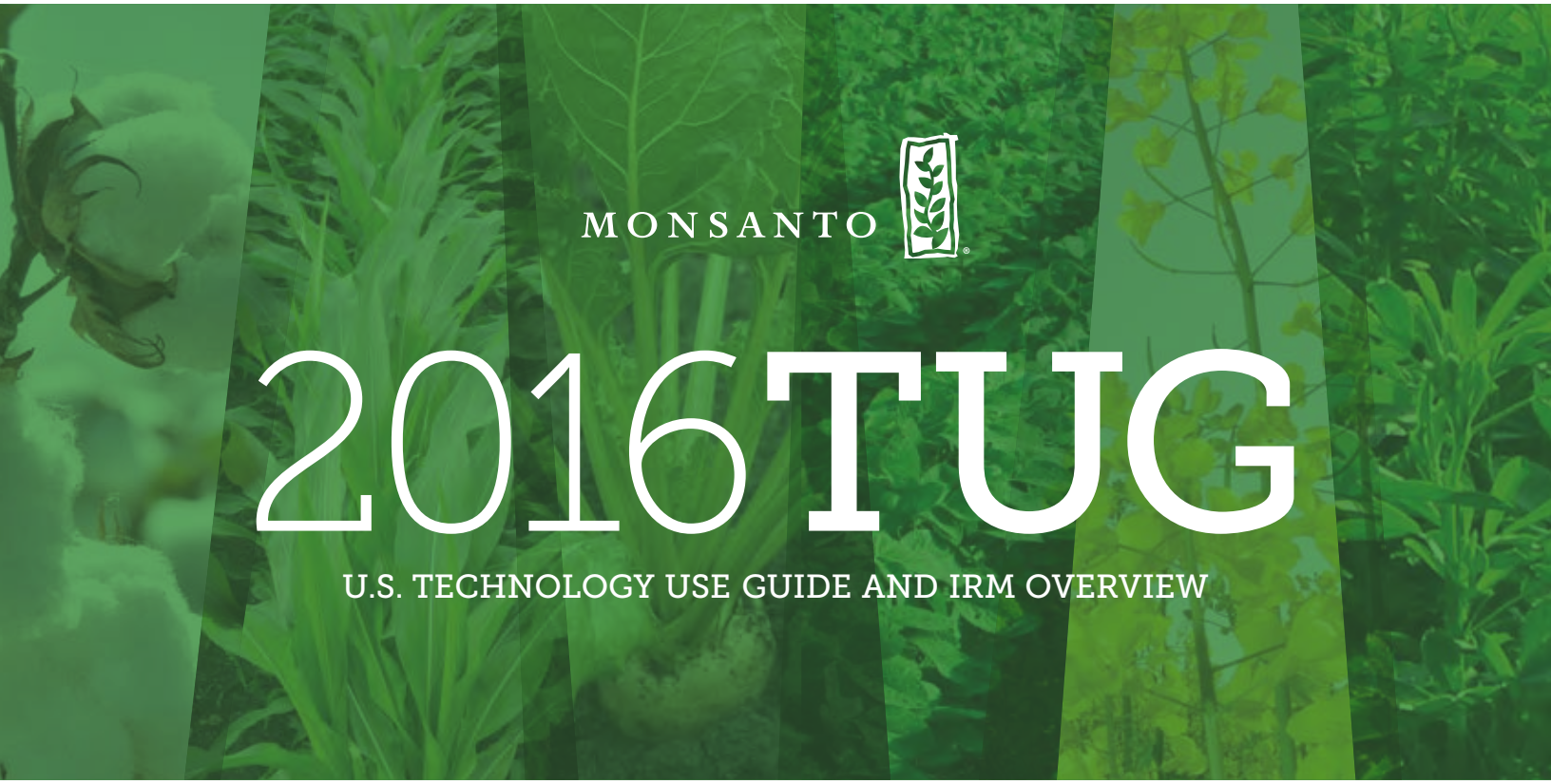


2016 TUG

U.S. TECHNOLOGY USE GUIDE AND IRM OVERVIEW

A More Convenient Way to Manage Your Monsanto Technology/Stewardship Agreement (MTSA).

Monsanto has adopted the AgCelerate Stewardship platform, an industry-wide licensing solution enabling growers to manage their licensing requirements. If you previously signed an MTSA, you can now go to www.AgCelerate.com, register and verify your grower information.

Growers who have not previously signed an MTSA can register at www.AgCelerate.com and complete the entire licensing process online.

AgCelerate provides a single registration process that enables you to sign Seed/License Agreements for multiple trait providers.

Spend more time on your business, and less time on paperwork. Go to www.AgCelerate.com and register today!

Additional Helpful Apps

Climate helps optimize a grower's daily decision making by providing up-to-the-minute, field-level weather, field workability, and crop growth stage information. Powered by the revolutionary Climate Technology Platform, Climate provides data-driven insights about your farm to support decisions that save time and increase profits.

FieldView extends the functionality of your 20/20 SeedSense® monitor by functioning as a second display in your cab. You can view real-time, row-by-row maps of your planter's performance. Then, when planting is complete, simply remove the iPad from your cab and have all of your 20/20 data with you at your fingertips — at home, the office, or as a scouting tool in the field.

Genuity® Rootworm Manager is an app that can be used by growers and dealers to help determine the risk of corn rootworm in each of their fields and provide management guidelines at each stage of the season. In a question and answer format, the app collects data on relevant past and present field practices. It then uses this information to analyze and assess current and future corn rootworm risk.

Featuring a mobile version of the Crop PHD tool, **Weed Manager Plus** delivers accurate weed management recommendations for your region, a tank mixing tool and a measurement conversion calculator for commercial growers.

YieldCheck by Precision Planting Inc. provides growers with a simple way to calculate and store corn yield estimates. Users can organize estimates based on client, farm, and field. Also see the location of all of your estimates on a map with satellite imagery. It is as simple as entering kernel counts for 3 ears of corn and revealing the amount of bushels you can expect this fall. Subsequently growers can use the field report feature to see just how much of a difference one additional ear per acre can mean to their operation.

Introduction

This 2016 Technology Use Guide (TUG) provides a concise source of technical information about Monsanto's current portfolio of technology products and sets forth requirements and guidelines for the use of these products. As a user of Monsanto Technology, it is important that you are familiar with, and follow, certain management guidelines. Please read all of the information pertaining to the technology you will be using, including stewardship and related information. Growers planting corn or cotton insect-resistant traits must also read the corn bag tag or the cotton 2016 IRM Grower Guide.

This technical guide is not a pesticide product label. It is intended to provide additional information and to highlight approved uses from certain product labels. Read and follow all precautions and directions in the label booklet and separately published supplemental labeling for the Roundup® agricultural herbicide product you are using, as well as any other pesticide products.

Stewardship Overview

A Message About Stewardship

Monsanto Company is committed to enhancing grower productivity and profitability through the introduction of new agricultural biotechnology traits and other products. These new technologies bring enhanced value and benefits to growers, and growers assume responsibilities for proper management of these products. Growers planting seed with biotech traits and/or seed treatments agree to implement the following stewardship requirements, including, but not limited to:

- Reading, signing and complying with the Monsanto Technology/ Stewardship Agreement (MTSA) and reading all annual license terms and updates before purchase or use of any seed containing a Monsanto trait.
- Reading and following the directions for use on all product labels.
- Reading and following the Insect Resistance Management (IRM) Grower Guide prior to planting; complying with the applicable IRM requirements for specific biotech traits as mandated by the U.S. Environmental Protection Agency (EPA).
- Observing regional planting restrictions mandated by the EPA.
- Using seed containing Monsanto technologies solely for planting a single commercial crop.
- Complying with any additional stewardship requirements, such as grain or feed use agreements, product marketing requirements or geographical planting restrictions, that Monsanto deems appropriate or necessary to implement for proper stewardship or regulatory compliance.
- Selling crops or material containing biotech traits to only grain handlers that confirm their acceptance, or using those products on-farm.
- Not moving seed and material containing biotech traits across boundaries into nations where import is not permitted.
- Not selling, promoting and/or distributing a product within a state where the product is not yet registered.

In addition, growers are encouraged to:

- Follow applicable stewardship guidelines as outlined in this TUG.
- Follow the Herbicide Resistance Management Guidelines and the Corn Rootworm Recommendations to help minimize the risk of resistance development.

Why is Stewardship Important?

- Signing the MTSA provides growers access to Monsanto's germplasm and the biotech trait technologies therein, and provides limited warranties on Monsanto Technology performance.
- Following IRM requirements guards against insect resistance to *Bacillus thuringiensis (B.t.)* technologies, enabling the long-term durability of these technologies and meeting EPA requirements.
- Utilizing biotech seed only for planting a single commercial crop helps preserve the effectiveness of biotech traits, and encourages investment for future biotech innovations, which further improves farming technology and productivity.

Seed Patent Infringement

If Monsanto reasonably believes that a grower has planted saved seed containing a Monsanto biotech trait, Monsanto will request invoices and records to confirm that fields in question have been planted with newly purchased seed. This information is to be provided within seven days after written request. Monsanto may inspect and test all of the grower's fields to determine if saved seed has been planted. Any inspections will be coordinated with the grower and performed at a reasonable time to best accommodate the grower's schedule.

Crop or Material Handling Stewardship Statement

The following Excellence Through Stewardship® statement applies to Roundup Ready® Corn 2, Genuity® DroughtGard® Hybrids with Roundup Ready® Corn 2, YieldGard® Corn Borer Corn, YieldGard® Corn Borer with Roundup Ready® Corn 2, Genuity® VT Double PRO® Corn, Genuity® DroughtGard® Hybrids with VT Double PRO® Corn, Genuity® VT Double PRO® RIB Complete® Corn blend, Genuity® DroughtGard® Hybrids with VT Double PRO® RIB Complete® Corn blend, YieldGard VT Rootworm/RR2® Corn, Genuity® VT Triple PRO® Corn, Genuity® DroughtGard® Hybrids with VT Triple PRO® Corn, Genuity® VT Triple PRO® RIB Complete® Corn blend, Genuity® DroughtGard® Hybrids with VT Triple PRO® RIB Complete® Corn blend, Genuity® SmartStax® Corn, Genuity® SmartStax® RIB Complete® Corn blend, Genuity® Bollgard II® cotton, Genuity® Bollgard II with Roundup Ready® Flex cotton, Bollgard II® XtendFlex® cotton, Genuity® Roundup Ready® Flex cotton, Genuity® Roundup Ready® Sugarbeets, Genuity® Roundup Ready® Spring Canola, Genuity® Roundup Ready® Winter Canola, Performance Series® Sweet Corn, and Genuity® Roundup Ready 2 Yield® soybeans:

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.

Please see the product specific sections of Genuity® Roundup Ready® Flex Pima cotton, XtendFlex® cotton, Genuity® Roundup Ready® Alfalfa and HarvXtra™ Alfalfa with Roundup Ready® Technology for important information including material handling on those products.

If you have questions about seed stewardship or become aware of individuals utilizing biotech traits in a manner other than as noted above, please call 1-800-768-6387. Letters reporting unauthorized or improper use of biotech traits may be sent to:

Monsanto Stewardship
800 N. Lindbergh Boulevard E3NA
St. Louis, MO 63167

For more information on Monsanto's practices related to seed patent infringement, please visit: **www.monsanto.com/ourcommitments/Pages/seed-patent-protection.aspx**

Anyone may provide Anonymous or Confidential reports as follows:

"Anonymous" reporting results when a person reports information to Monsanto in such a way that the identity of the person reporting the information cannot be identified. This kind of reporting includes telephone calls requesting anonymity, emails and unsigned letters.

"Confidential" reporting results when a person reports information to Monsanto in such a way that the reporting person's identity is known to Monsanto. Every effort will be made to protect a person's identity, but it is important to understand that a court may order Monsanto to reveal the identity of people who are "known" to have supplied relevant information.

The Beyond the Seed Program was launched by the American Seed Trade Association (ASTA) to raise awareness and understanding of the value that goes beyond the seed. The future success of U.S. agriculture depends upon quality seed delivered by an industry commitment to bring innovation and performance through continued investment. For more information about seed technology, visit ASTA's Beyond the Seed Program at www.beyondtheseed.org.

Commitment to Steward Insect-Protected Traits

Monsanto is committed to the success of our grower customers by providing practical, flexible and cost-effective solutions that address on-farm challenges, contribute to grower choice and provide economic benefits to our customers. To ensure insect-protected *B.t.* traits remain a viable tool for growers, we are committed to ongoing conversations with the corn and cotton industries on the following IRM efforts to establish the most comprehensive approach to the stewardship of corn and cotton insect-protected traits.

Monsanto's ongoing IRM efforts:

- Continually working to increase overall awareness of the need for, and adoption of, strong IRM programs through our Monsanto seed dealers, as well as the academic community.
- Carefully evaluating the need for — and practicality of — updating our Best Management Practices or agronomic recommendations as new scientific data becomes available. Updates may include information tailored to local growing conditions, refuge compliance, scouting techniques, the addition of soil-applied insecticides, maturity and harvest schedules, soil management practices, crop rotation, and adoption of products with multiple modes of action.
- Expanding our offering of multi-gene corn hybrids and cotton varieties that provide dual modes of action and increase protection for growers. We encourage growers to begin trying these seeds with greater protection as the product line expands in their area.
- Researching and developing other genes in our pipeline so that we can continue to deliver products with new and increased modes of action.
- Continuing multi-year, wide-scale monitoring of insect populations through the Agricultural Biotechnology Stewardship Technical Committee (ABSTC) and the Cotton Technology and Stewardship Committee (CTSC), consortiums of agricultural biotechnology companies and associations.
- Actively investigating claims of insect resistance.
- Conducting thorough, generational studies on sample insect populations as appropriate to determine if stable and inherited resistance is present.
- Monitoring and studying the occasional performance issues in fields with very high insect population densities that exceed control thresholds.

Establishing Healthy Pollinator Habitat

Pollinators are essential to agricultural systems. By providing high-quality habitat for pollinators such as bees and monarch butterflies, you provide benefits to your farm by increasing the diversity of pollinators in your area and improving soil health. All of these benefits add up to a productive and sustainable farmscape.

Consider establishing a diverse habitat that has a mixture of wildflowers, milkweed and other beneficial plants to supply nutrition and breeding areas for a variety of pollinators, including bees, butterflies and birds. Plant this habitat in sites such as field borders, pivot corners, conservation lands, ditches, and buffers.

Every region is different. To get started, visit your local USDA service center (www.nrcs.usda.gov/wps/portal/nrcs/main/national/contact/local) or reach out to your local ag extension office (www.npic.orst.edu/pest/countyext.htm).

Insect Resistance Management (IRM) Requirements

An effective IRM program is a vital part of responsible product stewardship for insect-protected biotech products. Monsanto is committed to implementing an effective IRM program for all of its insect-protected technologies in all countries where they are commercialized. Such programs strike a balance among available knowledge, practicality, and grower acceptance and implementation of the plan.

The U.S. Environmental Protection Agency (EPA) requires that Monsanto implement, and that growers who purchase insect-protected products follow, an IRM plan. IRM programs for *B.t.* traits are based upon an assessment of the biology of the major target pests, grower needs and practices, and appropriate pest management practices. These mandatory regulatory programs have been developed and updated in cooperation with grower and consultant organizations, including the National Corn Growers Association and the National Cotton Council, extension specialists, academic scientists, and regulatory agencies.

These programs contain several important elements. One key component is a refuge. A refuge is simply a portion of the relevant crop (corn or cotton) that does not contain a *B.t.* technology for the insect pests targeted by the planted biotechnologies. The lack of exposure to *B.t.* proteins allows susceptible insects emerging from the refuge to mate with the rare resistant insects that may emerge from the *B.t.* crop. Susceptibility to the *B.t.* technology would then be passed onto their offspring, helping to preserve the long-term effectiveness of that and possibly other *B.t.* technologies.

Growers who purchase seeds containing *B.t.* technology must plant a refuge.* Refuge size, configuration, and management are described in detail in the current IRM Grower Guide.

Monsanto is committed to the preservation of *B.t.* technologies. Please do your part to preserve *B.t.* technologies by implementing the correct IRM plan on your farm. Failure to follow IRM requirements and to plant a proper refuge may result in the loss of a grower's access to Monsanto *B.t.* technologies.

Compliance Monitoring Program

The EPA requires Monsanto to take corrective measures in response to a finding of grower IRM non-compliance. As mandated by the EPA, Monsanto or an approved agent of Monsanto must monitor refuge management requirements. The MTSA signed by the grower requires that upon request by Monsanto or its approved agent, a grower must provide the location of all fields planted with Monsanto *B.t.* technologies and the locations of all associated refuge required areas. The grower must cooperate fully with any field inspections, and allow Monsanto or an agent of Monsanto to inspect all fields and refuge areas to ensure an approved insect resistance management program has been followed. All inspections will be performed at a reasonable time and arranged in advance with the grower so that the grower can be present.

Questions? We're Here to Help.

Monsanto works to develop and implement IRM programs that strike a balance between available knowledge and practicality, with grower acceptance and implementation of the plan as critical components. Refuge requirements vary by the type of product being planted and the location of planting. Growers must plant the amount of refuge acres for a product that is required for their growing region. Please contact your seed dealer with any questions and/or call 1-800-768-6387.

Growers should monitor their fields and contact their seed dealer or Monsanto at 1-800-768-6387 if performance problems are observed.

IRM Requirement

Growers must read the current IRM Grower Guide prior to planting for information on required IRM. You may download a copy of the current IRM requirements at **www.monsanto.com** or **www.genuity.com**, or you may call 1-800-768-6387 to request a copy by mail. The corn product IRM Grower Guide is now located on the seed bag tag.

Before opening a bag of seed, be sure to read, understand and accept the stewardship requirements, **including applicable refuge requirements for insect resistance management,** for the biotechnology traits expressed in the seed as set forth in the Monsanto Technology/ Stewardship Agreement that you sign. By opening and using a bag of seed, you are reaffirming your obligation to comply with the most recent stewardship requirements.

*In some areas, a natural refuge option is available for Genuity® Bollgard II®.

