



REPLANT DECISIONS IN SOYBEANS

Establishing and maintaining an optimum plant stand is important for profitable soybean yields. Injury to soybean stands occurs nearly every year from a variety of causes including hail damage, insect feeding, flooding, chemical misapplication, and seedling diseases (Figure 1). One of the most challenging decisions that soybean producers may face is the decision of whether or not to replant soybeans. The soybean plant is very resilient and can adjust to the final stand remaining in the field by adding branches, more pods per plant, and an increase in seed size. It is this ability of the soybean plant to compensate that makes the replant decision difficult. Several universities have developed charts, worksheets, and online tools to help growers with this decision^{1,3}. Careful evaluation of plant stands can assist in the decision to replant suboptimal soybean stands^{1,2,3}.

Materials and Methods

A demonstration trial was conducted in 2012 at the Monsanto Learning Center near Monmouth, IL to evaluate the influence of soybean replanting on final yield. Maturity Group (MG) 3.4 Genuity® Roundup Ready 2 Yield® soybean products were planted on June 5, 2012 in 30-inch rows at a seeding rate of 130,000 seeds per acre. Various stand percentages were chemically removed in blocks to simulate spring stand loss scenarios with an application of Ignite® herbicide at 22 oz/acre plus ammonium sulfate (AMS) at 17 lb/100 gal on June 13, 2012. Treatments included the control (0% replant), Treatment 1 (30% replant), Treatment 2 (50% replant), and Treatment 3 (100% replant). Soybeans were replanted on June 19, 2012 at the same row spacing and population.

The field plot was conventionally tilled (chisel plow in the fall and soil finisher in the spring) and was in a soybean—soybean rotation the previous year. The herbicide program consisted of a preemergence treatment of Valor® XLT herbicide at 3 oz/acre followed by a postemergence treatment of Roundup PowerMAX® according to labeled rates plus AMS at 17 lb/100 gallon.

Results

Replanting decisions in soybean depend on several factors. In this demonstration study, soybeans yields were closer to the control yield with Treatment 1 yielding 98% of the control, Treatment 2 yielding 93% of control and Treatment 3 yielding 70% of the control (Figure 2). Previous stand reduction studies have indicated more yield differences than observed in this demonstration study². Several late-planted soybean trials conducted at the Monmouth Learning Center in 2012 had an increase in yield compared to earlier planting dates. This is not a typical planting date response for this region and is most likely attributed to the opportunity for late-planted soybeans to take advantage of the rains and cooler temperatures experienced in late-August earlier in the reproductive growth stages.

When all factors are reviewed, the decision to replant may not warrant

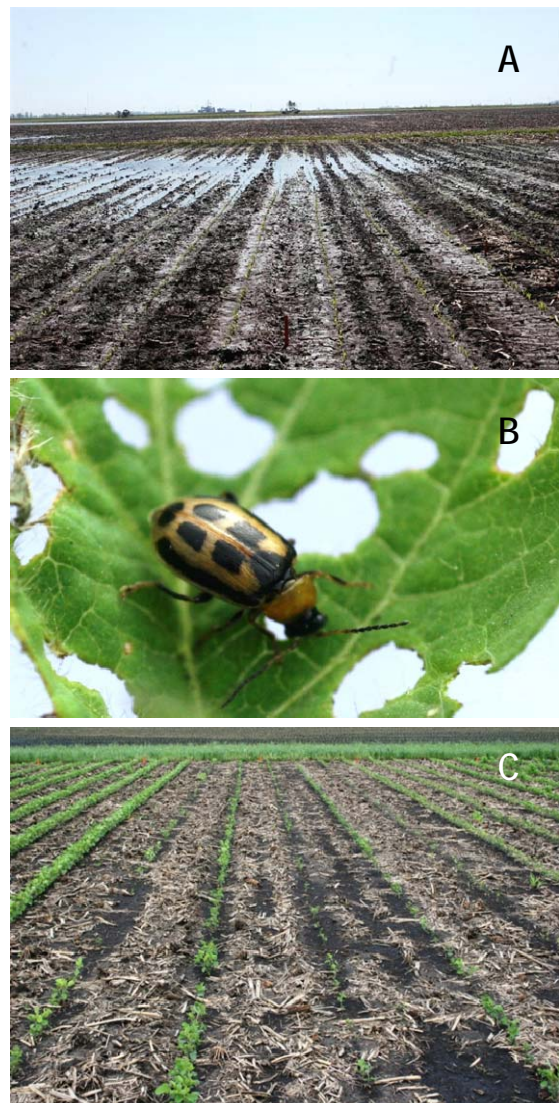


Figure 1. Injury to soybean stands can result from a variety of causes including: (A) flooding, (B) insect damage, and (C) chemical misapplication.

