silty Clay Loam	Corn	Conventional	5-6-21	9-18-21 9-21-21	65	160,000
Marble Rock, IA	Silt Loam	Corn	Strip-Till/Cover Crop	5-2-21	10-1-21 10-4-21	60	150,000
Atlantic, IA	Silty Clay Loam	Corn	Conventional	4-27-21	10-6-21	70	150,000
Victor, IA	Silty Clay Loam	Corn	Conventional	4-30-21	9-28-21 9-30-21	65	140,000

Site Notes:

- Trial was divided into 2 sets – North & South
- A total of 4 trial locations with 2 North locations and 2 South locations
  - » North Set – Storm Lake and Marble Rock, Iowa
  - » South Set – Atlantic and Victor, Iowa
- Each maturity group set consisted of 3 Bayer brand soybean products
  - » Three early maturity group (MG) soybean products.
    - » North Set – 1.0 to 2.0 MG
    - » South Set – 2.0 to 2.6 MG
  - » Three normal maturity group soybean products
    - » North Set – 2.0 to 2.6 MG
    - » South Set – 2.7 to 3.5 MG

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- Plot size, replications, and row spacings varied depending on location.
  - » Storm Lake (2 replications)—6 rows at 20-inch spacing
  - » Atlantic (3 replications)—8 rows at 30-inch spacing
  - » Marble Rock (3 replications)—6 rows at 30 -inch spacing
  - » Victor (2 replications)—8 rows at 30-inch spacing
- Rainfall in 2021 was timely and arrived during the soybean reproductive stages across all locations.

Understanding the Results

- With earlier planting dates in 2021 and rainfall events from late June through September, the effects of maturity group on soybean yield potential pointed to a clear yield advantage of 8.3 bu/acre for the normal MG set (Figure 1).
- When combined over the four years tested, (2018-2021) the normal maturity group set has an average yield advantage of 6.8 bushels/acre (Figure 2).

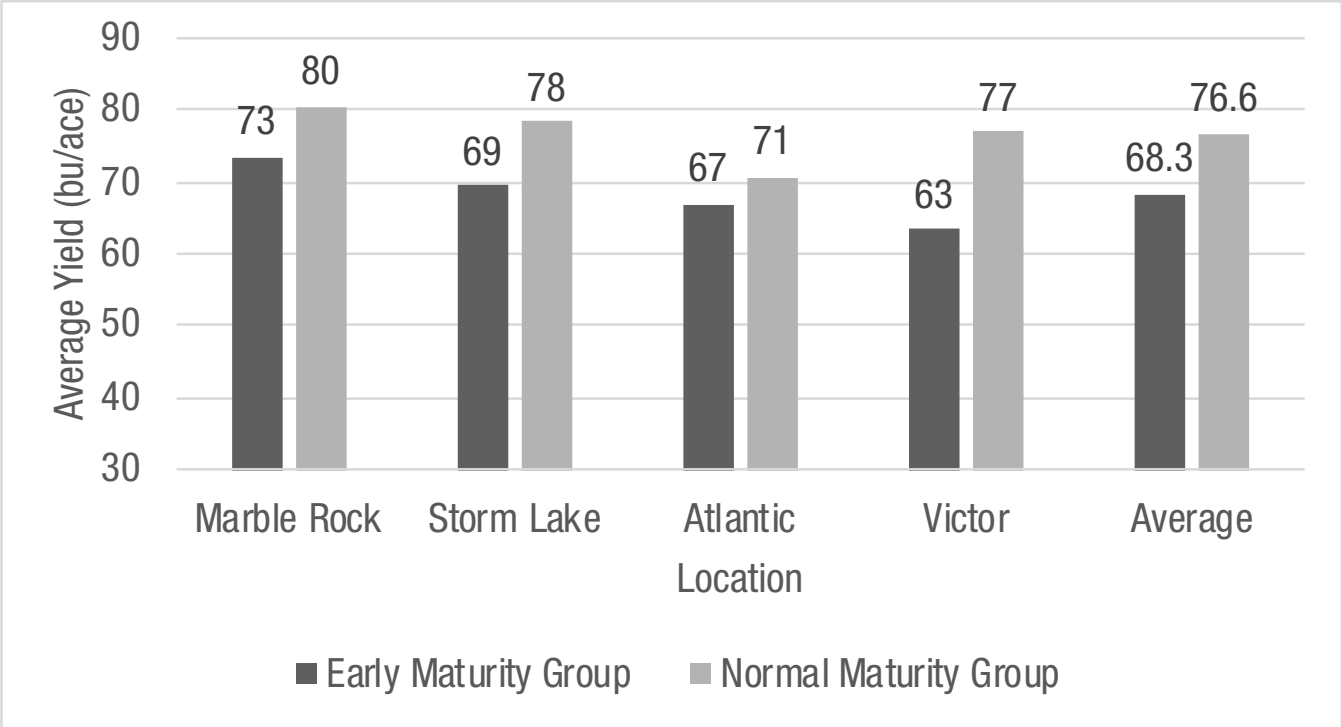

Figure 1. Effect of maturity group (MG) on 18 Bayer brand soybean product performance at Marble Rock, Storm Lake, Atlantic, and Victor, Iowa in 2021. Data represents the average yields of nine products in each MG group for each location and the average across all locations.