When planted in the Corn-Growing Area, there are no requirements for a separate structured refuge for Genuity® SmartStax® RIB Complete® Corn Blend, Genuity® VT Double PRO® RIB Complete® Corn Blend, Genuity® DroughtGard® Hybrids with VT Double PRO® RIB Complete® Corn Blend, Genuity® VT Triple PRO® RIB Complete® Corn Blend, and Genuity® DroughtGard® Hybrids with VT Triple PRO® RIB Complete® Corn Blend. However, in the Cotton-Growing Area a 20% planted, structured refuge is required when planting Genuity SmartStax RIB Complete, Genuity VT Double PRO RIB Complete, Genuity DroughtGard Hybrids with VT Double PRO RIB Complete, Genuity VT Triple PRO RIB Complete and Genuity DroughtGard Hybrids with VT Triple PRO RIB Complete. See the current IRM Grower Guide on the corn bag tag for details.

Integrated Pest Management (IPM)

Integrated Pest Management (IPM) describes an effective and environmentally sustainable approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information is used to manage pests in a manner that is least impactful to people, property and the environment.

Prevention

Use the best agronomic management practices, in conjunction with the appropriate seed product, to help obtain the greatest yield benefits.

Use seed products, seeding rates and planting technologies appropriate for each specific crop and geographical area. As much as possible, manage the crop to avoid plant stress.

- Use proper crop rotation practices and multiple modes of action to control pests and make it more difficult for pests to adapt. In areas where crop rotation is not practiced, or where rotation occurs but high pest populations are observed, the use of products with multiple modes of action, such as Genuity® SmartStax® RIB Complete® corn blend, is strongly recommended.
- Employ appropriate scouting techniques and treatment decisions to preserve beneficial insects that can provide additional insect pest control.
- Manage for appropriate maturity and harvest schedules. Destroy crop residue immediately after harvest to avoid regrowth and minimize selection for resistance in late-season infestations.
- Use soil management practices that encourage destruction of over-wintering pests.

Monitoring Pests

Carefully monitor fields for all pests to determine the need for remedial insecticide treatments. For target pests, scouting techniques and supplemental treatment decisions should take into account the fact that larvae must hatch and feed before they will be affected by the *B.t.* protein(s). Fields should be scouted regularly, following periods of heavy or sustained egg lay, especially during bloom or flowering, to determine if significant larval survival has occurred.

In cotton, scouting should include a modified whole-plant inspection, including terminals and all stages of fruit. Larvae larger than 1/4 inch (3- to 4-days old) are generally recognized as survivors that may not be controlled by Genuity® Bollgard II® cotton.

Controlling Cotton Pests

Monsanto recommends the use of appropriate remedial insecticide treatments to help provide desired levels of control if any cotton insect pest reaches locally established thresholds in Genuity Bollgard II cotton.

Although Genuity Bollgard II cotton can sustain less damage from some of the most troublesome lepidopteran pests, it will not provide protection against all pests and may require insecticide treatments of target pests under conditions of high pest pressure. Insect pests should be monitored and treated with insecticides when necessary, using recommended thresholds and following label directions. Whenever possible, select insecticides that are least harmful to beneficial insects.

Performance Series® Sweet Corn

Under typical infestation levels, Performance Series® sweet corn effectively controls corn earworm, but under high infestation levels supplemental insecticide applications may be required to ensure quality ears at harvest. Thus, protection from corn earworm must be coupled with thorough scouting and spray programs to help maximize marketable yield potential.

Weed Management

Monsanto believes product stewardship is a fundamental component of customer service and responsible business practices. Monsanto is committed to the proper use and long-term effectiveness of its proprietary herbicide brands through a four-part stewardship program: developing appropriate weed control recommendations, continuing research to refine and update recommendations, education on the importance of effective weed management and responding to repeated weed control inquiries through a product performance evaluation process.

As leaders in the development and stewardship of Roundup® agricultural herbicides and other products, Monsanto invests significantly in research conducted in conjunction with academic scientists, extension specialists and crop consultants, that includes an evaluation of the factors that can contribute to the development of herbicide resistance and how to properly manage weeds to delay the selection for herbicide resistance. Visit **www.RoundupReadyPLUS.com** for practical, best practices-based information on reducing the risk for development of glyphosate-resistant weeds and for managing the risk on a field-by-field basis. In addition, visit **www.wssa.net** to access herbicide resistance training lessons that provide in-depth educational information.

Group Number

Glyphosate, the active ingredient in products such as Roundup WeatherMAX®, Roundup PowerMAX® and Roundup PowerMAX® II, is a Group 9 herbicide based on the mechanism of action classification system of the Weed Science Society of America. Using the same system, glufosinate, the active ingredient in Liberty® brand herbicides, is a Group 10 herbicide. Any weed population may contain plants naturally resistant to any herbicide group. Such resistant weed plants may not be effectively managed when using an herbicide that the weed plant is resistant to, but may be effectively managed utilizing another herbicide alone or in mixtures from different herbicide groups and/or by using cultural or mechanical practices. Consult your local brand representative, state cooperative extension service, professional consultants or other qualified authorities to determine appropriate actions for treating specific resistant weeds.

Weed Management Guidelines

Proactively implementing diversified weed control strategies to help minimize selection for weed populations resistant to one or more herbicides is recommended. A diversified weed management program may include the use of multiple herbicides with different mechanisms of action and overlapping weed spectrum with or without tillage operations and/or other cultural practices. Research has demonstrated that using the labeled rate and following label use directions is important to delay the selection for resistance. Scouting after a herbicide application is important because it can facilitate the early identification of weed shifts and/or possible herbicide-resistanct weeds and thus provide direction on future weed management practices. One of the best ways to manage resistant populations is to implement measures to avoid allowing weeds to reproduce by seed or to proliferate vegetatively. Cleaning equipment between sites and avoiding movement of plant material between sites will greatly aid in retarding the spread of resistant weed seed.

In Roundup Ready® and Roundup Ready Xtend™ Crop Systems it is important to start with a clean field, using either a burndown herbicide application or tillage, and to optimize glyphosate performance by controlling weeds early when they are small and actively growing.

In summary,

- Start with a clean field, free of weeds
- Use a diverse set of weed control tools, including residual herbicides that use a different mechanism of action
- Add other products, at the right rate and timing for the weed, to Roundup agricultural herbicides when needed
- Control weed escapes and remove weeds before they set seed

The Roundup Ready PLUS™ Crop Management Solutions by Monsanto is based upon the principle of growers implementing diversified weed management programs in Roundup Ready and Roundup Ready Xtend™ Crop Systems as described above. It is composed of recommendations and incentive programs. Roundup Ready PLUS represents Monsanto's commitment to providing solutions to farmers to help avoid and/or manage herbicide resistance to glyphosate and other herbicides in Roundup Ready and Roundup Ready Xtend Crop Systems. For more information visit **www.RoundupReadyPLUS.com.**

Monsanto supports the Take Action partnership. Take Action is an industry-wide partnership between university weed scientists, major herbicide providers and organizations representing corn, cotton, sorghum, soybean and wheat growers to help them manage herbicide-resistant weeds. The Take Action effort encourages the development of a proactive strategy to manage herbicide-resistant weeds that incorporates a diverse set of controls. To find out more, visit **www.TakeActionOnWeeds.com**, or contact your local extension office.

Glyphosate-Resistant Weeds

Monsanto investigates and studies new claims of potential glyphosate-resistant weeds. When glyphosate-resistant weed biotypes are confirmed, Monsanto provides recommended control measures, which may include additional herbicides, tank-mixes or cultural practices. Monsanto actively communicates all of this information to growers through multiple channels, including the herbicide label, **www.weedscience.org,** supplemental labeling, this TUG, media and written communications, Monsanto's website **www.RoundupReadyPLUS.com,** and grower meetings.

Read and follow all product labeling before making in-crop or other applications of Roundup® agricultural herbicides or using any other pesticide. For supplemental labels or fact sheets for Monsanto products, call 1-800-768-6387. Monsanto does not restrict your ability to use glyphosate herbicides so long as the product is specifically registered and labeled for in-crop use on the applicable crop. Read the product label or contact the product manufacturer if you have questions about EPA or state approvals for in-crop use. MONSANTO DOES NOT MAKE ANY REPRESENTATIONS, WARRANTIES OR RECOMMENDATIONS CONCERNING THE USE OF PRODUCTS MANUFACTURED OR MARKETED BY OTHER COMPANIES WHICH ARE LABELED FOR USE ON CROPS CONTAINING ROUNDUP READY® TECHNOLOGIES. MONSANTO SPECIFICALLY DISCLAIMS ALL RESPONSIBILITY FOR THE USE OF THESE PRODUCTS IN CROPS CONTAINING ROUNDUP READY TECHNOLOGIES. ALL QUESTIONS AND COMPLAINTS ARISING FROM THE USE OF PRODUCTS MANUFACTURED OR MARKETED BY OTHER COMPANIES SHOULD BE DIRECTED TO THOSE COMPANIES.

Growers must be aware of, and proactively manage for, glyphosate-resistant weeds in planning their weed control program. If a weed is known to be resistant to glyphosate, then a resistant population of that weed is by definition no longer controlled with labeled rates of glyphosate. Roundup WeatherMAX®, Roundup PowerMAX® and Roundup PowerMAX® II are not warranted to cover the failure to control glyphosate-resistant weed populations.

Report any incidence of repeated non-performance of Roundup agricultural herbicides or other glyphosate products on a particular weed to the appropriate company representative, local retailer, or county extension agent.

Recommendations for Managing Glyphosate-Resistant Weeds in Roundup Ready® and Roundup Ready® Xtend Crop Systems

Various weed biotypes are known to be resistant to glyphosate. For the current weed control recommendations for glyphosate-resistant weed biotypes, **refer to www.RoundupReadyPLUS.com or call 1-800-768-6387.** A complete list of specimen labels can be located at http://www.monsanto.com/products/Pages/msds-labels.aspx. Approved labels, including supplemental labeling, for Roundup agricultural herbicides must be in the possession of the user at the time of pesticide application and can be obtained by calling 1-800-768-6387 or by contacting your State Pesticide Lead Agency for more information.

Glyphosate Endangered Species Initiative Requirement

Before making an application of any glyphosate-based herbicide product, licensed growers of crops containing Roundup Ready technology must access the website **www.pre-serve.org** to determine whether any mitigation requirements apply to the planned application to those crops, and must follow all applicable requirements. The mitigation measures described on the website are appropriate for all applications of any glyphosate-based herbicide to all crop lands.

Growers making only ground applications to crop land with a use rate of less than 3.5 lbs. of glyphosate a.e./A are not required to access the website. If a grower does not have web access, the seed dealer can access the website on behalf of the grower to determine the applicable requirements, or the grower can call 1-800-332-3111 for assistance.

Roundup WeatherMAX®, Roundup PowerMAX® and Roundup PowerMAX® II

Roundup WeatherMAX®, Roundup PowerMAX® and Roundup PowerMAX® II are products sold for in-crop use with Roundup Ready and Roundup Ready Xtend crop systems for 2016.

Roundup WeatherMAX® | Roundup PowerMAX® | Roundup PowerMAX® II

Tank-mixtures of Roundup WeatherMAX, Roundup PowerMAX and Roundup PowerMAX II with insecticides, fungicides, micronutrients or foliar fertilizers are not recommended as they may result in reduced weed control, crop injury, reduced pest control or antagonism. Refer to the product label, supplemental labeling or fact sheets published separately by Monsanto for the Roundup agricultural herbicides tank-mix recommendations.

Surfactant Use with Glyphosate Products in Roundup Ready Crops

The addition of surfactants or additives containing surfactants to glyphosate spray solutions may increase the potential for crop injury.

When using Roundup WeatherMAX, Roundup PowerMAX or Roundup PowerMAX II herbicides, NO additional surfactant is needed for optimal performance for applications in Roundup Ready crops. Other glyphosate products labeled for use in Roundup Ready technologies may require the addition of surfactant or other additives to help optimize performance, except when used in Roundup Ready® Flex Cotton. Nonetheless, Monsanto does not recommend the addition of surfactant or additives containing surfactant to spray solutions of any glyphosate agricultural products used for postemergence (in-crop) or preharvest applications on these crops.

Coexistence

Coexistence in agricultural production systems and supply chains is well established and well understood. Different agricultural systems have coexisted successfully for many years around the world. Standards and best practices were established decades ago and have continually evolved to deliver high purity seed and grain to support production, distribution and trade of products from different agricultural systems. For example, production of similar commodities such as field corn, sweet corn and popcorn has occurred successfully and in close proximity for many years. Another example is the successful coexistence of oilseed rape varieties with low erucic acid content for food use and high erucic acid content for industrial uses.

The introduction of biotech crops generated renewed discussion focused on coexistence of biotech cropping systems with conventional cropping systems and organic production. These discussions have primarily focused on the potential marketing impact of the introduction of biotech products on other systems. The health and safety of biotech products are not an issue because their food, feed and environmental safety are demonstrated before they are allowed to enter the agricultural production system and supply chain.

The coexistence of conventional, organic and biotech crops has been the subject of several studies and reports. These reports conclude that coexistence among biotech and non-biotech crops is readily achievable and is occurring. They recommend that coexistence strategies be developed on a case-by-case basis considering the diversity of products currently in the market and under development, the agronomic and biological differences in the crops themselves and variations in regional farming practices and infrastructure. Any coexistence strategy is designed to meet market requirements and should be developed using current science-based industry standards and best management practices. Those strategies must be flexible, facilitate options and choice for the grower and the food and feed supply chain, and be capable of being modified as changes in markets and products warrant.

Successful coexistence of all agricultural systems depends on communication, cooperation, flexibility and mutual respect for each system among growers. Agriculture has a history of innovation and change, and growers have always adapted to new approaches or challenges by utilizing appropriate strategies, farm management practices and new technologies.

The responsibility for implementing best practices to satisfy specific marketing standards or certification lies with that grower who is growing a crop to satisfy a particular market. That grower is inherently agreeing to employ those practices appropriate to ensure the integrity and marketability of his or her crop. This is true whether the goal is high-oil corn, white or sweet corn, or organically produced yellow corn for animal feed. In each case, the grower is seeking to produce a crop that is supported by a special market price and consequently assumes responsibility for satisfying the market specifications to receive that premium. That said, each grower needs to be aware of the planting intentions of his or her neighbor in order to gauge the need for appropriate best management practices.

Identity Preserved Production

Some growers may choose to preserve the identity of their crops to meet specific markets. Examples of Identity Preserved (I.P.) corn crops include production of seed, white, waxy or sweet corn, specialty oil or protein crops, food grade crops and any other crop that meets specialty needs, including organic and non-genetically enhanced specifications. Growers of these crops assume the responsibility and receive the benefit for ensuring that their crop meets mutually agreed-upon contract specifications.

Based on historical experience with a broad range of I.P. crops, the industry has developed generally accepted I.P. agricultural practices. These practices are intended to manage I.P. production to meet quality specifications, and are established for a broad range of I.P. needs. The accepted practice with I.P. crops is that each I.P. grower has the responsibility to implement any necessary processes. These processes may include sourcing seed appropriate for I.P. specifications, field management practices such as adequate isolation distances, buffers between crops, border rows, planned differences in maturity between adjacent fields that might cross-pollinate and harvest and handling practices designed to prevent mixing and to maintain product integrity and quality. These extra steps associated with I.P. crop production are generally accompanied by incremental increases in cost of production and consequently the price of the goods sold.

General Guidelines for Management of Mechanical Mixing and Pollen Flow

For all crop hybrids or varieties that growers wish to identity preserve, or otherwise keep separated, they should take steps to prevent mechanical mixing. Growers should make sure all seed storage areas, transportation vehicles and planter boxes are cleaned thoroughly both prior to and subsequent to the storage, transportation or planting of the crop. Growers should also make sure all combines, harvesters and transportation vehicles used at harvest are cleaned thoroughly both prior to and subsequent to their use in connection with the harvest of the grain produced from the crop. Growers should also make sure all harvested grain is stored in clean storage areas where the identity of the grain can be preserved.

Self-pollinated crops, such as soybeans, do not present a risk of mixing by cross-pollination. If the intent is to use or market the product of a self-pollinated crop separately from general commodity use, growers should plant fields a sufficient distance away from other crops to prevent mechanical mixture during harvest.

Growers planting cross-pollinated crops, such as corn or alfalfa, who desire to preserve the identity of these crops, or to help minimize the potential for these crops to outcross with adjacent fields of the same crop kind, should use the same generally accepted practices to manage mixing that are used in any of the currently grown I.P. crops of similar crop kind.

It is generally recognized in the industry that a certain amount of incidental, trace level pollen movement occurs, and it is not possible to achieve 100% purity of seed or grain in any crop production system. A number of factors can influence the occurrence and extent of pollen movement. As stewards of technology, growers are expected to consider these factors and talk with their neighbors about their cropping intentions.

Growers should take into account the following factors that can affect the occurrence and extent of cross-pollination to or from other fields. Information that is more specific to the crop and area may be available from state extension offices.

- **Cross-pollination is limited.** Some plants are incapable of cross-pollinating, while others, like alfalfa, require cross-pollination to produce seed. Importantly, cross-pollination only occurs within the same crop kind, like corn to corn.
- **The amount of pollen produced within the field can vary.** The pollen produced by the crop within a given field, known as pollen load, is typically high enough to pollinate all of the plants in the field. Therefore, most of the pollen that may enter from other fields falls on plants that have already been pollinated with pollen that originated from plants within the field. In crops such as alfalfa, the hay cutting management schedule significantly limits or eliminates bloom, and thereby restricts the potential for pollen and/or viable seed formation.
- **The existence and degree of overlap in the pollination period of crops in adjacent fields varies.** This will vary depending on the maturity of crops, planting dates and the weather. For corn, the typical pollen shed period lasts from 5 to 10 days for a particular field. Therefore, viable pollen from neighboring fields must be present when silks are receptive in the recipient field during this brief period to produce any grain with traits introduced by the out-of-field pollen.
- **Distance between fields of different varieties or hybrids of the same crop:** The greater the distance between fields the less likely their pollen will remain viable and have an opportunity to mix and produce an outcross. For wind-pollinated crops, most cross-pollination occurs within the outermost few rows of the field. In fact, many white and waxy corn production contracts ask the grower to remove the outer 12 rows (30 ft.) of the field in order to remove most of the impurities that could result from cross-pollination with nearby yellow dent corn. Furthermore, research has also shown that as fields become further separated, the incidence of wind-modulated cross-pollination drops rapidly. Essentially, in-field pollen has an advantage over the pollen coming from other fields for receptive silks because of its volume and proximity to silks.
- **The distance pollen moves.** How far pollen can travel depends on many environmental factors, including weather during pollination, especially wind direction and velocity, temperature and humidity. For bee-pollinated crops, the grower's choice of pollinator species and apiary management practice may reduce field-to-field pollination potential. All these factors will vary from season to season, and some factors from day to day and from location to location.
- **For wind-pollinated crops, the orientation and width of the adjacent field in relation to the dominant wind direction.** Fields oriented upwind during pollination will show dramatically lower cross-pollination for wind-pollinated crops, like corn, compared to fields located downwind.

