

AGRONOMIC Spotlight



Planting Soybeans after Soybeans February 2010

The wet weather conditions last fall will be impacting planting decisions made this spring. Because wet weather slowed and even postponed harvest in many regions, numerous fields were not sown to wheat as planned. As a result, some farmers may strongly consider planting soybeans after soybeans on those wheat acres that either were not planted or will be destroyed due to inadequate stands coming out of the winter.

It can be risky to grow soybeans in the same field year after year. However, certain management practices can be used to lessen the negative impact of growing soybeans continuously. A yield loss of 5 to 15% is realistic from continuous soybeans when compared to a corn-soybean rotation. And though you may not experience that much yield loss, some decrease in yield potential might be expected.

Choose Fields Wisely

The yield penalty for growing continuous soybeans is generally less in environments better suited for crop growth. Soybeans planted after soybeans may have a higher yield potential in fields that do not have a history of insect and disease problems. More problems with soybean cyst nematode (SCN) occur in continuous soybeans because the constant presence of a host crop can allow for populations to multiply quickly. SCN is effectively managed through crop rotation. If a field has a history of SCN, it is best kept in rotation with other crops. Low lying fields or fields with poor drainage are not ideal for planting soybeans after soybeans due to the potential for disease development.



Figure 1. Soybean cyst nematodes (SCN) on soybean roots. SCN populations increase in field planted to continuous soybean.

that have above-average tolerance to SDS and white mold may help reduce potential damage caused by these diseases. However, soybean products with genetic tolerance to BSR and SDS are limited. Therefore, alternative strategies for fields with a history of these diseases may include planting later in the season or planting soybean products with shorter relative maturities.

Wet fields are more prone to disease development, especially *Pythium* and *Phytophthora* root rot. Select soybean products that exhibit high levels of partial resistance or field tolerance to *Phytophthora* root rot along with a specific gene for resistance, such as Rps1c or Rps1k.

Disease Management

When planting soybeans in a field for a second year, a buildup of disease inoculum can develop on crop debris. This can result in the potential for more disease, which may be especially problematic when environmental conditions favor disease development. Soybean Sudden Death Syndrome (SDS), Brown stem rot (BSR), and Frogeye leaf spot are traditional disease problems in soybeans. In Northern states, white mold can cause significant damage in infested fields. Selecting soybean products with resistance or partial resistance, along with products

Recommendations for Weed Management in a Continuous Roundup Ready® Soybean System	
Practice	Herbicide Recommendation
Start Clean with tillage or burndown for no-till	Roundup PowerMAX® ¹ at 22-44 fl oz/A + or 2,4-D ester at 16 fl oz/A ² + one of the following residual herbicides: · Valor® at 2 oz/A · Valor XLT at 3 oz/A · Gangster® at 2.4 oz/A · INTRRO® at 2 qts/A
PRE at planting	Roundup PowerMAX® ¹ at 22-32 fl oz/A + one residual herbicide listed above
POST (option 1)	Roundup PowerMAX ¹ at a minimum of 22 fl oz/A as directed by product label
POST (option 2)	Roundup PowerMAX ¹ at 22-32 fl oz/A + Flexstar® at 1.25 pt/A (or other postemergence herbicides) as needed

Chart 1. Recommendations for Weed Management in a Continuous Roundup Ready Soybeans.

PRE—Pre-emergence; POST—Post-emergence
¹In all treatments, Roundup WeatherMAX® may be substituted for Roundup PowerMAX® at same recommended rates.
²Plant-back restriction is at least 7 days for an application of 2,4-D ester at 16 oz/A, refer to label for plant-back restrictions at higher rates. Rate assumes 3.8 lbs a.i./gallon formulation.

Weed Management

Weed control is more difficult in soybeans planted after soybeans. When fields are planted in a crop rotation, weeds are constantly kept off balance. It is more difficult to rotate herbicide modes of action when planting the same crop the next year. Fields planted to continuous soybean pose a greater potential for weed resistance or a shift to more tolerant weeds. A recommended herbicide program for soybeans following soybeans is provided in Chart 1. It is important to start the season with a clean field with

▶ from previous page **Planting Soybeans after Soybeans**

burndown or tillage. **Be sure to follow all plant-back restrictions listed on the product labels when using 2,4-D in a burndown application.** Incorporating residual herbicides along with Roundup® agricultural herbicide in a Roundup Ready® weed control system provides multiple modes of action and can help manage the potential for weed population shifts or herbicide tolerance. A residual herbicide should be applied to aid in the control of problem weed species.

Soil and Other Considerations

It is important to maintain good soil fertility and pH levels in fields planted to continuous soybeans. Soils should be tested and the recommended amounts of lime and fertilizer should be applied. It is ideal to maintain soil pH in the 6.5 to 7.0 range to ensure optimal nutrient availability. Soybeans use a large amount of potassium, most of which is taken up within 2 to 3 months after emergence. Potassium deficiency restricts soybean grain development by reducing the size and weight of the seed. A spring application of potash should be considered on soils that tend to tie up or leach potassium. Sandy soils, in particular, lack the ability to hold sufficient amounts of potassium.

Seedling mortality increases in fields planted to continuous soybeans. As a result, it is important to maintain or even slightly increase seeding rates and consider using seed treatments to help establish a good stand.

Scout continuous soybean fields regularly so that management practices can be implemented to help reduce plant stress and the possible negative impact on yield potential. Remember, crop rotation is the most effective cultural control strategy, plan to rotate out of soybeans for the 2011 growing season.

Management Suggestions for Raising Soybeans after Soybeans

1. Select a soybean product with low susceptibility to white mold and other diseases that may overwinter.
2. Plant in wide rows (30 inch) to reduce the development and spread of diseases.
3. Plant shorter season soybean products and delay planting to reduce white mold pressure and/or SDS.
4. Use different weed control programs and include herbicides with different modes of action.
5. Use a seed treatment at planting.
6. Soil test and apply recommended amounts of lime, phosphorus or potash.

Sources: Raising Non-Rotation Soybeans. Palle Pedersen, et al. Dept. of Agronomy, Univ. of WI. www.soils.wisc.edu.

Soybeans Following Soybeans. Oct. 2, 2008. www.extension.org

Wiebold, B. Soy Doc: Planting Continuous Soybeans. MU Agronomy Extension Website. March 2001. www.psu.missouri.edu

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.

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. INTRRO® is a restricted use pesticide and is not registered in all states. The distribution, sale, or use of an unregistered pesticide is a violation of federal and/or state law and is strictly prohibited. Check with your local Monsanto dealer or representative for the product registration status in your state. Technology Development by Monsanto and Design(SM) is a servicemark of Monsanto Technology LLC. INTRRO®, Roundup®, Roundup PowerMAX®, Roundup Ready®, and Roundup WeatherMAX® are registered trademarks of Monsanto Technology LLC. Valor® is a registered trademark of Valent U.S.A. Corporation. All other trademarks are the property of their respective owners. ©2010 Monsanto Company.022510CRB