Benefits of Early Planted Soybeans

Historically, soybean planting dates have been delayed relative to corn and were considered non-critical in regards to yield. However, research has shown that early planting can be critical to producing high soybean yields. With soybean commodity prices increasing, planting dates need to be evaluated as a factor to help increase potential yield and profitability.

Study Guidelines

A demonstration with four replications was conducted in 2011 at the Monsanto Learning Center in Monmouth, IL to evaluate the effects of planting date on soybean yield. Genuity® Roundup Ready 2 Yield® soybean varieties, with relative maturities (RM) of 2.8 and 3.4, were both planted early on May 2, 2011 and three weeks later on May 23, 2011. Soybeans were planted in 15 inch rows at a population of 130,000 seeds per acre. Plots were 500 square feet in size. The field plot was conventionally tilled (chisel plow in the fall and soil finisher in the spring) and has been in a corn and soybean rotation system. The herbicide program consisted of a preemergence treatment of Valor® XLT at 3 ounces per acre (oz/A) followed by a postemergence treatment of Roundup PowerMAX® at 22 oz/A. Soybeans were harvested on October 10, 2011.

Results and Conclusions

The 2.8 and 3.4 RM soybean varieties yielded 14.4 and 8.2 bushels per acre (bu/acre) more, respectively, when planted earlier (Figure 1). The average increase in yield between the early and late planting date was 11.2 bu/acre when averaged across both varieties. The 2.8 RM variety demonstrated more yield loss from the later planting than the 3.4 RM variety. The results clearly show that higher yields can be obtained from an earlier planting in this situation.

University of Illinois multi-year testing at Dekalb (northern IL) and Monmouth (west central IL) showed an incremental yield loss for soybean planting dates beyond May 1.[1] Multi-year testing conducted at the University of Wisconsin showed soybean seed number and pod

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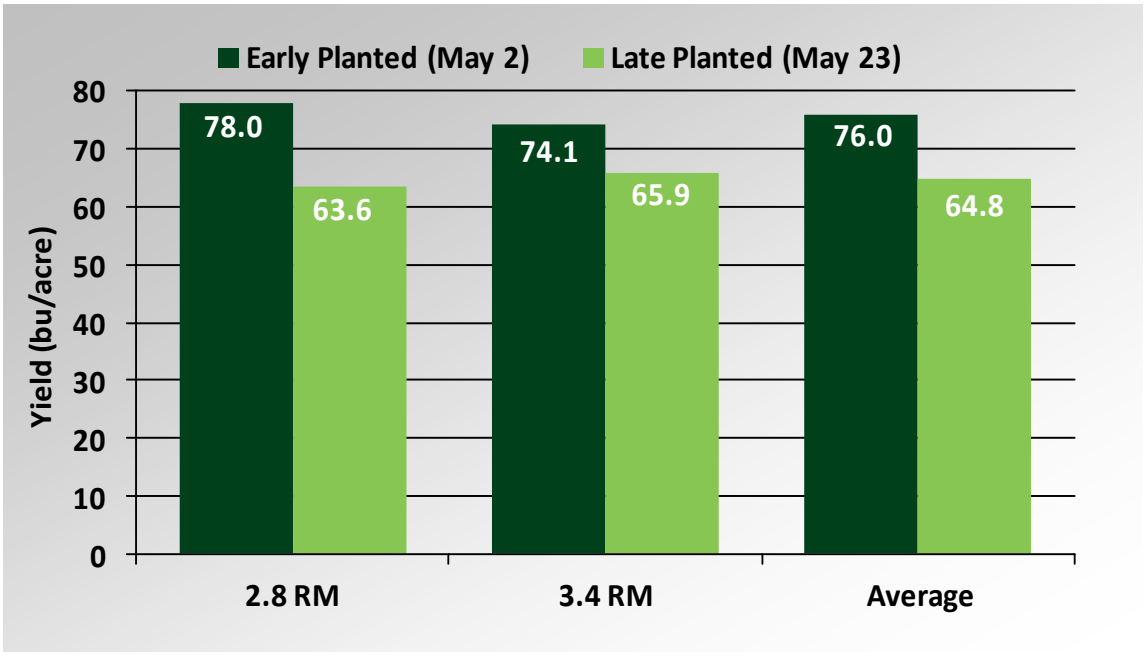

Figure 1. Effect of planting date on the yield of 2.8 and 3.4 relative maturity (RM) Genuity® Roundup Ready 2 Yield® soybean varieties – 2011 Monmouth Learning Center.

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number to be greater with early May (3-6) vs. late May (23-27) planting dates. Early planting provides the potential for producing a larger crop canopy earlier in the growing season, which can better utilize solar radiation for photosynthesis and available soil moisture during the growing season. Soybeans can be more able to establish a good root system before potentially harsher conditions of summer. Weed competition can be reduced with earlier establishment of a full soybean canopy before later emerging weeds become a problem. The extended vegetative growth of soybeans from early planting can lead to more nodes on the main stem increasing the potential for more pods per plant. Early planting can lead to earlier flowering of soybeans and a longer period of reproductive growth for more seed fill.[2] An additional benefit of early planting would include a longer planting window for maximizing soybean yields.[3]

When good soil and seedbed conditions exist, planting soybeans early can lead to increased yields. This can be especially true on the more productive soils and higher yielding environments.

References:

[1]*Agronomic Spotlight. 2011. Benefits of early planting in soybeans – IL. Monsanto Technology Development.*

[2]*Bastidas, A.M. et al. 2008. Soybean sowing date: The vegetative, reproductive, and agronomic impacts. Crop Science 48: 727-739.*

[3]*Staton, M. 2011. Planting soybeans early offers many benefits. Michigan State University extension crop advisory team alerts, March 18, 2011 13:48.* http://ipmnews.msu.edu *(verified 11/11/2011).*

The information discussed in this report is from a single site, one-year 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.