Treated Seed Best Management Practices

The use of seed treatment technologies by farmers is an effective tool to provide the necessary protection of seeds for a strong, healthy start. Seed treatments deliver a precise application that shields seeds from the insects and diseases that exist in the soil during those early developmental stages.

Below are some recommended best management practices in connection with the handling and planting of treated seed:

- Avoid off-site movement of dust from treated seeds during planting or when opening seed containers by observing wind speed and direction.
- During planting, be aware of the presence of honeybee hives, or crops or weeds in the flowering stage within or adjacent to the field, which could attract pollinators. Fill the planter at least ten yards inside the field to be planted.
- Avoid shaking the bottom of the treated seed bag when filling the planter. This reduces the release of dust that could have accumulated during transport.
- For pneumatic planters, direct air exhaust downward towards the soil surface if possible to decrease the potential for dust drift.
- Properly dispose of any spilled treated seed to minimize exposure to people, livestock, wildlife and the environment.
- Return leftover treated seed to its original seed lot containers if treated seed is intended for storage and use at a later date.
- Note that there is zero tolerance for treated seed kernels in the commodity grain channel when the seed tag states that the treated seed is not to be used for food, feed, or oil purposes.

For more information, refer to The Guide to Seed Treatment Stewardship, produced by the American Seed Trade Association (ASTA) and Crop Life America (CLA) at **http://seed-treatment-guide.com.**

Seed Treatment MATTERS

Honey Bee Health Information

From time to time claims circulate that insect protected GMO crops harm bees. The insecticidal proteins produced by the currently available insect protected crops are derived from a common soil bacterium and Monsanto screens all of the proteins we use for toxicity to honey bees. None of the proteins have provided any evidence of harm in either short or long term testing with both adult and larval honey bees. Likewise, there are no credible reports of harm caused by insect protected GMO crops on honey bees.

In recent years, overwinter losses of honey bee colonies have increased significantly. There are many possible causes, but parasites (such as the Varroa mite), diseases, the pesticides used to control mites and diseases, poor nutrition, transportation stress and pesticides including neonicotinoid insecticides are often cited.

Monsanto has many efforts underway to improve honey bee health:

- Our Honey Bee Advisory Council helps guide our honey bee health research and development efforts;
- We are developing new, targeted treatments for Varroa mites and viruses;
- We established a seed treatment insecticide stewardship plan to manage risks to beneficial insects such as bees;
- We actively support collaborations with all levels of the honey bee industry, USDA researchers, university researchers, pollinator dependent agriculture and corn and soybean growers to identify ways to improve honey bee health.

Corn Technologies

Genuity® SmartStax® Products containing this technology contain Cry1A.105, Cry2Ab2, Cry1F, Cry3Bb1, Cry34Ab1 and Cry35Ab1 from *B.t.* that together control European corn borer, southwestern corn borer, southern cornstalk borer, corn earworm, fall armyworm, stalk borer, lesser corn stalk borer, sugarcane borer, western bean cutworm, black cutworm, western corn rootworm, northern corn rootworm, and Mexican corn rootworm. Routine applications of insecticides to control these insects are usually unnecessary when corn containing Genuity SmartStax is planted. Products containing this technology also contain Roundup Ready® 2 Technology and LibertyLink® technology that provide tolerance to in-crop applications of labeled Roundup® agricultural herbicides and Liberty® herbicides, respectively, when applied according to label directions.

Genuity® VT Triple PRO® Products containing this technology contain Cry1A.105, Cry2Ab2 and Cry3Bb1 from *B.t.* that together control European corn borer, southwestern corn borer, sugarcane borer, southern cornstalk borer, corn earworm, fall armyworm, corn stalk borer, western corn rootworm, northern corn rootworm, and Mexican corn rootworm. Products containing this technology also contain Roundup Ready 2 Technology that provides tolerance to in-crop applications of labeled Roundup agricultural herbicides when applied according to label directions.

Genuity® VT Double PRO® Products containing this technology contain Cry1A.105 and Cry2Ab2 from *B.t.* that together control European corn borer, southwestern corn borer, sugarcane borer, southern cornstalk borer, corn earworm, corn stalk borer, and fall armyworm. Products containing this technology also contain Roundup Ready 2 Technology that provides tolerance to in-crop applications of labeled Roundup agricultural herbicides when applied according to label directions.

YieldGard® Corn Borer Products containing this technology contain Cry1Ab from *B.t.* which controls European corn borer, southwestern corn borer and sugarcane borer. **YieldGard® Corn Borer with Roundup Ready® Corn 2** contains Roundup Ready 2 Technology that provides tolerance to in-crop applications of labeled Roundup agricultural herbicides when applied according to label directions.

Roundup Ready® Corn 2 and Roundup Ready® 2 Technology corn products contain in-plant tolerance to the active ingredient in Roundup agricultural herbicides.

Genuity® Droughtgard® Hybrids contain cold shock protein B from *Bacillus subtilis,* a protein that can mitigate the effects of drought stress.

Acceleron® Seed Treatment Products deliver exclusive active ingredients that matter. For more information talk to your local retailer.

Monsanto BioAg™ Products offer leading biological solutions for agriculture. For more information, talk to your local retailer or discover more at **monsantobioag.com.**

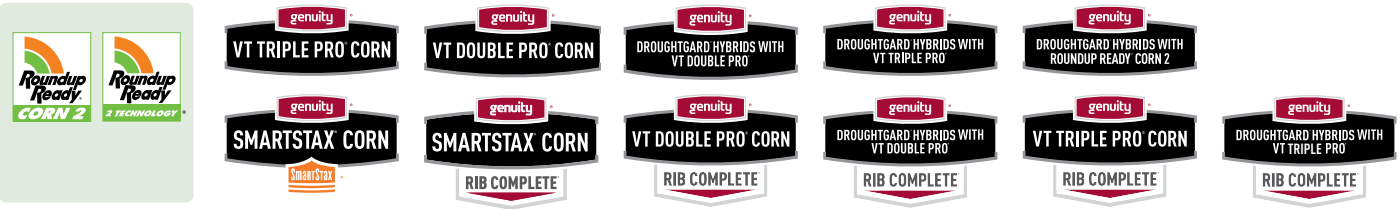
Genuity® SmartStax® RIB® Complete® Corn Blend, Genuity® VT Double PRO® RIB Complete® Corn Blend, Genuity® DroughtGard® Hybrids with VT Double PRO® RIB Complete® Corn Blend, Genuity VT Triple PRO® RIB Complete® Corn Blend and Genuity® DroughtGard® Hybrids with VT Triple PRO® RIB Complete® Corn Blend require a 20% planted, structured refuge in the Cotton-Growing Area. See map in cotton trait section.

Corn Technologies with Refuge-in-a-Bag

Genuity® RIB Complete® Corn Blend has refuge seed contained in the bag, resulting in a refuge configuration that is interspersed within the field.

Corn Technologies with Genuity® DroughtGard® Hybrids

Corn Technologies with Roundup Ready® 2 Technology



Weed Management

The Roundup Ready® 2 Technology system enables flexibility, broad-spectrum weed control and proven crop safety. Growers can select the weed control program that best fits the way they farm and provides them the greatest benefit. Options include the use of a residual herbicide with Roundup® agricultural herbicides, tank-mixing other herbicides with Roundup agricultural herbicides where appropriate and a total postemergence program.

Corn yield is very sensitive to early-season weed competition. Weed control systems must provide growers the opportunity to control weeds before they become competitive. The Roundup Ready 2 Technology system provides a mechanism to control weeds at planting and once they emerge. Failure to control weeds with the right rate, at the right time and with the right product, can lead to increased weed competition, weed escapes, the potential for selecting for herbicide resistance and possible decreased yields. Use a diversity of weed management tools, including multiple herbicide mechanisms of action if appropriate, alone or in tank mixes, with Roundup agricultural herbicides, based on the weed spectrum in the field and according to label directions.

Guidelines

Follow all pesticide label requirements. Follow the guidelines below to help minimize the risk of developing glyphosate-resistant weed populations in a Roundup Ready 2 Technology system.

- Start clean with a burndown herbicide or tillage. Early-season weed control is critical to yield.
- Apply preemergence residual herbicides such as Harness® Xtra, Degree Xtra®, TripleFLEX® Herbicide or other residual herbicides at the application rate specified on the product label.
- Or apply a preemergence residual herbicide at the appropriate application rate tank-mixed with a minimum of 22 oz/A Roundup WeatherMAX® in-crop before weeds exceed 4" in height.
- Follow with a postemergence in-crop application of Roundup WeatherMAX at a minimum of 22 oz/A for additional weed flushes before they exceed 4" in height.
- Roundup WeatherMAX may be tank-mixed with other herbicides for postemergence weed control.
- Report any incidence of repeated non-performance of Roundup agricultural herbicides or other glyphosate products on a particular weed to the appropriate company representative, local retailer, or county extension agent.

Additional Information

Various weed biotypes are known to be resistant to glyphosate. For the current weed control recommendations for glyphosate-resistant weed biotypes, **refer to www.RoundupReadyPLUS.com or call 1-800-768-6387.** A complete list of specimen labels can be located at **http://www.monsanto.com/products/Pages/msds-labels.aspx.** Approved labels, including supplemental labeling, for Roundup agricultural herbicides must be in the possession of the user at the time of pesticide application and can be obtained by calling 1-800-768-6387 or by contacting your State Pesticide Lead Agency for more information.

Corn Refuge Requirements

Growers must read the IRM Grower Guide prior to planting for information on required IRM. The corn product IRM Grower Guide is now located on the seed bag tag.

Monsanto's U.S. EPA registrations for corn event MON 810 expired on September 30, 2015. Monsanto products that are impacted are YieldGard® Corn Borer and YieldGard Corn Borer with Roundup Ready® Corn 2. See page 6 of this section for details and important restrictions on planting.

Resistance has developed in nature to many pest control tactics. The risk of insect resistance is real, but may be reduced with proper planning. The best way to preserve the benefits and insect protection of *B.t.* technology is to develop and implement an IRM plan.

A key component of any IRM plan is a refuge. A refuge is a block or strip of the same crop that does not contain a *B.t.* technology for controlling targeted insect pests, or the refuge can be included in an EPA approved seed blend product provided by qualified seed producers/conditioners, licensed by Monsanto. There are no requirements for a separate structured refuge for approved seed blend products when planted in the U.S. Corn-Growing Area because the refuge seed is contained within the bag/container. Monsanto does not recommend the planting of seed blend products in the Cotton-Growing Area. If planted in a cotton area, an additional 20% structured refuge is required.

The primary purpose of a refuge is to maintain a population of insect pests that are not exposed to *B.t.* proteins. The lack of exposure to *B.t.* proteins allows susceptible insects emerging from the refuge to mate with the rare resistant insects that may emerge from the *B.t.* crop. Susceptibility to *B.t.* technology would then be passed on to their offspring, helping to preserve the long-term effectiveness of *B.t.* technologies. To help reduce the risk of insects developing resistance, the refuge should be planted with a similar non-*B.t.* product (e.g., a similar relative maturity), as close as possible to, and at the same time as, the crop containing *B.t.* technologies.

As a condition of registration of *B.t.* products by the EPA, seed companies are required to conduct IRM compliance assessments during the growing season to ensure grower compliance. Failure to follow IRM guidelines and properly plant a refuge may result in the loss of access to *B.t.* technologies. Please do your part to ensure these technologies are preserved by fully cooperating in refuge management. Continued availability of *B.t.* technologies depends on grower compliance with EPA registration conditions. With an effective IRM plan in place, growers will continue to benefit from the effective and consistent insect protection and top-yield potential found in crops containing these technologies.

Refuge Planting

- Grower mixing of non-*B.t.* seed with *B.t.* technologies is not permitted. However, non-*B.t.* seed can be included in an EPA approved seed blend product, if provided by qualified seed producers/conditioners, licensed by Monsanto.
- Plant the structured refuge at the same time as the *B.t* technologies to help ensure that development is similar among products.
- To avoid inadvertent mixing of seed in the planting process, be sure to clean all seed out of hoppers when switching from non-*B.t.* seed to traited seed, or vice versa.
- Adjacent and separate refuge fields must be planted and managed by the same grower.
- If *B.t.* corn technologies are planted on rotated ground, then the corn refuge can be planted on either continuous corn ground or on rotated ground.
- If *B.t.* corn technologies are planted on continuous corn ground, then the corn refuge must also be planted on continuous corn ground.

Integrated Pest Management (IPM)

Sustainable Agriculture

Monsanto *B.t.* corn products are highly compatible with the goals of IPM and sustainable agriculture. Sustainability of corn agricultural systems is enhanced when growers follow recommended IPM practices, including cultural and biological control tactics, pest sampling and appropriate use of pest thresholds for management practices. These latter measures are not only important for non-*B.t.* refuge acres, but are equally important for detecting and controlling non-target pests that exceed established thresholds on *B.t.* crops.

Pests Not Controlled

Specific *B.t.* corn products offer control against several of the key lepidopteran and coleopteran insect pests, but will not control all insect pests in corn. Therefore, it is important to understand that, in some cases, severe infestations of target and/or non-target insects may require additional control measures/treatment. **Fields should be scouted regularly, especially during periods of heavy or sustained pest presence.** Consult local IPM monitoring guidelines to identify insects that should be routinely monitored, and for recommended controls and thresholds. When insecticide treatments are required, select products that have the least impact on beneficial insects. Consult your local crop adviser or extension specialist for the most up-to-date information.

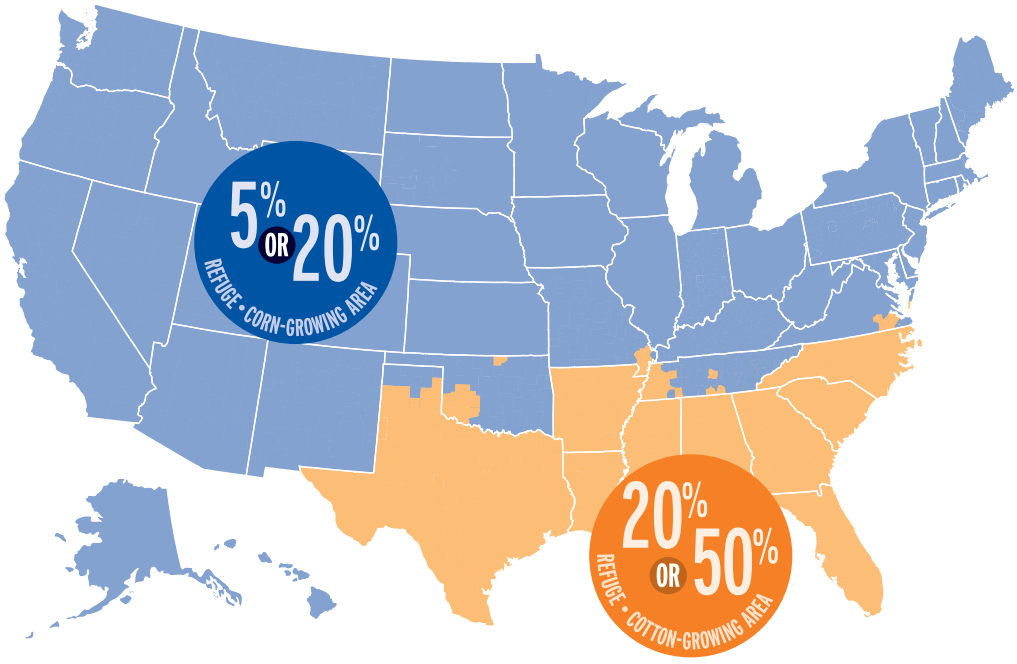
An IPM Checklist

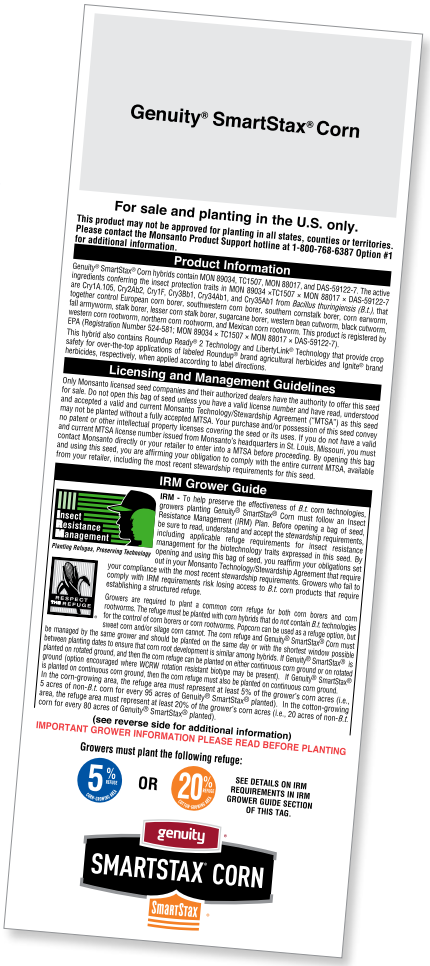
- Employ appropriate scouting techniques and treatment decisions.
- Select insecticide treatments that have minimal negative impact on beneficial insects whenever possible; these insects are conserved by *B.t.*-protected crops and can contribute to insect pest control.
- Rotate insecticide mode of action to help reduce the risk of insect pests developing chemical resistance.
- Select cultivars well-adapted to your setting, giving appropriate attention to impact of crop maturity and timing of harvest on pest severity.
- Use recommended cultural control methods to reduce pest overwintering; destroy crop promptly after harvest and use other soil management practices to reduce overwintering insects.