Continued on next page ▶



REPLANT DECISIONS IN SOYBEANS

▶ from previous page

the replant investments. Soybeans compensate well for low populations. Scientists at Iowa State University suggested that a soybean stand that can yield 90% of the original production should not be replanted due to the costs associated with replanting, such as seed and fuel costs, herbicide restrictions, etc³.

The information discussed in this report is from a single site, non-replicated, 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.

Resources

¹Brouder, S., et al. 2007. Corn and Soybean Field Guide. ID-179. Purdue University Extension.

²FAST (Farm Analysis Solution Tools). 2012. University of Illinois Extension. <http://farmdoc.illinois.edu/fasttools>. (verified 11/29/2012).

³Whigham, K. et al. 2000. Soybean Replant Decisions. PM1851. Iowa State University Extension. <http://extension.iastate.edu> (verified 11/20/2012).

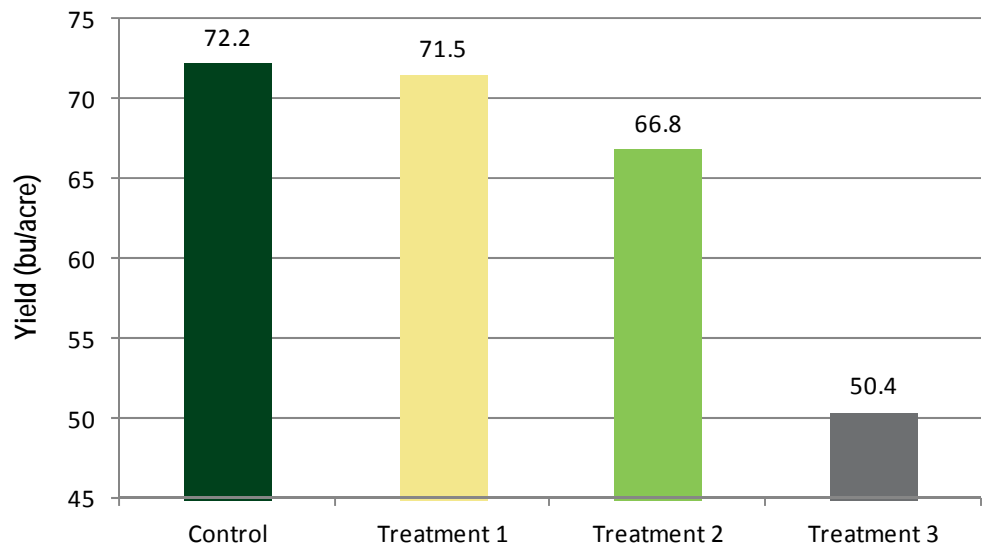


Figure 2. Effect of soybean replanting on final soybean yield in at Monmouth Learning Center at Monmouth, IL in 2012.

Monsanto Company is a member of Excellence Through Stewardship® (ETS). Monsanto products are commercialized in accordance with ETS Product Launch Stewardship Guidance, and in compliance with Monsanto's Policy for Commercialization of Biotechnology-Derived Plant Products in Commodity Crops. This product has been approved for import into key export markets with functioning regulatory systems. Any crop or material produced from this product can only be exported to, or used, processed or sold in countries where all necessary regulatory approvals have been granted. It is a violation of national and international law to move material containing biotech traits across boundaries into nations where import is not permitted. Growers should talk to their grain handler or product purchaser to confirm their buying position for this product. Excellence Through Stewardship® is a registered trademark of Biotechnology Industry Organization.

Roundup Technology® includes Monsanto's glyphosate-based herbicide technologies. Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.

ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. Roundup Ready® crops contain genes that confer tolerance to glyphosate, the active ingredient in Roundup® brand agricultural herbicides. Roundup® brand agricultural herbicides will kill crops that are not tolerant to glyphosate. Genuity®, Roundup PowerMAX®, Roundup Ready 2 Yield®, Roundup Ready®, Roundup Technology® and Roundup® are registered trademarks of Monsanto Technology LLC. Leaf Design™ is a servicemark of Monsanto Company. Valor® is a registered trademark of Valent U.S.A. Corporation. All other trademarks are the property of their respective owners. ©2012 Monsanto Company. 12032012 AMH