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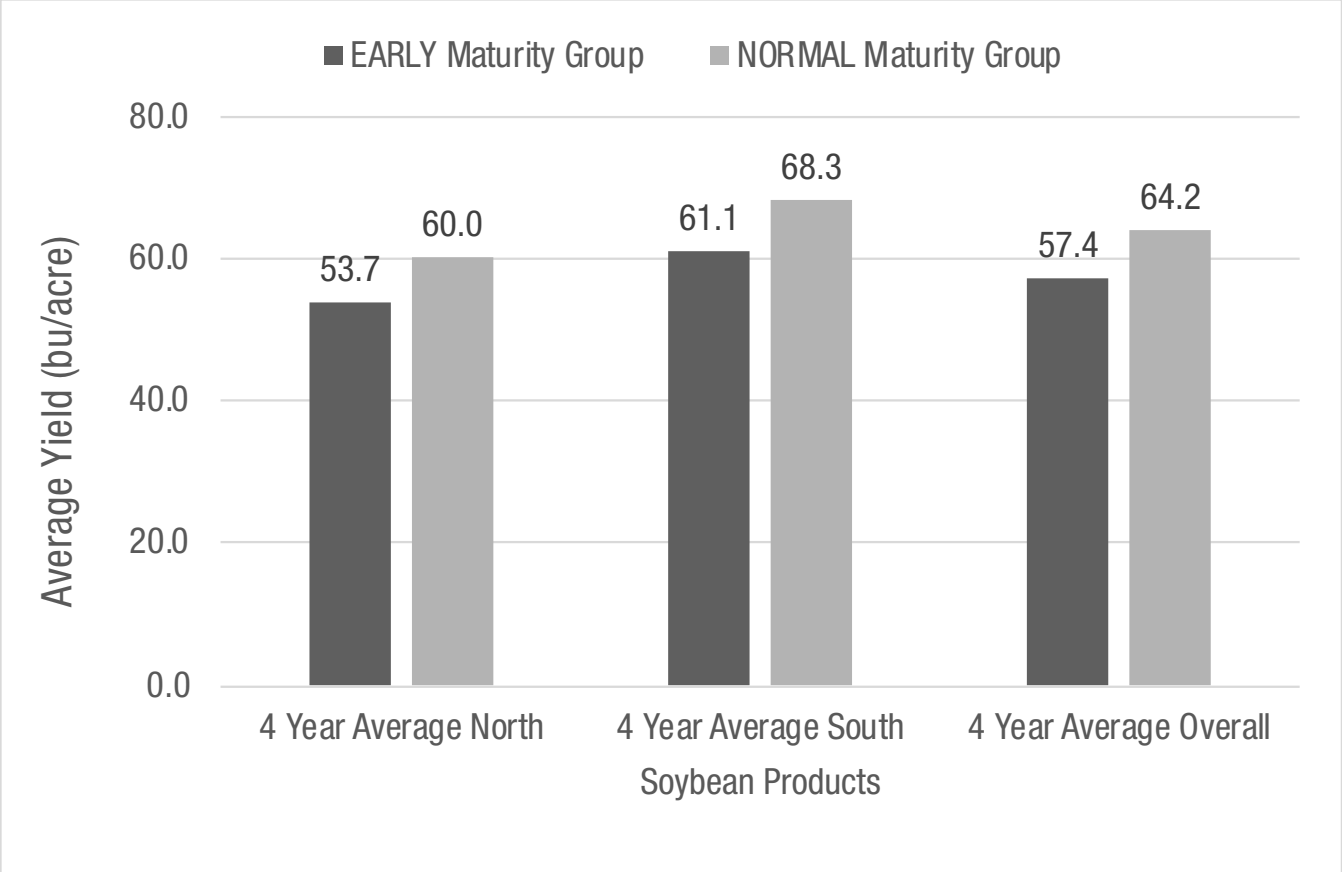

Figure 2. Effect of maturity group on Bayer soybean products in northern and southern Iowa combined across years (2018-2021).

What Does This Mean For Your Farm?

- In 2021, the early maturity group (MG) soybean products yielded, on average, 8.3 bushel per acre less than the normal MG soybean products and ranged between 2 to 16 bushel per acre less than normal MG soybean products for all locations.
- In 2021, rainfall was timely and arrived during the reproductive stages of the soybean products across all locations to increase overall yield potential of all products.
- Over four years of testing, 2018 had the most competitive results for the early MG soybean products. Results from 2019, 2020, and 2021 have favored the production of normal MG products.
- More research needs to be done in the genetic pipeline to better understand which soybean products will move south.
- It should be noted that earlier MG soybean products may not be for every operation and that its benefits could be defined in terms other than yield such as early harvest and establishment of cover crop.

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Legal Statement

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.