Requirements by Growing Area

The following states and counties are within the **Corn-Growing Area.**
The blue circle structured refuge requirements apply to non-RIB *B.t.* corn products grown in this area.

Alaska
Arizona
California
Colorado
Connecticut
Delaware
Hawaii
Idaho
Illinois
Indiana
Iowa
Kansas
Kentucky
Maine
Maryland
Massachusetts
Michigan
Minnesota
Missouri–*all counties* ***except*** *Dunklin, New Madrid, Pemiscot, Scott & Stoddard*
Montana
Nebraska
Nevada
New Hampshire
New Jersey
New Mexico
New York
North Dakota
Ohio
Oklahoma–*all counties except Beckham, Caddo, Comanche, Custer, Greer, Harmon, Jackson, Kay, Kiowa, Tillman & Washita*
Oregon
Pennsylvania
Rhode Island
South Dakota
Tennessee–*all counties* ***except*** *Carroll, Chester, Crockett, Dyer, Fayette, Franklin, Gibson, Hardeman, Hardin, Haywood, Lake, Lauderdale, Lincoln, Madison, Obion, Rutherford, Shelby & Tipton*
Texas–***only*** *the counties of Carson, Dallam, Hansford, Hartley, Hutchinson, Lipscomb, Moore, Ochiltree, Roberts & Sherman*
Utah
Vermont
Virginia–*all counties* ***except*** *Dinwiddie, Franklin City, Greensville, Isle of Wight, Northampton, Southampton, Suffolk City, Surrey & Sussex*
Washington
West Virginia
Wisconsin
Wyoming




Genuity® SmartStax® Corn

For sale and planting in the U.S. only.
This product may not be approved for planting in all states, counties or territories. Please contact the Monsanto Product Support hotline at 1-800-768-6387 Option #1 for additional information

Product Information

Licensing and Management Guidelines

IRM Grower Guide

IMPORTANT GROWER INFORMATION PLEASE READ BEFORE PLANTING

Growers must plant the following refuge:

5% OR 20%

SEE DETAILS ON IRM REQUIREMENTS IN IRM GROWER GUIDE SECTION OF THIS TAG.

genuity SMARTSTAX CORN SmartStax

The following states and counties are within the **Cotton-Growing Area.**
The orange circle structured refuge requirements apply to *B.t.* corn products grown in this area.

Alabama
Arkansas
Florida
Georgia
Louisiana
Mississippi
Missouri–***only*** *the counties of Dunklin, New Madrid, Pemiscot, Scott & Stoddard*
North Carolina
Oklahoma–***only*** *the counties of Beckham, Caddo, Comanche, Custer, Greer, Harmon, Jackson, Kay, Kiowa, Tillman & Washita*
South Carolina
Tennessee–***only*** *the counties of Carroll, Chester, Crockett, Dyer, Fayette, Franklin, Gibson, Hardeman, Hardin, Haywood, Lake, Lauderdale, Lincoln, Madison, Obion, Rutherford, Shelby & Tipton*
Texas–*all counties* ***except*** *Carson, Dallam, Hansford, Hartley, Hutchinson, Lipscomb, Moore, Ochiltree, Roberts & Sherman*
Virginia–***only*** *the counties of Dinwiddie, Franklin City, Greensville, Isle of Wight, Northampton, Southampton, Suffolk City, Surrey & Sussex*

Corn Refuge Requirements

Follow all pesticide label directions. See page 4 of this section for additional information.

Product	Corn-Growing Area Structured Refuge	Cotton-Growing Area Structured Refuge	Common or Single-Pest Configuration Options		
			Within	Adjacent	1/2 Mile
genuity SMARTSTAX CORN SmartStax	5%	20%	●	●	*

Under typical growing conditions for planted Genuity® SmartStax®, routine applications of insecticides to control pests are usually unnecessary. However, the refuge can be protected from lepidopteran damage by use of non-*B.t.* insecticides if the population of one or more target lepidopteran pests in the refuge exceeds economic thresholds.[1] The refuge can also be protected from corn rootworm damage by an appropriate seed treatment or soil insecticide; but insecticides labeled for adult corn rootworm control must be avoided in the refuge during the period of corn rootworm adult emergence. If insecticides are applied to the refuge for control of corn rootworm adults, the same treatment must also be applied in the same timeframe to Genuity SmartStax. Genuity SmartStax contains Roundup Ready® 2 Technology and LibertyLink® herbicide tolerance traits, but your refuge may or may not. Select an appropriate herbicide for your refuge before spraying the refuge, to avoid crop damage.

genuity SMARTSTAX CORN RIB COMPLETE	**NO** structured refuge required	Not recommended for the Cotton-Growing Area. If planted, an additional 20% structured refuge is required.	●	●	●

Cotton-Growing Area: The 20% structured refuge can be protected from lepidopteran damage by use of non-*B.t.* insecticides if the population of one or more target lepidopteran pests of Genuity® SmartStax® RIB Complete® corn blend in the refuge exceeds economic thresholds.[1] In addition, the 20% structured refuge can be protected from corn rootworm damage by an appropriate seed treatment or soil insecticide; however, insecticides labeled for adult corn rootworm control must be avoided in the refuge during the period of corn rootworm adult emergence.

genuity VT TRIPLE PRO CORN; genuity DROUGHTGARD HYBRIDS WITH VT TRIPLE PRO	20%	20%	●	●	

The refuge can be treated with a soil-applied or seed-applied insecticide to control rootworm larvae and other soil pests. The refuge can also be treated with a non-*B.t.* foliar-applied insecticide for control of late-season pests (i.e., corn borer), if pest pressure reaches an economic threshold for damage.[1] However, if rootworm adults are present at the time of foliar application, then the Genuity® VT Triple PRO® field must be treated in a similar manner.

genuity VT TRIPLE PRO CORN RIB COMPLETE; genuity DROUGHTGARD HYBRIDS WITH VT TRIPLE PRO RIB COMPLETE	**NO** structured refuge required	Not recommended for the Cotton-Growing Area. If planted, an additional 20% structured refuge is required.	●	●	

Cotton-Growing Area: The 20% structured refuge can be protected from lepidopteran damage by use of non-*B.t.* insecticides if the population of one or more target pests of Genuity® VT Triple PRO® RIB Complete® corn blend in the refuge exceeds economic thresholds.[1] In addition, refuge can be protected from corn rootworm damage by appropriate seed treatment or soil insecticide.

*1/2 mile option for Genuity SmartStax is only available to growers in the following states: AK, AL, AR, AZ, CA, CT, DE, FL, GA, HI, ID, LA, MA, MD, ME, MS, MT, NC, NH, NJ, NM, NV, NY, OR, PA, RI, SC, TN, UT, VA, VT, WA, WV, WY.

[1]Economic thresholds will be determined using methods recommended by local or regional professionals (e.g., extension service agents and crop consultants).

Corn Refuge Requirements

Follow all pesticide label directions. See page 4 of this section for additional information.

Product	Corn-Growing Area Structured Refuge	Cotton-Growing Area Structured Refuge	Common or Single-Pest Configuration Options		
			Within	Adjacent	1/2 Mile
genuity VT DOUBLE PRO CORN; genuity DROUGHTGARD HYBRIDS WITH VT DOUBLE PRO	5%	20%	●	●	●

The refuge can be treated with a non-*B.t.* foliar-applied insecticide for control of lepidopteran pests (i.e., corn borer), if pest pressure reaches an economic threshold for damage.[1] Sprayable *B.t.* insecticides must not be applied to the refuge corn.

Product	Corn-Growing Area Structured Refuge	Cotton-Growing Area Structured Refuge	Common or Single-Pest Configuration Options		
			Within	Adjacent	1/2 Mile
genuity VT DOUBLE PRO CORN RIB COMPLETE; genuity DROUGHTGARD HYBRIDS WITH VT DOUBLE PRO RIB COMPLETE	**NO** structured refuge required	Not recommended for the Cotton-Growing Area. If planted, an additional 20% structured refuge is required.	●	●	●

Cotton-Growing Area: The 20% structured refuge can be protected from lepidopteran damage by use of non-*B.t.* insecticides if the population of one or more target pests of Genuity® VT Double PRO® RIB Complete® corn blend in the refuge exceeds economic thresholds.[1] In addition, refuge can be protected from corn rootworm damage by appropriate seed treatment or soil insecticide.

Product	Corn-Growing Area Structured Refuge	Cotton-Growing Area Structured Refuge	Common or Single-Pest Configuration Options		
			Within	Adjacent	1/2 Mile
YieldGard Corn Borer; YieldGard Corn Borer; Roundup Ready CORN 2	20%	50%	●	●	●

The refuge can be treated with a non-*B.t.* foliar-applied insecticide for control of lepidopteran pests (i.e., corn borer), if pest pressure reaches an economic threshold for damage.[1] Sprayable *B.t.* insecticides must not be applied to the refuge corn.

Effective September 30, 2015, sales, distributions, and plantings of any existing stocks of seed containing the MON 810 Event, including YieldGard® Corn Borer and YieldGard Corn Borer with Roundup Ready® Corn 2 products, can only be planted by July 1, 2016, for production of a corn crop.

Therefore, unless EPA otherwise limits, any sale, distribution, or planting of existing stocks of seed containing the MON 810 Event is prohibited after July 1, 2016.[2] Growers who plant seed containing MON 810 Event will remain subject to IRM compliance and refuge requirements, and any remaining inventory of seed containing the MON 810 Event that has not been sold, distributed, or used by July 1, 2016, must be handled in accordance with legal and regulatory requirements (non-treated seed can be sold as grain, and treated seed must be disposed of properly).

[1] Economic thresholds will be determined using methods recommended by local or regional professionals (e.g., extension service agents and crop consultants).

[2] It is a violation of federal law to sell or distribute an unregistered pesticide.

Corn Refuge Requirements

Common and Single-Pest Structured Refuge Configuration Options

The graphic depictions of refuge configurations in this overview are offered merely as examples to growers and are not necessarily drawn to scale.

B.t. Technology

Non-*B.t.* Refuge
(i.e., Roundup Ready® Corn 2 or conventional corn)

Designates road, ditch, path, etc.

Sample configurations shown are for a 20% refuge

Corn Rootworm Recommendations

Monsanto has implemented a comprehensive program for corn rootworm, including a series of BMPs, to better assist growers on every field where growers reported unexpected damage. We encourage growers to follow recommended IPM practices, including cultural control tactics, scouting and the appropriate use of pest thresholds and sampling.

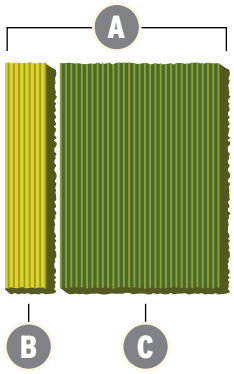
If you are not seeing high corn rootworm pressure in a field and you are planting a single mode of action product such as Genuity® VT Triple PRO®, we recommend updating your IPM program to include regular scouting to assess if the addition of an insecticide or other IPM practice is necessary.

These BMPs provide practical solutions to reduce rootworm populations, limit rootworm damage and enable insect resistance management. The BMPs are as follows:

- **Rotate Crops:** If you have a field that has been in continuous corn production, we recommend rotating to soybeans or other non-host crop, which breaks the corn rootworm cycle.
- **Build a Strong Defense:** If you are seeing increased pressure in a field you intend to plant back to corn in 2016, we recommend either planting dual mode of action Genuity® SmartStax® RIB Complete® corn blend or Genuity® SmartStax® corn to help manage and protect against insects.
- **Additional Control Tools:** If rotation of a dual mode of action product is not available for your specific geography, use a soil- or foliar-applied insecticide on any fields planted to single mode of action technology.

Remember, appropriate stewardship on these fields is necessary to preserve grower access to this technology.

How to Calculate a Structured Refuge



Refer to this diagram for the example below.

- **A** **Total Corn Acres***
- **B** **Refuge Acres**
- **C** ***B.t.* Acres**
- **%** **Percent of Required Refuge—** 20% 50%
  Based on total corn acres

*Includes all corn acres that are in field or adjacent to each other and will be allocated to the *B.t.* product and its associated refuge.

Example below is for a 20% refuge product.

START with the **TOTAL** number of corn acres you want to plant in an area. Multiply by the **PERCENT** of refuge required for the *B.t.* trait. This is your minimum **REFUGE ACRES.**

	A		%		B
Example	200	x	20%	=	40 ✓
Your Field		x		=	

Next, subtract your refuge acres from your total corn acres. This is your maximum ***B.t.* ACRES.**

	A		B		C
Example	200	-	40	=	160
Your Field		-		=	

As part of our commitment to enhancing grower productivity and profitability, growers can download a free Insect Resistance Management (IRM) corn refuge calculator at **www.irmcalculator.com.** Or scan this QR code to start planning today.

Cotton Technologies

Genuity® Bollgard II® with Roundup Ready® Flex Cotton varieties offer growers the benefits of both insect protection and glyphosate tolerance combined in one crop. These varieties exhibit the same insect protection qualities as Genuity® Bollgard II® and are tolerant to in-crop applications of Roundup WeatherMAX®, Roundup PowerMAX® and Roundup PowerMAX® II herbicides when used according to label directions.*

Genuity® Roundup Ready® Flex Cotton varieties possess improved tolerance to the active ingredient in Roundup® agricultural herbicides. This technology gives growers the opportunity to make in-crop broadcast applications of Roundup WeatherMAX, Roundup PowerMAX and Roundup PowerMAX II herbicides when used according to label directions.

Genuity® Bollgard II® Cotton varieties contain two distinct insecticidal proteins, Cry1Ac and Cry2Ab2, from *Bacillus thuringiensis (B.t.)* that increase the efficacy and spectrum of control and reduce the chance that resistance will develop to the *B.t.* insecticidal proteins. Genuity Bollgard II cotton controls tobacco budworm, pink bollworm and cotton bollworm. Genuity Bollgard II cotton also provides control against fall armyworm, beet armyworm, cabbage and soybean loopers and other secondary leaf- or fruit-feeding caterpillar pests of cotton. Applications of insecticides to control these pests are substantially reduced with Genuity Bollgard II.*

Bollgard II® XtendFlex® Cotton is the first triple-stacked herbicide trait in cotton. Built on Genuity® Bollgard II® with Roundup Ready®Flex technology, these varieties include insect protection combined with tolerance to dicamba**, glyphosate and glufosinate herbicides. Bollgard II® XtendFlex® Cotton varieties provide additional weed control options for use before, at and after planting.

XtendFlex® Cotton varieties include tolerance to dicamba**, glyphosate and glufosinate herbicides, providing additional weed control options for use before, at and after planting.

Acceleron® Seed Treatment Products deliver exclusive active ingredients that matter. For more information, talk to your local retailer.

Monsanto BioAg™ Products offer leading biological solutions for agriculture. For more information, talk to your local retailer or discover more at **monsantobioag.com.**

*If you are planting in an area requiring a structured refuge and did not receive a Genuity Bollgard II IRM Grower Guide or would like another, go to www.monsanto.com or www.genuity.com, or call 1-800-768-6387 to request a copy by mail.

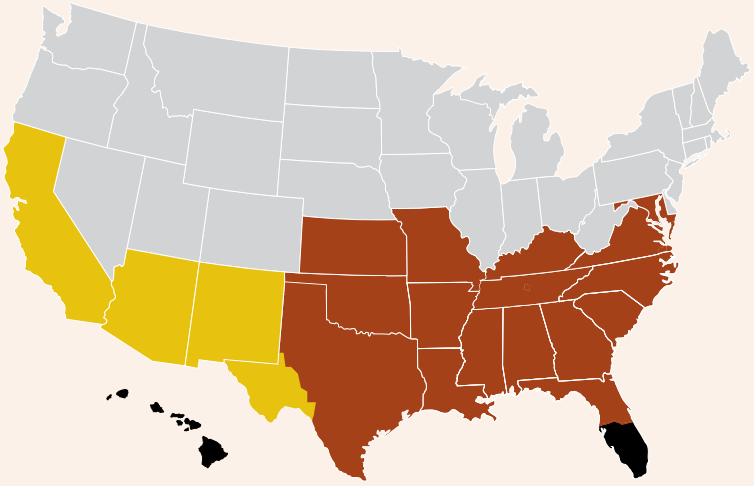
**As of October 1, 2015, no dicamba herbicide product has been approved for commercial in-crop use with Bollgard II® XtendFlex® or XtendFlex® cotton. DO NOT APPLY DICAMBA HERBICIDE IN-CROP TO BOLLGARD II® XTENDFLEX® or XTENDFLEX® COTTON IN 2016 unless you use a dicamba herbicide product that is specifically labeled for that use in the location where you intend to make the application. IT IS A VIOLATION OF FEDERAL AND STATE LAW TO MAKE AN IN-CROP APPLICATION OF ANY DICAMBA HERBICIDE PRODUCT ON BOLLGARD II® XTENDFLEX® or XTENDFLEX® COTTON UNLESS THE PRODUCT LABEL SPECIFICALLY AUTHORIZES THAT USE. Contact the U.S. EPA or your state pesticide regulatory agency with any questions about the approval status of dicamba herbicide products for IN-CROP USE WITH Bollgard II® XtendFlex® or XtendFlex® cotton.

Growers must read the Genuity Bollgard II IRM Grower Guide prior to planting for information on required IRM. You may download a copy of the current Guide at www.monsanto.com or www.genuity.com, or you may call 1-800-768-6387 to request a copy by mail.

The map below depicts areas of the U.S. where Genuity® Bollgard II® cotton can be grown. Also noted is the area where planted refuges are required.

Natural Refuge Area In the natural refuge area, cotton growers are not required to plant non-*B.t.* cotton as a refuge for Genuity® Bollgard II® cotton. Natural refuge refers to cultivated non-*B.t.* crops as well as plants other than cotton that serve as hosts of susceptible target pests. Monsanto, in conjunction with USDA and university researchers, demonstrated that numbers of tobacco budworm and cotton bollworm moths produced from non-*B.t.* hosts other than cotton within this area are sufficient for fulfilling refuge requirements.

