

EFFECT OF RELATIVE MATURITY ON YIELD POTENTIAL OF LATE-PLANTED CORN PRODUCTS

TRIAL OVERVIEW

- In situations where planting may be delayed due to environmental conditions or where re-planting decisions must be made, making the proper relative maturity (RM) selection is critical.
- Individual growing seasons can vary depending on the number of growing degree days (GDD) accumulated, rainfall accumulation, nutrient availability, and other factors.
- About 22 GDD are required for a one day increase in RM.¹
- Earlier RM corn products can dry down earlier than late RM corn products, which is an important consideration as the earlier harvest can occur, the more likely chance of avoiding poor weather conditions. Inclement weather late in the season can lead to increased drying costs, increased wear on equipment, increased disease, and reduced grain quality.²

RESEARCH OBJECTIVE

- A demonstration was established to help provide information to growers about how the RM of corn products effects the yield potential of late-planted corn.

Location	Soil	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield/Acre	Planting Rate/Acre
Atlantic, IA	Silty Clay Loam	Soybean	Reduced	06/05/2016	10/04/2016	220	36,000

SITE NOTES:

- Seven corn products spanning from 101 to 113 RM were selected and planted late on June 5, 2016.
- This demonstration trial was planted as a single, unreplicated trial with 30-inch row spacing. All other agronomic practices were standard for local conditions.
- Cost and net profit were based on revenue (\$3.50/bu) minus cost of drying (\$0.04/point of moisture over 15%).
- Average yields were normalized to 15% moisture.

UNDERSTANDING THE RESULTS

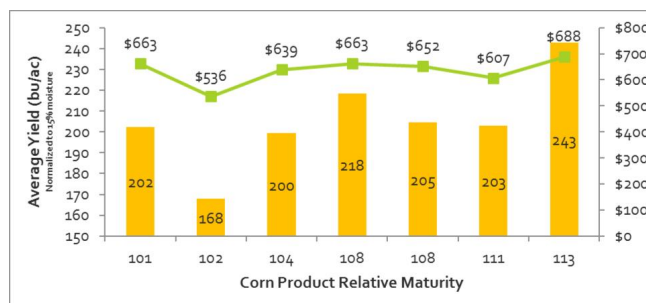


Figure 1. Corn product average yield and revenue (\$3.50/bu) minus cost of drying (\$0.04/point of moisture over 15%).

- Later RM products ranging from 108 to 113 day RM averaged 27.25 bu higher and had an average of \$39.83/ac higher income including drying costs, than the earlier RM for this location and year.
- Overall GDD accumulation at Atlantic in 2016 was 334 units higher than the 15 year average, which likely provided fuller season products with an advantage.³
- A combination of high moisture in May followed by hot and dry conditions in June and a hot July and August with ample rainfall contributed to high GDD accumulation and favorable conditions for full season corn products. Later RM products benefitted from continual favorable conditions.



WHAT DOES THIS MEAN FOR YOUR FARM?

- Corn product RM selection should be considered carefully and selected based on region, climate and potential yield. Planting a variety of corn products with appropriate RMs on a per operation basis can help spread risk and harvest interval.¹
- When selecting corn products for re-plant or late planting, dry down should be an important consideration. In this demonstration, harvest occurred somewhat early with 101 to 104 RM corn products harvested at 20 to 22 percent moisture content, and 108 to 113 RM corn products harvested at 26 to 31 percent moisture content. Typically, harvest of a full season corn product would not occur at such a high moisture content and drying costs would not impact profit as greatly.
- The higher than average GDD accumulation resulted in more favorable conditions for late RM corn products, whereas in other years there would be a risk of corn not reaching blacklayer prior to the first frost.

SOURCES

1 Coulter, J. and Van Roekel, R. Selecting corn hybrids for grain production. University of Minnesota Extension. <http://www.extension.umn.edu/agriculture/corn/hybrid-selection-and-genetics/selecting-corn-hybrids-for-grain-production/>.

2 Corn Planting Date and Relative Maturity. Learning Center Summary, Technology Development and Agronomy, 2010.

3 NWS COOP Network. 2016. Iowa State University of Science and Technology. <https://mesonet.agron.iastate.edu/>. Web sources verified 11/30/16.

LEGAL STATEMENT

For additional agronomic information, please contact your local brand representative. Developed in partnership with Technology Development & Agronomy by Monsanto.

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.

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