



2015 Demonstration Report

MONSANTO LEARNING CENTER AT MONMOUTH, IL

Effects of Planting Date in Corn

Background

If temperature, soil moisture, and other weather conditions permit, the optimum planting window for corn is known across the Corn Belt.¹ In northern and central Illinois, early April through mid-May provides the optimum planting date that may guarantee 97-100% realization of the potential yield.^{2,3} Planting before this optimum window, even when conditions are fit, incurs some risks such as cold temperatures or a frost after emergence, diseases, and insects which could impact yield. Planting towards the early part of the window can permit more days for plant development, reduced pest pressure, earlier pollination to help avoid heat stress, improved standability due to shorter plant height, and earlier maturity and faster dry down.³

These benefits are lost with late planting, with a commensurable loss of potential yield to the magnitude of 1 to 2 bu/acre/day past the optimum planting window.¹ This trial was conducted to investigate the interactions between planting dates to achieve optimal yield.

Study Guidelines

A corn demonstration trial was conducted at the Monsanto Learning Center at Monmouth, IL comparing two different relative maturity products and three planting dates. The trial was planted with a 105 RM and a 112 RM Genuity® SmartStax® RIB Complete® corn blend product.

PLANTING DATES:

- Early Plant: April 15, 2015
- Mid Plant: May 1, 2015
- Late Plant: June 3, 2015

The trial was conducted on a corn-on-corn system. Soil was prepared under conventional tillage with a chisel plow in the fall followed by a soil finisher in the spring. Plot sizes were 10 ft x 100 ft (0.023 acre)/treatment. Corn was planted in 30-inch single rows, 4 rows/treatment. UAN was applied and incorporated in the spring and the seed bed was established using a soil finisher. Weed management across the trial was uniformly controlled using a residual/post weed control program.



Figure 1. Corn on the left (early planting date) and right (mid planting date) demonstrates the difference in growth stage based on planting date.



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HARVEST DATES:

- September 16 for April 15 planting
- September 22 for May 1 Planting
- October 2 for June 3 planting

Results

In the 105 day RM corn product, the mid planting date yielded the highest in this trial, slightly higher than the early planting date (Figure 2).

In the 112 day RM corn product, the early planting date yielded the highest in this trial, followed by mid and then late planting dates (Figure 3).

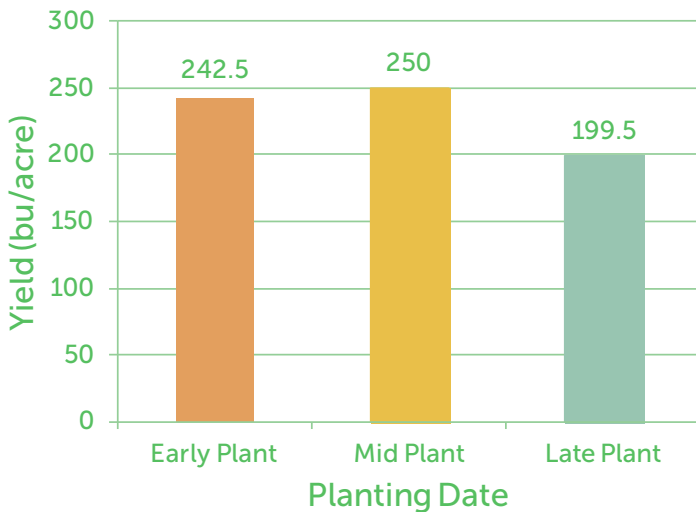


Figure 2. 105 Day RM Corn Product Average Yield

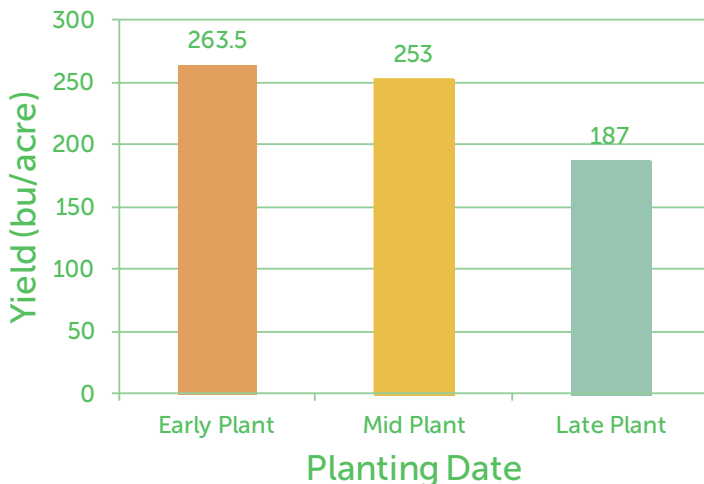


Figure 3. 112 Day RM Corn Product Average Yield

Take Aways

Overall, this trial provided the following findings:

- There was an interaction between planting date and yield.
- The earlier planting dates demonstrated the highest yields in this trial.
- If environmental conditions permit and optimum planting date is utilized, a better response for increased yield can be realized.

Sources:

- 1 Agronomic Spotlight. 2014. Determining when to begin corn and soybean planting. Technology Development & Agronomy. Monsanto Company.
 - 2 agKnowledge Alert. 2013. Cool temperatures and corn planting. Technology Development & Agronomy. Monsanto Company.
 - 3 Agronomic Spotlight. 2012. The risks associated with planting corn before the optimum window – IA, IL, IN. Technology Development & Agronomy. Monsanto Company.
- Nafziger, E. 2008. Thinking about corn planting date and population. Issue 1, Article 7. The Bulletin. University of Illinois.

Legals

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.

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