Planted Refuge Required Area* In the planted refuge required area, growers must plant non-*B.t.* cotton that serves as a refuge for the tobacco budworm, cotton bollworm and/or pink bollworm moths. Options include an embedded, 5% external unsprayed or 20% external sprayed refuge. Confirm with local authorities (such as your state Department of Agriculture) if there are any county-specific exemptions from refuge requirements that may be allowed in accordance with state pink bollworm eradication programs. This may include counties in Arizona, New Mexico, California, and west Texas.



Natural Refuge

Alabama, Arkansas, Florida north of Route 60 (near Tampa), Georgia, Kansas, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Virginia, and Texas except for the counties of Brewster, Crane, Crockett, Culberson, El Paso, Hudspeth, Jeff Davis, Loving, Pecos, Presidio, Reeves, Terrell, Val Verde, Ward and Winkler.

Planted Refuge Required*

Includes all counties in Arizona, New Mexico, California, and the Texas counties of Brewster, Crane, Crockett, Culberson, El Paso, Hudspeth, Jeff Davis, Loving, Pecos, Presidio, Reeves, Terrell, Val Verde, Ward and Winkler.

Sale Prohibited—By Federal Registration

Sale or commercial planting of Genuity Bollgard II cotton is prohibited in Hawaii, Puerto Rico, the U.S. Virgin Islands, and in Florida south of Route 60 (near Tampa).

Sale Prohibited—No State Registration

Genuity Bollgard II cotton is not registered in the following states: Alaska, Colorado, Connecticut, Delaware, Idaho, Illinois, Indiana, Iowa, Maine, Massachusetts, Michigan, Minnesota, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New York, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Dakota, Utah, Vermont, Washington, Washington D.C., West Virginia, Wisconsin, and Wyoming. Therefore, sale or commercial planting of Genuity Bollgard II cotton is not allowed.

*If you are planting in an area requiring a structured refuge and did not receive a Genuity Bollgard II IRM Grower Guide or would like another, go to www.monsanto.com or www.genuity.com, or call 1-800-768-6387 to request a copy by mail.

Genuity® Bollgard II® with Roundup Ready® Flex Cotton
Genuity® Roundup Ready® Flex Cotton

Growers should follow recommended weed management guidelines when managing Genuity® Bollgard II® with Roundup Ready® Flex cotton and Genuity® Roundup Ready® Flex cotton. Growers of Genuity Bollgard II with Roundup Ready Flex cotton must follow the required refuge options, practicing IRM and managing target and non-target pests as described for Genuity® Bollgard II® cotton in the IRM Grower Guide.

Weed Management

Weed control in cotton is essential to help maximize both fiber yield and quality potential. Cotton is very sensitive to early-season weed competition, which can result in unacceptable stands and/or reduced yield potential. The Genuity Roundup Ready Flex cotton system, with improved tolerance to the active ingredient in Roundup® agricultural herbicides, provides growers with the right tools to control weeds.

Select timing of application based on the most difficult-to-control weed species in your field.

Post-direct or hooded sprayers can be used to achieve more thorough spray coverage on weeds, and can allow the use of other approved herbicides to control tough weeds.

Residual herbicide(s) may be applied as either a preemergence (including preplant incorporated), postemergence, and/or layby application as allowed on the label of the specific product being used. Weeds growing at the time of the residual herbicide application will need to be controlled using a postemergence herbicide.

Various weed biotypes are known to be resistant to glyphosate. For the current weed control recommendations for glyphosate-resistant weed biotypes, **refer to www.RoundupReadyPLUS.com or call 1-800-768-6387.** A complete list of specimen labels can be located at **http://www.monsanto.com/products/Pages/msds-labels.aspx.** Approved labels, including supplemental labeling, for Roundup agricultural herbicides must be in the possession of the user at the time of pesticide application and can be obtained by calling 1-800-768-6387 or by contacting your State Pesticide Lead Agency for more information.

Guidelines

Follow all label directions. Follow the guidelines below to minimize the risk of developing herbicide resistance in a Genuity Roundup Ready Flex cotton system:

- Scout fields before and after each burndown and in-crop application.
- Start with a clean field, using either a burndown herbicide application, residual herbicide or tillage, making sure weeds are controlled at planting.

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.

Cotton seed containing Monsanto traits may not be exported for the purpose of planting without a license from Monsanto.

Pima Cotton *(Gossypium barbadense)* Market Options

Do not export Genuity® Roundup Ready® Flex Pima cottonseed, meal, linters, or gin trash to Korea pending import approval. Grower must deliver cotton to an Arizona, California, New Mexico, or Texas gin that is on Monsanto's approved list (available at **www.genuity.com** under the Commodity Marketing section of the Stewardship tab).

Do not market cottonseed, meal, linters or gin trash from Genuity Roundup Ready Flex Pima to a third party who may send such products or processed fractions outside of the approved countries.

Genuity® Bollgard II® with Roundup Ready® Flex Cotton and Genuity® Roundup Ready® Flex Cotton

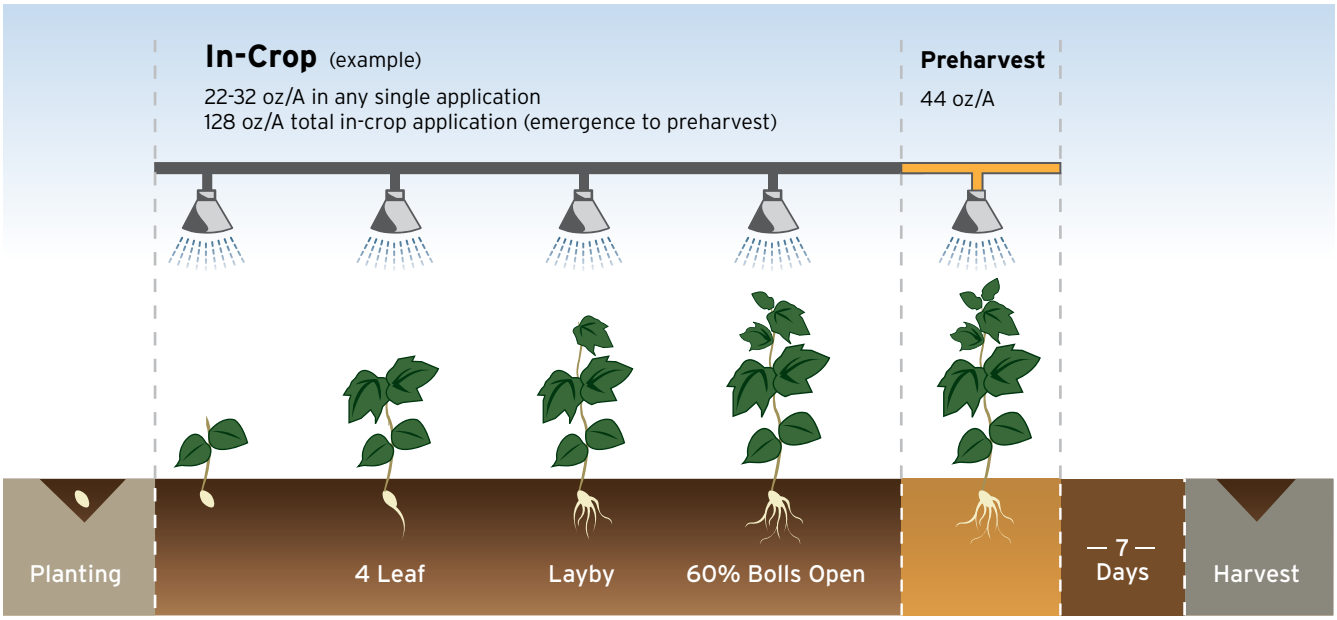
- Add soil residual herbicide(s) and cultural practices as part of a Genuity® Roundup Ready® Flex cotton weed control program.
  - Soil residual herbicides are critical to control emerging glyphosate-resistant weeds, such as Palmer amaranth.
  - Residual herbicides should be used multiple times during the growing season if glyphosate-resistant weeds are expected.
- In-crop, apply Roundup WeatherMAX® herbicide at a minimum of 22 oz/A when weeds are less than 3" in height and tank-mix with another approved herbicide, if necessary.
- Late-season control of emerged weeds with a diversity of control tools will reduce the potential of adding more seeds to the seedbank.
- Equipment should be cleaned before moving from field to field to minimize the spread of weed seed (as well as nematodes, insects and other cotton pests).
- Report any incidence of repeated non-performance of Roundup agricultural herbicides or other glyphosate products on a particular weed to the appropriate company representative, local retailer, or county extension agent.

Application of Roundup WeatherMAX®, Roundup PowerMAX® and Roundup PowerMAX® II Herbicides

- May be applied in-crop, from crop emergence up to 7 days prior to harvest.
- A maximum rate of 32 oz/A per application may be applied using ground application equipment while the maximum is 22 oz/A per application by air.
- There are no growth or timing restrictions for sequential applications.
- Four (4) quarts/A (128 oz/A) is the total in-crop volume allowed from emergence to 60% open bolls.
- A maximum total volume of 44 oz/A may be applied between layby and 60% open bolls.
- Post-directed application of Roundup WeatherMAX®, Roundup PowerMAX® or Roundup PowerMAX® II, either alone or in a tank-mix with another herbicide labeled for post-directed application in cotton, may be used to achieve more thorough spray coverage of weeds.

Preharvest Application

- Up to 44 oz/A may be applied after cotton reaches 60% open bolls and before harvest, if needed.
- Application must be made at least 7 days prior to harvest.
- The maximum volume of Roundup WeatherMAX, Roundup PowerMAX or Roundup PowerMAX II that may be used in a single season is 5.3 quarts/A (169.6 oz/A).



Crop Safety of In-Crop Glyphosate Applications

Monsanto has determined that a combination of components in glyphosate formulations have the potential to cause leaf injury when applied during later stages of crop growth. Roundup WeatherMAX, Roundup PowerMAX and Roundup PowerMAX II are the only Roundup® agricultural herbicides labeled and approved for use in Genuity® Roundup Ready® Flex cotton.

Leaf injury may occur if the products are not used according to the product label, used at rates higher than directed or if overlap of spray occurs in the field. Growers must confirm that any glyphosate formulation to be used on Genuity Roundup Ready Flex cotton is labeled for use on Genuity Roundup Ready Flex cotton and has been tested to demonstrate crop safety.

Bollgard II® XtendFlex® Cotton

XtendFlex® Cotton

Growers should follow recommended weed management guidelines when managing Bollgard II® XtendFlex® and XtendFlex® cotton. Growers of Bollgard II® XtendFlex® cotton must follow the required refuge options, practicing IRM and managing target and non-target pests as described for Genuity® Bollgard II® cotton in the Genuity Bollgard II IRM Grower Guide.

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. As of October 1, 2015, this product has been approved for import in Australia, Mexico, Japan and Canada. 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. Growers should refer to http://www.biotradestatus.com/ for any updated information on import country approvals.

NOTICE: As of October 1, 2015 no dicamba herbicide product has been approved for commercial in-crop use with Bollgard II® XtendFlex® or XtendFlex® cotton. DO NOT APPLY DICAMBA HERBICIDE IN-CROP TO BOLLGARD II® XTENDFLEX® or XTENDFLEX® COTTON IN 2016 unless you use a dicamba herbicide product that is specifically labeled for that use in the location where you intend to make the application. IT IS A VIOLATION OF FEDERAL AND STATE LAW TO MAKE AN IN-CROP APPLICATION OF ANY DICAMBA HERBICIDE PRODUCT ON BOLLGARD II® XTENDFLEX® or XTENDFLEX® COTTON UNLESS THE PRODUCT LABEL SPECIFICALLY AUTHORIZES THAT USE. Contact the U.S. EPA or your state pesticide regulatory agency with any questions about the approval status of dicamba herbicide products for IN-CROP USE WITH Bollgard II® XtendFlex® or XtendFlex® cotton.

Weed Management

Weed control in cotton is essential to help maximize both fiber yield and quality potential. Cotton is very sensitive to early-season weed competition, which can result in unacceptable stands and/or reduced yield potential. Bollgard II XtendFlex and XtendFlex cotton will provide additional weed control options for use before, at and after planting.

Select timing of application based on the most difficult-to-control weed species in your field.

Post-direct or hooded sprayers can be used to achieve more thorough spray coverage on weeds, and can allow the use of other approved herbicides to control tough weeds.

Residual herbicide(s) may be applied as either a preemergence (including preplant incorporated), postemergence, and/or layby application as allowed on the label of the specific product being used. Weeds growing at the time of the residual herbicide application will need to be controlled using a postemergence herbicide.

Various weed biotypes are known to be resistant to glyphosate. For the current weed control recommendations for glyphosate-resistant weed biotypes, refer to **RoundupReadyPLUS.com** or call 1-800-768-6387. A complete list of specimen labels can be located at **monsanto.com/products/Pages/msds-labels.aspx.** Approved labels, including supplemental labeling, for Roundup® agricultural herbicides must be in the possession of the user at the time of pesticide application and can be obtained by calling 1-800-768-6387 or by contacting your State Pesticide Lead Agency for more information.

Guidelines

Follow all label directions. If there is no conflict between label directions, follow the guidelines below to minimize the risk of developing herbicide resistance in Bollgard II XtendFlex and XtendFlex cotton:

- Scout fields before and after each burndown and in-crop application.
- Start with a clean field, using either a burndown herbicide application, residual herbicide or tillage, making sure weeds are controlled at planting.
- Add soil residual herbicide(s) and cultural practices as part of a Bollgard II XtendFlex and XtendFlex cotton weed control program.
  - Soil residual herbicides are critical to control emerging glyphosate-resistant weeds, such as Palmer amaranth.
  - Residual herbicides should be used multiple times during the growing season if glyphosate-resistant weeds are expected.
- In-crop, apply Roundup WeatherMAX® herbicide at a minimum of 22 oz/A when weeds are less than 3" in height and tank-mix with another approved herbicide, if necessary.
- When glyphosate-resistant weeds are present and emerged, an application of Liberty® herbicide @ 29 to 44 oz/A should be applied to weeds 3" or less. (Please refer to Liberty label.)
- Late-season control of emerged weeds with a diversity of control tools will reduce the potential of adding more seeds to the seedbank.
- Equipment should be cleaned before moving from field to field to minimize the spread of weed seed (as well as nematodes, insects and other cotton pests).
- Report any incidence of repeated non-performance of Roundup agricultural herbicides or other glyphosate or glufosinate products on a particular weed to the appropriate company representative, local retailer, or county extension agent.

Herbicide Applications for Bollgard II® XtendFlex® Cotton and XtendFlex® Cotton

Roundup WeatherMAX®, Roundup PowerMAX® and Roundup PowerMAX® II Herbicides

- May be applied in-crop, from crop emergence up to 7 days prior to harvest.
- A maximum rate of 32 oz/A per application may be applied using ground application equipment while the maximum is 22 oz/A per application by air.
- There are no growth or timing restrictions for sequential applications.
- Four (4) quarts/A (128 oz/A) is the total in-crop volume allowed from emergence to 60% open bolls.
- A maximum total volume of 44 oz/A may be applied between layby and 60% open bolls.
- Post-directed application of Roundup WeatherMAX, Roundup PowerMAX or Roundup PowerMAX II, either alone or in a tank-mix with another herbicide labeled for post-directed application in cotton, may be used to achieve more thorough spray coverage of weeds.

Preharvest Application

- Up to 44 oz/A may be applied after cotton reaches 60% open bolls and before harvest, if needed.
- Application must be made at least 7 days prior to harvest.
- The maximum volume of Roundup WeatherMAX, Roundup PowerMAX or Roundup PowerMAX II that may be used in a single season is 5.3 quarts/A (169.6 oz/A).

Liberty® Herbicide

- Apply from emergence to early bloom growth stage.
- Sequential applications should be applied at least 10 days after the first application.
- Up to 87 oz/A of Liberty® can be applied on cotton per growing season or up to 72 oz/A if more than 29 oz/A was used in a single application. See Liberty label for guidelines on maximum seasonal use rates.
- A tank-mix of Liberty and a Roundup® agricultural herbicide may result in reduced grass control.
- Do not apply within 70 days of harvest.
- Consult product label for full use directions and restrictions.

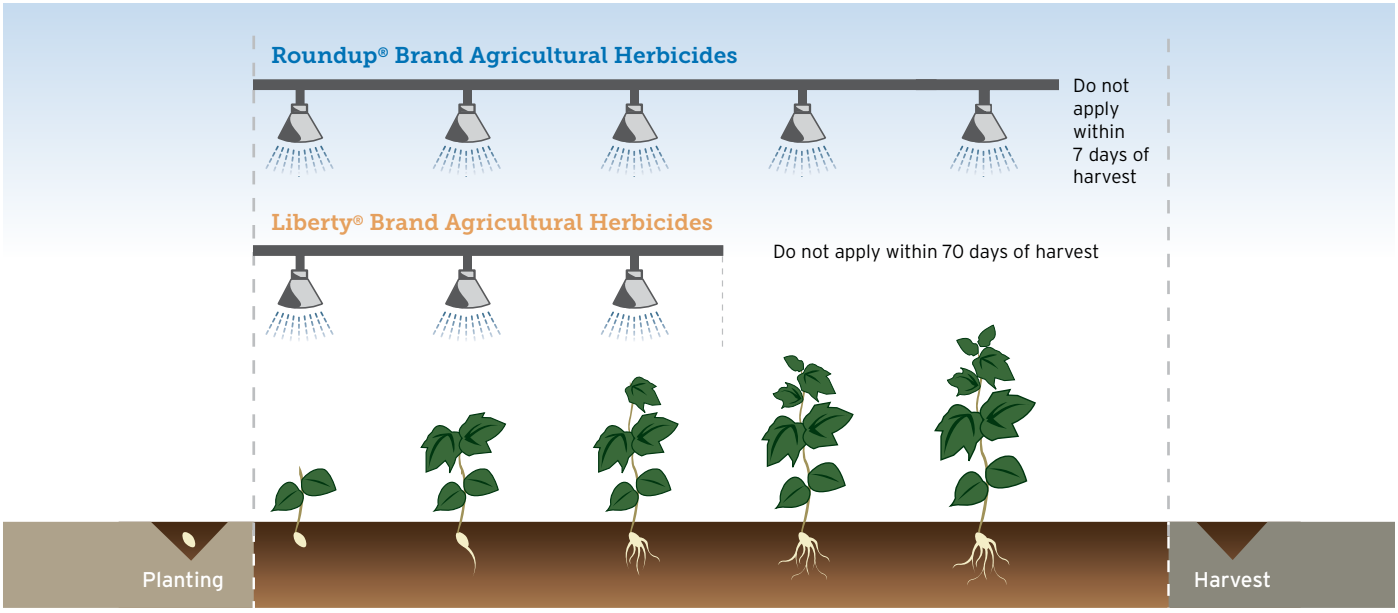
Crop Safety of In-Crop Glyphosate Applications

Monsanto has determined that a combination of components in glyphosate formulations have the potential to cause leaf injury when applied during later stages of crop growth. Roundup WeatherMAX, Roundup PowerMAX and Roundup PowerMAX II are the only Roundup agricultural herbicides labeled and approved for use in Bollgard II XtendFlex and XtendFlex cotton.

