

Advantages of New Soybean Seed Over Saved Seed

Topic: University trials demonstrate that it can be difficult for farmers to maintain seed quality with saved soybean seed.

Effect: In three years of university trials, Genuity® Roundup Ready 2 Yield® soybean yields averaged 5.2 bu/acre more than university-saved Roundup Ready® soybean products.

Action: Farmers should purchase professionally grown and conditioned seed each year to maximize seed quality and yield potential.

Topic

Can farmers save money and increase profit potential by saving their own Roundup Ready® soybean seed? To answer that question, eight universities ran a three-year series of field trials (University of Nebraska, University of Missouri, University of Wisconsin, University of Illinois, University of Arkansas, Southern Illinois University, Purdue University, and Ohio State University).

Effect

Field Trials

Three Roundup Ready® soybean products and three Genuity® Roundup Ready 2 Yield® soybean products were planted side by side in multiple locations each year. Grain harvested in 2012 from the three Roundup Ready soybean products were saved by university

personnel. This saved seed was used for laboratory seed quality tests and for the 2013 Roundup Ready soybean planting. Likewise, grain harvested from the Roundup Ready plots in 2013 was saved for planting in 2014. Monsanto provided their most recently released Genuity Roundup Ready 2 Yield soybean seed products each year.

To ensure equal seeding densities across treatments, universities increased the seeding rate of any Roundup Ready product whose warm germination test was below 90%. Seed products were selected to be within a 0.4 maturity group (e.g. 3.1 to 3.5). Selected products had similar disease and soybean cyst nematode tolerance packages. All seed was untreated (no fungicide or insecticide).

All saved Roundup Ready seeds were stored by universities in rigid box containers to simulate farmer storage conditions. Several Roundup Ready soybean samples fell far below acceptable quality standards that are commonly used in the seed industry (Table 1). Grain yield of Genuity Roundup Ready 2 Yield soybean seeds over Roundup Ready saved seed was greater in 2013 and 2014 than in 2012 (Figures 1 and 2). This suggests that over multiple years, Genuity Roundup Ready 2 Yield soybeans maintain a performance advantage over Roundup Ready seed. Farmers are encouraged to purchase professionally conditioned seed each year to help ensure seed quality and maximize yield potential.

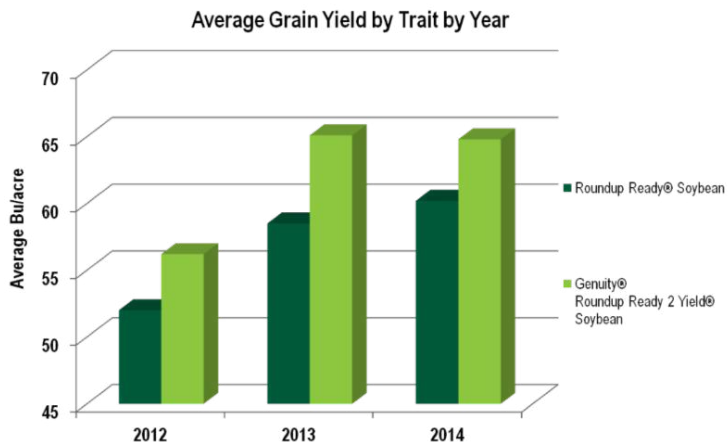


Figure 1. Average grain yield by trait by year. *Significant at 0.05.

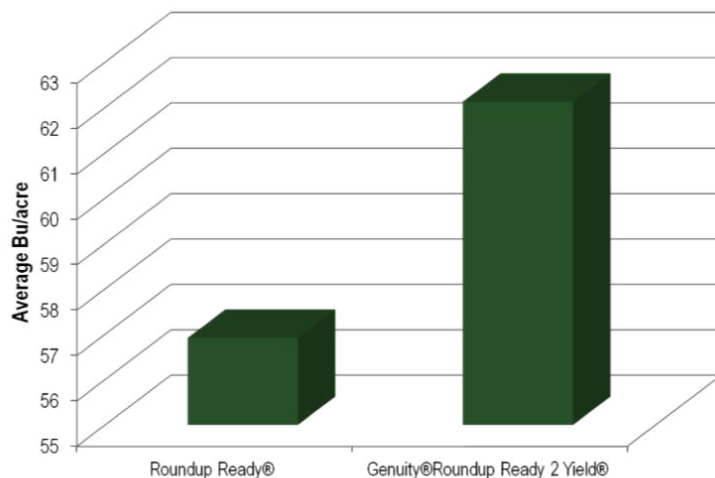


Figure 2. Average grain yield across all locations (3 years). *Significant at 0.05.

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Table 1. Laboratory Seed Quality Results (University-Saved Roundup Ready® Soybeans)					
	Minimum Values*				
	Fall 2012	Spring 2013	Fall 2013	Spring 2014	Fall 2014
Mechanical Purity %	69.5	97.5	93	96.4	89.7
Seeds/lb	2152	2161	2234	2199	2413
Seed Moisture Content %	9.1	8.4	10.1	10.4	8.1
Terazolium Test %	61	78	85	73	82
Varietal Purity % (via lab analysis)	-	100	-	88.5	96.8
Varietal Purity % (via field grow-outs)	-	94.7**	-	-	-

* Results from the Indiana Crop Improvement Association, Lafayette, IN.
 ** One seed lot contaminated at greater than 40% was not included in this calculation.

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Action

Legal Questions

Although the patent on Roundup Ready® soybeans has expired, many soybean products that carry the Roundup Ready trait are also covered by a variety patent. Some seed companies that offer soybean products with the Roundup Ready trait may enforce their variety patent to prevent the saving and planting of their soybean products. Farmers interested in saving and replanting first-generation Roundup Ready soybeans should ensure they have applicable licenses to do so under any variety patents that cover that seed. Farmers also need to observe the rules about how that seed may be saved (only from their own farm and planted back to their own farm). The best method to find out which soybean products may or may not be available to save is to check directly with the seed dealer. In addition, the web site www.soybeans.com has been developed to answer questions about Roundup Ready soybeans post-patent.

Costs and Quality

In addition to determining which seed can be legally saved and which licenses may be necessary, farmers should also consider the economics of saving seed.

- Every bushel saved for planting is a bushel that is not available for sale as commodity grain.
- Cleaning saved seed is a necessary expense.
- Treating seeds will add costs to saved seed.
- Newer products and those with newer technologies offer higher yield potential. Genuity® Roundup Ready 2 Yield® soybean products yielded on average about 5.2 bushels more per acre than the university-saved Roundup Ready products.

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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.

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