Leaf injury may occur if the products are not used according to the product label, used at rates higher than directed or if overlap of spray occurs in the field. Growers must confirm that any glyphosate formulation to be used on Bollgard II XtendFlex and XtendFlex cotton is labeled for use on Bollgard II XtendFlex and XtendFlex cotton and has been tested to demonstrate crop safety.

Complete label information for these and all recommended products can be found at **www.cdms.net.**

Herbicide Application Windows



Genuity® Roundup Ready 2 Yield® Soybeans

Genuity® Roundup Ready 2 Yield® Soybeans contain in-plant tolerance to the active ingredient in Roundup® agricultural herbicides, so you can spray with Roundup WeatherMAX®, Roundup PowerMAX® or Roundup PowerMAX® II herbicides in-crop from emergence through flowering.

Acceleron® Seed Treatment Products deliver exclusive active ingredients that matter. For more information talk to your local retailer.

Weed Management

Starting clean with a weed-free field and controlling subsequent weeds when they are small are critical to obtaining excellent weed control and maximum yield potential. The Roundup Ready Soybean System provides the flexibility to use the diversity of herbicide tools necessary to control weeds before planting, at planting and in-crop. Failure to control weeds with the right rate, at the right time and with the right product, can lead to increased weed competition, the potential for selecting for herbicide resistance and possible decreased yield.

Spray labeled Roundup agricultural herbicides in-crop from emergence (cracking) through flowering (R2 stage soybeans) for unsurpassed weed control, proven crop safety and maximum yield potential. R2 stage soybeans end when a pod 5 millimeters (3/16") long at one of the four uppermost nodes appears on the main stem along with a fully developed leaf (R3 stage).

Guidelines

Follow all pesticide label directions. Follow the guidelines below to help minimize the risk of developing glyphosate-resistant weed populations in a Roundup Ready Soybean System:

- Scout fields before and after each burndown and in-crop application.
- Start with a clean field, using either a burndown herbicide application, residual herbicide or tillage, making sure weeds are controlled at planting.
- Include a soil-applied residual herbicide such as Valor®, Valor® XLT, Gangster® or Authority® brand of products, applied at an appropriate rate as listed on the label.
- In-crop, apply Roundup WeatherMAX® herbicide at a minimum of 22 oz/A before weeds exceed 4" in height. Warrant® Herbicide may be applied postemergence to soybeans, but prior to weed emergence for residual control of small grasses and small-seeded broadleaf weeds.
- If an additional flush of weeds occurs, a sequential application of Roundup WeatherMAX at 22 oz/A before weeds exceed 4" in height may be needed.
- If using another approved glyphosate agricultural herbicide, you must refer to the label booklet or supplemental labeling for the use of that product on Genuity Roundup Ready 2 Yield Soybeans to determine appropriate use rates.
- If using Roundup PowerMAX® or Roundup PowerMAX® II, application rates are the same as for Roundup WeatherMAX.
- Refer to individual product labels for approved tank-mix partners.
- Equipment should be cleaned before moving from field to field to help minimize the spread of weed seed.
- Report any incidence of repeated non-performance of Roundup agricultural herbicides or other glyphosate products on a particular weed to the appropriate company representative, local retailer, or county extension agent.

Additional Information

Weeds such as lambsquarters, waterhemp, pigweed, and giant ragweed tend to emerge throughout the season. Sequential Roundup WeatherMAX applications or the addition of a soil residual herbicide may be required for control of subsequent weed flushes.

Various weed biotypes are known to be resistant to glyphosate. For the current weed control recommendations for glyphosate-resistant weed biotypes, **refer to www.RoundupReadyPLUS.com or call 1-800-768-6387.** A complete list of specimen labels can be located at **http://www.monsanto.com/products/Pages/msds-labels.aspx.** Approved labels, including supplemental labeling, for Roundup agricultural herbicides must be in the possession of the user at the time of pesticide application and can be obtained by calling 1-800-768-6387 or by contacting your State Pesticide Lead Agency for more information.

Monsanto BioAg™ Products offer leading biological solutions for agriculture. For more information, talk to your local retailer or discover more at monsantobioag.com.

Genuity® Roundup Ready® Alfalfa

Genuity® Roundup Ready® Alfalfa products have in-plant tolerance to the active ingredient in Roundup® agricultural herbicides, enabling growers to apply Roundup agricultural herbicides up to 5 days before cutting for unsurpassed weed control with excellent crop safety and improved forage quality potential.

Planting Limitation

Genuity Roundup Ready Alfalfa is not permitted to be planted in any wildlife feed plots. Genuity Roundup Ready Alfalfa may not be planted for the production of sprouts.

Fly-on planting: Growers that choose to fly-on Genuity Roundup Ready Alfalfa seed must control any resulting feral alfalfa.

Hay and Forage Management

Genuity Roundup Ready Alfalfa must be managed for high quality hay/forage production, including timely cutting to promote high forage quality (i.e., generally before 10% bloom) and to prevent seed development.

- In areas where conventional alfalfa seed production or adventitious presence (AP) sensitive seed production is intermingled with forage production, Genuity Roundup Ready Alfalfa must be harvested at or before 10% bloom to help minimize potential pollen flow from Genuity Roundup Ready Alfalfa to conventional alfalfa, and grower is responsible to control any feral alfalfa resulting from Genuity Roundup Ready Alfalfa use.
- In all other areas Genuity Roundup Ready Alfalfa must be harvested no later than 50% bloom.

Growers who are unwilling to or who cannot make these commitments to stewardship should not grow Genuity Roundup Ready Alfalfa.

An in-crop weed control program using Roundup WeatherMAX®, Roundup PowerMAX® or Roundup PowerMAX® II herbicide can provide excellent weed control in most situations. A residual herbicide labeled for use in alfalfa may also be applied postemergence in alfalfa. Contact a Monsanto Representative, local crop advisor or extension specialist to determine the best option for your situation.

Alfalfa In-Crop Rotation

Avoid planting alfalfa in a field from which an alfalfa crop has recently been removed. Recommended rotational crop sequences fall into two categories — grass crops (e.g., corn and cereal crops) and broadleaf crops.

Crop Product Export

Grower must lawfully plant Genuity Roundup Ready Alfalfa, direct any product produced from Genuity Roundup Ready Alfalfa seed or crops (including hay and hay products) only to those countries where regulatory approvals have been granted, and grow and manage Genuity Roundup Ready Alfalfa in accordance with the information found in this TUG. Pending import approvals in China, do not export Genuity Roundup Ready Alfalfa seed or crops (including hay and hay products) to China. In addition, due to the unique cropping practices do not plant Genuity Roundup Ready Alfalfa in Imperial County, California, pending import approval in China and until Monsanto grants expressed permission for such planting. It is a violation of national and international laws to move material containing biotech traits across boundaries into nations where import is not permitted.

For more information and the latest updates on Genuity Roundup Ready Alfalfa, go to the specialty tab at **www.genuity.com.**

Genuity Roundup Ready Alfalfa Stand Takeout

Use appropriate, commercially available herbicide treatments in reduced tillage systems, or in combination with tillage, to terminate a Genuity Roundup Ready Alfalfa stand.

If necessary, use tillage and/or additional herbicide application(s) after stand takeout, and prior to planting of the subsequent rotational crop to manage any newly-emerged or surviving alfalfa.

Note: Roundup agricultural herbicides are **not** effective for terminating Genuity Roundup Ready Alfalfa stands.

Management of Genuity® Roundup Ready® Alfalfa Volunteers in Rotational Crop Fields

In a timely manner, use recommended and commercially available mechanical and/or herbicidal methods for managing volunteer Genuity® Roundup Ready® Alfalfa in rotational crop fields.

- Implement treatments before volunteers become too large to control or begin to compete with the rotational crop.
- Herbicide alternatives are available for management of volunteer alfalfa in grass crops.
- Rotation with certain broadleaf crops is not advisable if the grower is not willing to implement recommended stand termination practices.
- In the event that no known mechanical or herbicidal options are available to manage volunteer Genuity Roundup Ready Alfalfa in the desired rotational crop, you should change to a crop with established volunteer management practices for that rotation.

Note: Roundup agricultural herbicides are **not** effective for terminating Genuity Roundup Ready Alfalfa volunteers.

Stewardship

All Genuity Roundup Ready Alfalfa growers are required to sign the Monsanto Technology/Stewardship Agreement (MTSA) limited-use license which provides the terms and conditions for the authorized use of the product. The MTSA must be signed and approved before purchase or use of seed.

The MTSA explicitly prohibits all forms of commercial seed harvest on the stand. Every grower of Genuity Roundup Ready Alfalfa agrees to only lawfully plant Genuity Roundup Ready Alfalfa, and not to plant Genuity Roundup Ready Alfalfa for the production of seed, unless under specific contract to produce seed.

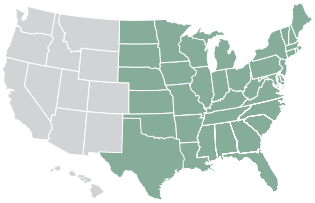
Note: See Weed Management Guidelines in Alfalfa, page 5 of this section.

HarvXtra™ Alfalfa with Roundup Ready® Technology

HarvXtra™ Alfalfa with Roundup Ready® Technology products contain the biotechnology-derived trait developed to maximize alfalfa quality compared to commercially available alfalfa harvested at the same growth stage, by reducing the amount of lignin in the plant. This technology is designed to ease the yield versus quality trade-off currently faced by alfalfa producers by enabling them to maintain high-quality alfalfa longer. These products also have the same in-plant tolerance to glyphosate as Genuity® Roundup Ready® Alfalfa, which enables growers to apply Roundup agricultural herbicides up to 5 days before cutting for unsurpassed weed control with excellent crop safety.

Planting Limitation

HarvXtra Alfalfa with Roundup Ready Technology is only for sale and planting in the following states in 2016: Alabama, Arkansas, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Vermont, Virginia, West Virginia and Wisconsin.



HarvXtra Alfalfa with Roundup Ready Technology is not permitted to be planted in any wildlife feed plots. HarvXtra Alfalfa with Roundup Ready Technology may not be planted for the production of sprouts.

Fly-on planting: Growers that choose to fly-on HarvXtra Alfalfa with Roundup Ready Technology seed must control any resulting feral alfalfa.

Hay and Forage Management

HarvXtra Alfalfa with Roundup Ready Technology gives growers the options for managing for high quality hay/forage production, including timely cutting to promote high forage quality (i.e., generally before 10% bloom) or slightly delay harvest for higher tonnage without sacrificing acceptable forage quality, while still preventing seed.

- In areas where conventional alfalfa seed production or adventitious presence (AP) sensitive seed production is intermingled with forage production, HarvXtra Alfalfa with Roundup Ready Technology must be harvested at or before 10% bloom to help minimize potential pollen flow from HarvXtra Alfalfa with Roundup Ready Technology to conventional alfalfa, and grower is responsible to control any feral alfalfa resulting from HarvXtra Alfalfa with Roundup Ready Technology use.
- In all other areas HarvXtra Alfalfa with Roundup Ready Technology must be harvested at no later than 50% bloom.

Stewarded Introduction for HarvXtra™ Alfalfa with Roundup Ready® Technology

For the 2016 growing season, this product is available for planting in a limited geography and growers must direct any product produced from HarvXtra Alfalfa with Roundup Ready Technology seed or crops (including hay and hay products) only to US domestic use. 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 product purchaser to confirm their buying position for this product.

Growers who are unwilling to or who cannot make these commitments to stewardship should not grow HarvXtra Alfalfa with Roundup Ready Technology.

An in-crop weed control program using Roundup WeatherMAX®, Roundup PowerMAX® or Roundup PowerMAX® II herbicide can provide excellent weed control in most situations. A residual herbicide labeled for use in alfalfa may also be applied postemergence in alfalfa. Contact a Monsanto Representative, local crop advisor or extension specialist to determine the best option for your situation.

Alfalfa In-Crop Rotation

Avoid planting alfalfa in a field from which an alfalfa crop has recently been removed. Recommended rotational crop sequences fall into two categories — grass crops (e.g., corn and cereal crops) and broadleaf crops.

HarvXtra™ Alfalfa with Roundup Ready® Technology Stand Takeout

Use appropriate, commercially available herbicide treatments in reduced tillage systems, or in combination with tillage, to terminate a HarvXtra™ Alfalfa with Roundup Ready® Technology stand.

If necessary, use tillage and/or additional herbicide application(s) after stand takeout, and prior to planting of the subsequent rotational crop to manage any newly-emerged or surviving alfalfa.

Note: Roundup® agricultural herbicides are **not** effective for terminating HarvXtra Alfalfa with Roundup Ready Technology stands.

Management of HarvXtra™ Alfalfa with Roundup Ready® Technology Volunteers in Rotational Crop Fields

In a timely manner, use recommended and commercially available mechanical and/or herbicidal methods for managing volunteer HarvXtra Alfalfa with Roundup Ready Technology in rotational crop fields.

- Implement treatments before volunteers become too large to control or begin to compete with the rotational crop.
- Herbicide alternatives are available for management of volunteer alfalfa in grass crops.
- Rotation with certain broadleaf crops is not advisable if the grower is not willing to implement recommended stand termination practices.
- In the event that no known mechanical or herbicidal options are available to manage volunteer HarvXtra Alfalfa with Roundup Ready Technology in the desired rotational crop, you should change to a crop with established volunteer management practices for that rotation.

Note: Roundup agricultural herbicides are **not** effective for terminating HarvXtra Alfalfa with Roundup Ready Technology volunteers.

Stewardship

All HarvXtra Alfalfa with Roundup Ready Technology growers are required to sign the Monsanto Technology/Stewardship Agreement (MTSA) limited-use license which provides the terms and conditions for the authorized use of the product. The MTSA must be signed and approved before purchase or use of seed.

The MTSA explicitly prohibits all forms of commercial seed harvest on the stand. Every grower of HarvXtra Alfalfa with Roundup Ready Technology agrees to only lawfully plant HarvXtra Alfalfa with Roundup Ready Technology, and not to plant HarvXtra Alfalfa with Roundup Ready Technology for the production of seed, unless under specific contract to produce seed.

For more information and the latest updates on HarvXtra Alfalfa with Roundup Ready Technology, go to the specialty tab at **www.harvxtra.com.**

Weed Management Guidelines

for Genuity® Roundup Ready® Alfalfa and HarvXtra™ Alfalfa with Roundup Ready® Technology

Guidelines

Follow all pesticide label requirements. Follow the guidelines below to help minimize the risk of developing glyphosate-resistant weed populations in HarvXtra™ Alfalfa with Roundup Ready® Technology:

- Scout fields before and after each herbicide application.
- To help control flushes of weeds in established alfalfa, make applications of Roundup WeatherMAX®, Roundup PowerMAX® or Roundup PowerMAX® II herbicide \at 22 to 44 oz/A before weeds exceed 4" in height, up to 5 days \before cutting.
- Use other approved herbicide products tank-mixed or in sequence with Roundup® agricultural herbicides as part of a HarvXtra™ Alfalfa with Roundup Ready® Technology weed control program, if appropriate for the weed spectrum present.
- Report any incidence of repeated non-performance of Roundup agricultural herbicides or other glyphosate products on a particular weed to the appropriate company representative, local retailer, or county extension agent.

To preserve the quality potential of forage and hay in established stands, apply Roundup WeatherMAX after weeds have emerged but before alfalfa re-growth interferes with application spray coverage of the target weeds.

Additional Recommendation

It has been reported that some growers of Genuity® Roundup Ready® Alfalfa may have a limited, temporary crop response where glyphosate application is closely followed by freezing or near-freezing conditions, or by large temperature swings. Monsanto is actively investigating this situation.

Because glyphosate based herbicides are most effective in controlling actively growing weeds, application in these conditions is not recommended.

If freezing or near-freezing temperatures, or large temperature swings, are forecasted within 5 days after a planned glyphosate application to your Genuity Roundup Ready Alfalfa and/or HarvXtra Alfalfa with Roundup Ready Technology, you should delay the application until those conditions are no longer forecasted.

Additional Information

- Always start with a weed-free field. In no-till and reduced-till systems, apply a Roundup WeatherMAX burndown application to control existing weeds at least 1 to 2 weeks before planting.
- An initial application of 22 to 44 oz/A of Roundup WeatherMAX should be applied at or before the 3 to 4 trifoliate growth stage.

  Note: *Due to the genetic diversity of alfalfa, up to 10% of the seedlings are susceptible and will not survive the first application of Roundup agricultural herbicides. The initial application is necessary to eliminate the effects of stand gaps created by loss of plants that are not Roundup Ready and to ensure adequate spray coverage of emerging weeds before crop canopy interference.*
- Applications between cuttings may be applied as a single application or in multiple applications (e.g., two applications of 22 oz/A). Sequential applications should be at least 7 days apart.
- If using another approved glyphosate agricultural herbicide, you must refer to the label booklet or supplemental labeling for the use of that product on HarvXtra™ Alfalfa with Roundup Ready® Technology to determine appropriate use rates.
- Maximum use rates apply to the total amount applied of all glyphosate-containing products. See the Roundup WeatherMAX label for more information on maximum use rates.
- If using Roundup PowerMAX or Roundup PowerMAX II, application rates are the same as for Roundup WeatherMAX.
- In addition to those weeds listed in the Roundup WeatherMAX label booklets, this product can suppress or control the parasitic weed, dodder *(Cuscuta spp.)* in HarvXtra™ Alfalfa with Roundup Ready® Technology. Repeat applications might be necessary for complete control.
- For tough-to-control weeds or weeds not controlled by Roundup agricultural herbicides, use labeled rates of other approved herbicides, alone or in tank-mixtures, with Roundup agricultural herbicides.

Various weed biotypes are known to be resistant to glyphosate. For the current weed control recommendations for glyphosate-resistant weed biotypes, **refer to www.RoundupReadyPLUS.com or call 1-800-768-6387.** A complete list of specimen labels can be located at **http://www.monsanto.com/products/Pages/msds-labels.aspx.** Approved labels, including supplemental labeling, for Roundup agricultural herbicides must be in the possession of the user at the time of pesticide application and can be obtained by calling 1-800-768-6387 or by contacting your State Pesticide Lead Agency for more information.

Genuity® Roundup Ready® Spring Canola

Genuity® Roundup Ready® Spring Canola products contain in-plant tolerance to the active ingredient in Roundup® agricultural herbicides, so you can spray Genuity Roundup Ready Spring Canola with Roundup agricultural herbicides in-crop from emergence through the 6-leaf stage of development.

The introduction of the Roundup Ready® trait into leading spring canola brands and varieties gives growers the opportunity for unsurpassed weed control, proven crop safety and maximum yield potential. With Genuity Roundup Ready Spring Canola, growers have the weed management tool necessary to help improve spring canola profitability, while providing a viable rotational crop to help break pest and disease cycles in cereal-growing areas.

Acceleron® Seed Treatment Products deliver exclusive active ingredients that matter. For more information talk to your local retailer.

ACCELERON DISEASE Canola Seed Treatment Products

Planting Limitation

Genuity Roundup Ready Spring Canola is not permitted to be planted in any wildlife feed plots.

Weed Management

Guidelines

Follow all pesticide label directions. Follow the guidelines below to minimize the risk of developing glyphosate-resistant weed populations in a Genuity Roundup Ready Spring Canola System:

- Scout fields before and after each burndown and in-crop application.
- Start with a clean field, using either a burndown herbicide application, residual herbicide or tillage, making sure weeds are controlled at planting.
- In-crop, apply Roundup WeatherMAX® herbicide before weeds exceed 3" in height.
- A sequential application of Roundup WeatherMAX herbicide may be needed.
- Use mechanical weed control, cultivation and/or residual herbicides where appropriate in your Genuity Roundup Ready Spring Canola.
- Use additional herbicide mechanisms of action, residual herbicides and/or mechanical weed control in other Roundup Ready crops rotated with Genuity Roundup Ready Spring Canola.
- Equipment should be cleaned before moving from field to field to help minimize the spread of weed seed.
- There are several options for control of volunteer Genuity Roundup Ready Spring Canola in rotational crops, including Roundup Ready Soybeans and Genuity Roundup Ready Sugarbeets. Talk to your local seed representative or dealer for suggestions that fit your area.
- Report any incidence of repeated non-performance of Roundup agricultural herbicides or other glyphosate products on a particular weed to the appropriate company representative, local retailer, or county extension agent.

Additional Information

- Spray when canola is at the 0- to 6-leaf stage of growth. To help maximize yield potential, spray Genuity Roundup Ready Spring Canola at the 1- to 3-leaf stage to eliminate competing weeds. Short-term yellowing may occur with later applications, with little effect on crop growth, maturity, or yield.
- Wait a minimum of 10 days between applications. Two applications of Roundup WeatherMAX can:
  - Control late flushes of annual weeds such as foxtail, pigweed, and wild mustard.
  - Provide season-long suppression of Canada thistle, quackgrass, and perennial sow thistle.
  - Provide better yield potential by eliminating competition from both annuals and hard-to-control perennials.
- If using another approved glyphosate agricultural herbicide, you must refer to the label booklet or supplemental labeling for the use of that product on Genuity Roundup Ready Spring Canola for appropriate use rates.
- If using Roundup PowerMAX® or Roundup PowerMAX® II, application rates are the same as for Roundup WeatherMAX.
- Maximum use rates apply to the total amount applied of all glyphosate-containing products. See the Roundup WeatherMAX label for more information on maximum use rates.

Various weed biotypes are known to be resistant to glyphosate. For the current weed control recommendations for glyphosate-resistant weed biotypes, **refer to www.RoundupReadyPLUS.com or call 1-800-768-6387.** Approved supplemental labeling for Monsanto herbicide products can be obtained by calling 1-800-768-6387. A complete list of specimen labels can be located at **http://www.monsanto.com/products/Pages/msds-labels.aspx.** Approved labels, including supplemental labeling, for Roundup agricultural herbicides must be in the possession of the user at the time of pesticide application and can be obtained by calling 1-800-768-6387 or by contacting your State Pesticide Lead Agency for more information.

Genuity® Roundup Ready® Winter Canola

Genuity® Roundup Ready® Winter Canola products have been developed for seeding in the fall and harvesting the following spring/summer. Genuity Roundup Ready Winter Canola brands and varieties contain in-plant tolerance to the active ingredient in Roundup® agricultural herbicides, so you can spray Genuity Roundup Ready Winter Canola with Roundup agricultural herbicides in-crop from emergence to the pre-bolting stage.

The introduction of the Roundup Ready® trait into winter canola products gives growers the opportunity of unsurpassed weed control, crop safety and maximum yield potential. Genuity Roundup Ready Winter Canola offers growers an important option as a rotational crop in traditional monoculture winter wheat production areas. Introducing crop rotation is an important factor in reducing pest cycles, including weed and disease problems.

Grazing

Monsanto recommends that Genuity Roundup Ready Winter Canola not be grazed. While Genuity Roundup Ready Winter Canola may in the future provide growers additional opportunity as a forage for grazing livestock, at the present time insufficient information exists to allow safe and proper grazing recommendations. Preliminary data suggest that excessive grazing can significantly reduce yield, *and that careful nitrate management is critical in managing Genuity Roundup Ready Winter Canola as a forage to limit the risk of livestock nitrate poisoning.* State universities are assessing that potential and the appropriate instructions for grazing Genuity Roundup Ready Winter Canola. They will provide grazing management guidelines when their research is completed.

Acceleron® Seed Treatment Products deliver exclusive active ingredients that matter. For more information talk to your local retailer.

Planting Limitation

Genuity Roundup Ready Winter Canola is not permitted to be planted in any wildlife feed plots.

Weed Management

Guidelines

Follow all pesticide label directions. Follow the guidelines below to minimize the risk of developing glyphosate-resistant weed populations in a Genuity Roundup Ready Winter Canola System:

- Scout fields before and after each burndown and in-crop application.
- Start with a clean field, using either a burndown herbicide, residual herbicide or tillage, making sure weeds are controlled at planting.
- In-crop, apply Roundup WeatherMAX® herbicide before weeds exceed 3" in height.
- A sequential application of Roundup WeatherMAX herbicide may be needed.
- Use mechanical weed control, cultivation and/or residual herbicides where appropriate in your Genuity Roundup Ready Winter Canola.
- Use additional herbicide mechanisms of action, residual herbicides and/or mechanical weed control in other Roundup Ready crops you rotate with Genuity Roundup Ready Winter Canola.
- Equipment should be cleaned before moving from field to field to minimize the spread of weed seed.
- There are several options for control of volunteer Genuity Roundup Ready Winter Canola in rotational crops. Talk to your local seed representative or dealer for suggestions that fit your area.
- Report any incidence of repeated non-performance of Roundup agricultural herbicides or other glyphosate products on a particular weed to the appropriate company representative, local retailer, or county extension agent.

Additional Information

- Spray when Genuity Roundup Ready Winter Canola is at the 2–3 leaf stage of growth. Early applications can eliminate competing weeds and improve yield potential.
- Two applications of Roundup WeatherMAX can provide control of early emerging annual weeds and winter emerging weeds such as downy brome, cheat and jointed goatgrass.
- For sequential applications, spray Genuity Roundup Ready Winter Canola at the 2–3 leaf stage and when weeds are small and actively growing. Applications must be made prior to bolting. Use the higher rate in the range when weed densities are high, when weeds have over wintered or when weeds become large and well established.
- Application of greater than 16 oz/A prior to the 6-leaf stage could result in temporary yellowing and/or growth reduction.
- If using another approved glyphosate agricultural herbicide, you must refer to the label booklet or supplemental labeling for the use of that product on Genuity Roundup Ready Winter Canola for appropriate use rates.
- If using Roundup PowerMAX® or Roundup PowerMAX® II, application rates are the same as for Roundup WeatherMAX.
- Maximum use rates apply to the total amount applied of all glyphosate-containing products. See the Roundup WeatherMAX label for more information on maximum use rates.

Various weed biotypes are known to be resistant to glyphosate. For the current weed control recommendations for glyphosate-resistant weed biotypes, **refer to www.RoundupReadyPLUS.com or call 1-800-768-6387.** A complete list of specimen labels can be located at **http://www.monsanto.com/products/Pages/msds-labels.aspx.** Approved labels, including supplemental labeling, for Roundup agricultural herbicides must be in the possession of the user at the time of pesticide application and can be obtained by calling 1-800-768-6387 or by contacting your State Pesticide Lead Agency for more information.

Genuity® Roundup Ready® Sugarbeets

Genuity® Roundup Ready® Sugarbeet products have in-plant tolerance to the active ingredient in Roundup® agricultural herbicides, enabling growers to apply labeled Roundup agricultural herbicides from planting through 30 days prior to harvest for unsurpassed weed control, with excellent crop safety and preservation of yield potential.

Agronomic Principles in Sugarbeets

Genuity Roundup Ready Sugarbeets provide a mechanism to control weeds at planting, and after emergence of the crop.

Planting Limitation

Genuity Roundup Ready Sugarbeets are not permitted to be planted in any wildlife feed plots.

Crop Product Export

Any product produced from a Genuity Roundup Ready Sugarbeet crop or seed may only be used, exported to, processed or sold in countries where regulatory approvals have been granted. It is a violation of national and international laws to move material containing biotech traits across boundaries into nations where import is not permitted.

Stewardship

All Genuity Roundup Ready Sugarbeet growers must sign the Monsanto Technology/Stewardship Agreement (MTSA) limited-use license which provides the terms and conditions for the authorized use of the product. The MTSA must be signed and approved prior to purchase or use of seed.

Bolting sugarbeets must be rogued or topped in Genuity Roundup Ready Sugarbeet fields.

The grower agrees to transport and plant Genuity Roundup Ready Sugarbeets only for the production of a root crop, and not for seed production, unless under specific contract to produce seed.

Weed Management

Sugarbeets are extremely sensitive to weed competition for light, nutrients and soil moisture, and can lose yield potential rapidly if weeds are not controlled early. Sugarbeet weed control research suggests that sugarbeets need to be kept weed-free for the first eight weeks of growth to protect yield potential. Therefore, weeds must be controlled when they are small and before they compete with Genuity Roundup Ready Sugarbeets (before weeds exceed crop height). **More than one in-crop herbicide application will be required** to help control weed infestations to protect yield potential as Roundup® agricultural herbicides have no soil residual activity.

A postemergence weed control program using Roundup WeatherMAX®, Roundup PowerMAX® or Roundup PowerMAX® II herbicide can provide excellent weed control in most situations. A residual herbicide labeled for use in sugarbeets may also be applied preplant, preemergence or postemergence in Genuity Roundup Ready Sugarbeets. Contact a Monsanto representative, local crop advisor or extension specialist to determine the best option for your situation.

Guidelines

Follow all pesticide label directions. Follow the guidelines below to help minimize the risk of developing glyphosate-resistant weed populations in Genuity Roundup Ready Sugarbeets:

- Start with a clean field, using either a burndown herbicide application, residual herbicide or tillage, making sure weeds are controlled at planting.
- Early-season weed control is critical to protect sugarbeet yield potential. Apply the first in-crop application of Roundup WeatherMAX at a minimum of 22 oz/A while weeds are less than 2" in height.
- Follow with additional postemergence in-crop application of Roundup WeatherMAX at a minimum of 22 oz/A for additional weed flushes before weeds exceed 4" in height.
- Use mechanical weed control, cultivation and/or residual herbicides where appropriate.
- Use additional herbicide mechanisms of action, residual herbicides and/or mechanical weed control in other Roundup Ready crops you rotate with Genuity Roundup Ready Sugarbeets.

Additional Information

- Add ammonium sulfate at a rate of 17 lbs/100 gallons of spray solution with Roundup agricultural herbicides to help maximize product performance. Tank-mixtures of Roundup agricultural herbicides with fungicides, insecticides, micronutrients or foliar fertilizers are not recommended. Sequential applications should be at least 10 days apart.
- For tough-to-control weeds or weeds not controlled by Roundup agricultural herbicides, use labeled rates of other approved herbicides, alone or in tank-mixtures, with Roundup agricultural herbicides.
- Report any incidence of repeated non-performance of Roundup agricultural herbicides or other glyphosate products on a particular weed to the appropriate company representative, local retailer, or county extension agent.
- If using another approved glyphosate agricultural herbicide,you must refer to the label booklet or supplemental labeling for the use of that product on Genuity Roundup Ready Sugarbeets for appropriate use rates.
- If using Roundup PowerMAX or Roundup PowerMAX II, application rates are the same as for Roundup WeatherMAX.
- Maximum use rates apply to the total amount applied of all glyphosate-containing products. See the Roundup WeatherMAX label for more information on maximum use rates.

Various weed biotypes are known to be resistant to glyphosate. For the current weed control recommendations for glyphosate-resistant weed biotypes, **refer to www.RoundupReadyPLUS.com or call 1-800-768-6387.** A complete list of specimen labels can be located at **http://www.monsanto.com/products/Pages/msds-labels.aspx.** Approved labels, including supplemental labeling, for Roundup agricultural herbicides must be in the possession of the user at the time of pesticide application and can be obtained by calling 1-800-768-6387 or by contacting your State Pesticide Lead Agency for more information.

Performance Series® Sweet Corn

Performance Series® sweet corn contains Cry1A.105, Cry2Ab2 and Cry3Bb1 from *Bacillus thuringiensis (B.t.)* that together provide protection against European corn borer, southwestern corn borer, sugarcane borer, southern cornstalk borer, corn earworm, fall armyworm, common stalk borer, western corn rootworm, northern corn rootworm, and Mexican corn rootworm.

These products also contain Roundup Ready® 2 technology that provides crop safety to in-crop applications of labeled Roundup PowerMAX®, Roundup PowerMAX® II* and Roundup WeatherMAX® agricultural herbicides when applied according to label directions.

Planting Requirements

Read and follow the IRM Guide on the bag tag prior to planting Performance Series sweet corn.

- **Do not repackage seeds.** Each package of seeds includes important legal requirements on the label. Seeds must remain in their original packaging and must not be further subdivided.
- **Post-Harvest IRM Requirements:** Crop destruction must occur no later than 30 days following harvest, but preferably within 14 days. The allowed crop destruction methods are rotary mowing, discing, or plowing down.
- **Identity Preserved (I.P.) Production:** All harvested ears must be stored in areas where the identity of the ears can be preserved.

Compliance Monitoring Program

The EPA requires Monsanto to take corrective measures in response to a finding of grower IRM non-compliance. As mandated by the EPA, Monsanto or an approved agent of Monsanto must monitor IRM requirements. The MTSA signed by the grower requires that upon request by Monsanto or its approved agent, a grower must provide the location of all fields planted with Performance Series sweet corn. The grower must cooperate fully with any field inspections, and allow Monsanto or an agent of Monsanto to inspect all fields to ensure post-harvest crop destruction. All inspections will be performed at a reasonable time and arranged in advance with the grower so that the grower can be present.

Product Marketing and Stewardship Requirements

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. It is the grower's responsibility to talk to their produce handler or purchaser to confirm their buying position for this produce so that the marketing requirements can be met.

Performance Series® Sweet Corn Insect Pest Control

Performance Series sweet corn provides control of the most important above-ground insect pests of sweet corn, including corn earworm, fall armyworm, European corn borer, southwestern corn borer, sugarcane borer, common stalk borer, and southern cornstalk borer. Monsanto recommends that you continue to scout your fields as usual, and if these insects are present, an appropriate insecticide should be used according to label recommendations.

Performance Series sweet corn also provides control of below-ground feeding from western corn rootworm, northern corn rootworm, and Mexican corn rootworm larvae, and the seed is treated for control of wireworms, white grubs, seed corn maggot, and black cutworm.

Performance Series sweet corn does not control silk flies, adult corn rootworm beetles, sap beetles, western bean cutworm, stinkbugs, and other insect pests not listed above. It is recommended that you scout and spray according to label recommendations to control these pests.

Insect Pests Controlled

	INSECT PEST	CONTROL
Above-Ground	Fall Armyworm	●●
	Corn Earworm (ear feeding)	●●
	European Corn Borer	●●
	Southwestern Corn Borer	●●
	Sugarcane Borer	●●
	Common Stalk Borer	●●
	Southern Cornstalk Borer	●●
	Black Cutworm	Control by included seed treatment
Below-Ground	Western Corn Rootworm Larvae	●
	Northern Corn Rootworm Larvae	●
	Mexican Corn Rootworm Larvae	●
	White Grub	Control by included seed treatment
	Wireworm	Control by included seed treatment
	Seedcorn Maggot	Control by included seed treatment

● = Single mode-of-action pest control ●● = Dual mode of action pest control

*Roundup PowerMAX® and Roundup PowerMAX® II are approved for use only in the U.S.

Performance Series® sweet corn provides growers with a dual mode of action for many above-ground insects, including corn earworm. Under typical infestation levels, Performance Series sweet corn effectively controls corn earworm, but under extremely high infestation levels supplemental insecticide applications may be required to ensure high quality ears at harvest. Thus, protection from corn earworm must be coupled with thorough scouting and spray programs to help maximize marketable yield potential. Supplemental insecticide sprays to control extremely high corn earworm infestations will aid in situations where high corn earworm pressure has been determined.

If supplemental insecticide applications are necessary for control of high levels of corn earworm, rotating insecticide mode of action will help reduce the risk of insect pests developing chemical resistance.

- For target pests, no spray prior to silking.
- After silking, schedule sprays based on insect flight activity and follow state recommendations under high infestation ratings.
- Under heavy insect pressure, spray intervals may have to be reduced.
- Monitor for secondary pests: sap beetles, stink bugs, western bean cutworm, corn silk flies, etc.

Weed Management

The Roundup Ready® 2 Technology system enables flexibility, broad-spectrum weed control and proven crop safety. Growers can select the weed control program that best fits the way they farm and provides them the greatest benefit. Options include the use of a residual herbicide with Roundup® branded agricultural herbicides, tank-mixing other herbicides with Roundup branded agricultural herbicides where appropriate and a total postemergence program.

Corn yield is very sensitive to early-season weed competition. Control weeds before they become competitive. The Roundup Ready 2 Technology system provides a mechanism to control weeds at planting and once they emerge. Failure to control weeds with the right rate, at the right time and with the right product, can lead to increased weed competition, weed escapes, the potential for selecting for herbicide resistance and possible decreased yields. Use a diversity of weed management tools, including multiple herbicide mechanisms of action if appropriate, alone or in tank mixes with Roundup branded agricultural herbicides, based on the weed spectrum in the field and according to label directions.

Guidelines

Follow all pesticide label requirements. Follow the guidelines below to help minimize the risk of developing glyphosate-resistant weed populations in a Roundup Ready 2 Technology system.

- Start clean with a burndown herbicide or tillage. Early-season weed control is critical to yield.
- Apply a preemergence residual herbicide at the appropriate application rate tank-mixed with 16 to 22 oz/A Roundup WeatherMAX® before weeds exceed 4" in height.
- Follow with a postemergence in-crop application of Roundup WeatherMAX with 16 to 22 oz/A for additional weed flushes before they exceed 4" in height.
- Roundup WeatherMAX may be tank-mixed with other herbicides for postemergence weed control.
- Report any incidence of repeated non-performance of Roundup branded agricultural herbicides or other glyphosate products on a particular weed to the appropriate company representative, local retailer, or county extension agent.

Additional Information

Make sure the intended use is approved in your state. Do not use this information as the basis for any glyphosate product other than Roundup branded agricultural herbicides.

Various weed biotypes are known to be resistant to glyphosate. For the current weed control recommendations for glyphosate-resistant weed biotypes, **refer to www.RoundupReadyPLUS.com or call 1-800-768-6387.** A complete list of specimen labels can be located at **http://www.monsanto.com/products/Pages/msds-labels.aspx.** Approved labels, including supplemental labeling, for Roundup branded agricultural herbicides must be in the possession of the user at the time of pesticide application and can be obtained by calling 1-800-768-6387 or by contacting your State Pesticide Lead Agency for more information.

All growers in Idaho and Oregon who intend to plant Performance Series sweet corn must contact Seminis Vegetable Seeds, Inc. at 1-800-927-4769 to order Performance Series sweet corn seed.

Growers in the Treasure Valley of Idaho and Oregon (which consists of Elmore, Ada, Owyhee, Twin Falls, Gooding, Jerome, Lincoln, Cassia, Minidoka, Blaine, Bingham Bonneville, Power, Oneida, Bannock, Franklin, Caribou, Bear Lake, Canyon, Gem, Payette, and Washington counties in Idaho and Malheur County in Oregon) **must pin the location(s) of their Performance Series sweet corn field(s) prior to delivery of Performance Series sweet corn seed, and must contact Seminis Vegetable Seeds, Inc. at 1-800-927-4769 for additional information on the requirements for pinning their Performance Series sweet corn fields.**

This Monsanto Technology/Stewardship Agreement is entered into between you ("Grower") and Monsanto Company ("Monsanto") and consists of the terms on this page and on the next page.

This Monsanto Technology/Stewardship Agreement grants Grower a limited license to use Genuity® Bollgard II® Cotton, Genuity® Bollgard II® with Roundup Ready® Flex Cotton, Genuity® Roundup Ready® Flex Cotton, Bollgard II® XtendFlex® Cotton, XtendFlex® Cotton, Genuity® Roundup Ready 2 Yield® Soybeans, Vistive® Gold High Oleic Soybeans with Genuity® Roundup Ready 2 Yield® technology, Genuity® Roundup Ready® canola, Genuity® Roundup Ready® Alfalfa, HarvXtra™ Alfalfa with Roundup Ready® Technology, Roundup Ready® Corn 2, Genuity® DroughtGard® Hybrids with Roundup Ready® Corn 2, Genuity® Roundup Ready® Sugarbeets, YieldGard® Corn Borer Corn, YieldGard® Corn Borer with Roundup Ready® Corn 2, Genuity® VT Double PRO® Corn, Genuity® DroughtGard® Hybrids with VT Double PRO® Corn, Genuity® VT Double PRO® RIB Complete® Corn blend, Genuity® DroughtGard® Hybrids with VT Double PRO® RIB Complete® Corn blend, YieldGard VT Rootworm/RR2® Corn, Genuity® VT Triple PRO® Corn, Genuity® DroughtGard® Hybrids with VT Triple PRO® Corn, Genuity® VT Triple PRO® RIB Complete® Corn blend, Genuity® DroughtGard® Hybrids with VT Triple PRO® RIB Complete® Corn blend, Performance Series® Sweet Corn, Genuity® SmartStax® Corn, Genuity® SmartStax® RIB Complete® Corn blend, Monsanto patented germplasm and Monsanto Plant Variety Protection rights and any future seed technologies developed, licensed or owned by Monsanto that are made available to you ("Monsanto Technologies"). Seed containing Monsanto Technologies are referred to herein as ("Seed"). This Agreement also contains Grower's stewardship responsibilities and requirements associated with the use of Seed and Monsanto Technologies.

1. GOVERNING LAW: This Agreement and the parties' relationship shall be governed by the laws of the State of Missouri and the United States (without regard to the choice of law rules).

2. BINDING ARBITRATION FOR COTTON-RELATED CLAIMS MADE BY GROWER: Any claim, action or dispute made or asserted by a Grower (or any other person or entity claiming an interest in Grower's cotton crop, hereafter "Grower") against Monsanto, or any person or entity involved in the production, development, distribution, and/or sale of the Seed containing any Monsanto Technology ("seller"), regarding the quality of Monsanto cotton Seed or the agronomic performance of Monsanto Technology in cotton Seed must be resolved by binding arbitration. The foregoing requirement to arbitrate specifically excludes any claim, action or dispute involving the infringement, validity, or enforceability of a patent or that otherwise arises under the U.S. patent laws. As a condition precedent to asserting any claim, action, or dispute regarding the quality of Monsanto cotton Seed or the agronomic performance of any Monsanto Technology in cotton Seed, the Grower must provide notice to Monsanto pursuant to §10 of this Agreement. After Grower provides that notice, Grower may request in writing that the parties engage in good faith negotiations, which the parties will undertake within 30 days after Monsanto's receipt of the request. In the event that a claim is not resolved within the 30 days, or after 30 days following Grower's service of a claim notice if Grower does not request negotiations, any party may initiate arbitration pursuant to the provisions of the Federal Arbitration Act, 9 U.S.C. Sec 1 et seq. and administered under the Commercial Dispute Resolution Procedures established by the American Arbitration Association ("AAA"). GROWER MAY ONLY BRING A CLAIM IN ARBITRATION IN GROWER'S INDIVIDUAL CAPACITY AND GROWER WAIVES ANY RIGHT TO DO SO AS A REPRESENTATIVE OR MEMBER OF ANY CLASS OR PUTATIVE CLASS. The arbitration hearing shall be conducted in the capital city of the state of Grower's residence or in any other place as the parties decide by mutual agreement. Grower and Monsanto/sellers shall each pay one half of the AAA filing fee. Grower and Monsanto/sellers shall each pay one half of AAA's administrative and arbitrator fees as those fees are incurred. The arbitrator(s) shall have the power to apportion the ultimate responsibility for all AAA fees in the final award. The arbitration proceedings and results are to remain confidential and are not to be disclosed without the written agreement of all parties, except to the extent necessary to effectuate the decision or award or as otherwise required by law.

3. FORUM SELECTION FOR NON-COTTON-RELATED CLAIMS MADE BY GROWER AND ALL OTHER CLAIMS: THE PARTIES CONSENT TO THE SOLE AND EXCLUSIVE JURISDICTION AND VENUE OF THE U.S. DISTRICT COURT FOR THE EASTERN DISTRICT OF MISSOURI, EASTERN DIVISION, AND THE CIRCUIT COURT OF THE COUNTY OF ST. LOUIS, MISSOURI, (ANY LAWSUIT MUST BE FILED IN ST. LOUIS, MO OR ST. LOUIS COUNTY, MO) FOR ALL CLAIMS AND DISPUTES ARISING OUT OF OR CONNECTED IN ANY WAY WITH THIS AGREEMENT AND/OR THE USE OF THE SEED OR THE MONSANTO TECHNOLOGIES, EXCEPT FOR COTTON-RELATED CLAIMS MADE BY GROWER. THE PARTIES WAIVE ANY OBJECTION TO VENUE IN THE EASTERN DIVISION OF THE U.S. DISTRICT COURT FOR THE EASTERN DISTRICT OF MISSOURI, INCLUDING THOSE BASED, IN WHOLE OR IN PART, ON THE DIVISIONAL VENUE LOCAL RULE(S) OF THE U.S. DISTRICT COURT FOR THE EASTERN DISTRICT OF MISSOURI.

THIS AGREEMENT CONTAINS A BINDING ARBITRATION PROVISION FOR COTTON-RELATED CLAIMS PURSUANT TO THE PROVISIONS OF THE FEDERAL ARBITRATION ACT, 9 U.S.C. §1 ET SEQ., WHICH MAY BE ENFORCED BY THE PARTIES. THE PARTIES SPECIFICALLY AGREE THAT THIS SECTION COVERS MONSANTO AND ANY CURRENT OR FUTURE U.S.-BASED WHOLLY-OWNED SUBSIDIARIES OR AFFILIATES OF MONSANTO.

4. GROWER AGREES:

a To accept and continue the obligations of this Agreement on any new land purchased or leased by Grower that has Seed planted on it by a previous owner or possessor of the land; and to notify in writing purchasers or lessees of land owned by Grower that has Seed planted on it that the Monsanto Technology is subject to this Agreement and they must have or obtain their own Monsanto Technology/Stewardship Agreement to harvest or use, transfer or sell the harvested crop.

b To read before planting and to follow the applicable Technology Use Guide ("TUG") and the Insect Resistance Management Grower Guide ("IRM Grower Guide") as may be amended from time to time, which are incorporated into and are a part of this Agreement. Grower must comply with the requirements set forth in the TUG and the IRM Grower Guide and is advised to follow the best management practices, recommendations and guidelines provided in those documents.

c To implement an Insect Resistance Management ("IRM") program, if applicable, in accordance with the most recent IRM Grower Guide and to cooperate and comply with these and any additional IRM/Integrated Pest Management (IPM) programs Monsanto communicates to Grower.

d To acquire Seed only from authorized seed companies with technology license(s) from Monsanto for the applicable Monsanto Technology(ies) or from a licensed company's dealer authorized to sell such licensed Seed.

e To acquire Seed only from authorized seed companies (or their authorized dealers) with the applicable license(s).

f To use Seed solely for a single planting of a commercial crop, except in the cases of Genuity® Roundup Ready® Alfalfa and HarvXtra™ Alfalfa with Roundup Ready® Technology where a single planting may be used for multiple cuttings.

g Not to save or clean any crop produced from Seed for planting, not to supply seed produced from Seed to anyone for planting, not to plant Seed for production other than for Monsanto or a Monsanto licensed seed company under a seed production contract.

h Not to transfer any Seed to any other person or entity for planting.

i To plant and/or clean Seed for seed production, if and only if, Grower has entered into a valid, written Seed production agreement with a seed company that is licensed by Monsanto to produce Seed. Grower must either physically deliver to that licensed seed company or must sell for non-seed purposes or use for non-seed purposes all of the Seed produced pursuant to a seed production agreement.

j Grower may not plant and may not transfer to others for planting any Seed that the Grower has produced containing patented Monsanto Technologies for crop breeding, research, or generation of herbicide registration data. Grower may not conduct research on Grower's crop produced from Seed other than to make agronomic comparisons and conduct yield testing for Grower's own use. Monsanto makes available separate license agreements to academic institutions for research.

k To direct crops produced from Seed to appropriate markets. Any grain or material produced from Seed 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.

l Grower agrees to only plant HarvXtra™ Alfalfa with Roundup Ready® Technology in the following states in 2016: Alabama, Arkansas, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Vermont, Virginia, West Virginia and Wisconsin.

m Grower must direct any product produced from HarvXtra™ Alfalfa with Roundup Ready® Technology seed or crops (including hay and hay products) only to US domestic use.

n Pending import approvals in China, Grower agrees not to export Genuity® Roundup Ready® Alfalfa seed or crops (including hay and hay products) to China. In addition, due to the unique cropping practices Grower agrees not to plant Genuity® Roundup Ready® Alfalfa in Imperial County, California, pending import approvals in China and until Monsanto grants express permission for such planting. Genuity® Roundup Ready Alfalfa and HarvXtra™ Alfalfa with Roundup Ready® Technology seed may not be planted for the production of sprouts.

o Grower agrees: 1) not to export Genuity® Roundup Ready® Flex Pima cotton seed, meal, linters, or gin trash to Korea pending import approval; 2) to deliver Genuity® Roundup Ready® Flex Pima cotton to an Arizona, California, New Mexico, or Texas gin that is on Monsanto's approved list (available at www.genuity.com under the Commodity Marketing section of the Stewardship tab); and 3) not to market cotton seed, meal, linters or gin trash from Genuity® Roundup Ready® Flex Pima to a third party who may send such products to countries where those products do not have all necessary regulatory approvals.

p To provide Monsanto copies of any records, receipts, or other documents that could be relevant to Grower's performance of this Agreement, including but not limited to, Summary Acreage History Report, Form 578 (producer print), Farm and Tract Detail Listing and corresponding aerial photographs, Risk Management Agency claim documentation, and dealer/retailer invoices for seed and chemical transactions. Such records shall be produced following Monsanto's actual (or attempted) oral communication with Grower and not later than seven (7) days after the date of a written request from Monsanto.

q To identify and to allow Monsanto and its representatives access to land farmed by or at the direction of Grower (including refuge areas) and bins, wagons, or seed storage containers used or under the control or direction of Grower, for purposes of examining and taking samples of crops, crop residue or seeds located therein. Such inspection, examination or sampling shall be available to Monsanto and its representatives only after Monsanto delivers or mails to the Grower a written notice at least seven (7) days in advance, and Monsanto also has reasonably attempted to discuss the visits with the Grower in advance of the visit.

r To allow Monsanto to obtain Grower's internet service provider ("ISP") records to validate Grower's electronic signature, if applicable.

s To pay all applicable fees due to Monsanto that are a part of, associated with or collected with the Seed purchase price or that are invoiced for the Seed. If Grower fails to pay Monsanto for cotton related Monsanto Technologies, Grower agrees to pay Monsanto default charges at the rate of 14% per annum (or the maximum allowed by law whichever is less) plus Monsanto's reasonable attorneys' fees, court costs and all other costs of collection.

t To use on crops containing Roundup Ready®, Roundup Ready® 2 Technology, or Roundup Ready® Flex only a labeled glyphosate or other authorized non-selective herbicide which could not be used in the absence of the Roundup Ready® gene (see TUG for details on authorized non-selective products). To use on crops containing XtendFlex® technology only a labeled dicamba herbicide which could not be used in the absence of the Xtend gene (see TUG for details on authorized non-selective products). To use on crops containing XtendFlex® technology only a labeled glufosinate herbicide which could not be used in the absence of the Liberty Link® gene (see TUG for details on authorized non-selective products). Use of any selective herbicide labeled for the same crop without the Roundup Ready® gene, Xtend gene or Liberty Link gene is not restricted by this Agreement. MONSANTO DOES NOT MAKE ANY REPRESENTATIONS, WARRANTIES OR RECOMMENDATIONS CONCERNING THE USE OF PRODUCTS MANUFACTURED OR MARKETED BY OTHER COMPANIES WHICH ARE LABELED FOR USE IN ROUNDUP READY® CROP(S). MONSANTO SPECIFICALLY DISCLAIMS ALL RESPONSIBILITY FOR THE USE OF THESE PRODUCTS IN ROUNDUP READY® OR GENUITY® ROUNDUP READY 2 YIELD® CROP(S). ALL QUESTIONS AND COMPLAINTS ARISING FROM THE USE OF PRODUCTS MANUFACTURED OR MARKETED BY OTHER COMPANIES SHOULD BE DIRECTED TO THOSE COMPANIES.

Performance Series® Sweet Corn

u To read and follow the TUG and to abide by and implement IRM requirements on the product tag as may be amended from time to time, which are incorporated into and are a part of this Agreement. Grower must comply with the requirements set forth in the TUG and the tag, and should follow the best management practices, recommendations and guidelines provided in those documents.

5. GROWER RECEIVES FROM MONSANTO COMPANY:

a A limited use license to purchase and to plant Seed pursuant to the terms of this Agreement in the United States of America, comprised of the 50 states and the District of Columbia, except in any state or county where the products do not have all the necessary approvals and to apply labeled glyphosate, dicamba or glufosinate herbicides and other authorized non-selective herbicides over the top of Roundup Ready®, Genuity® Roundup Ready®, XtendFlex® or Performance Series® Sweet Corn crops. Check with your local Monsanto representative if you have questions about the approval status in your state. Monsanto retains ownership of the Monsanto Technologies including the genes (for example, the Roundup Ready® gene) and the gene technologies.

b Monsanto Technologies are protected under U.S. patent law. Monsanto licenses the Grower under applicable U.S. patents (other than the Dow AgroSciences Patent Rights), to use Monsanto Technologies subject to the conditions listed in this Agreement. Dow AgroSciences LLC and Agrigenetics, Inc. (collectively "Dow AgroSciences") licenses the Grower under its applicable U.S. patents (the "Dow AgroSciences Patent Rights") to use Dow AgroSciences' Event TC 1507 and Event DAS 59122-7 to the extent either is present in any SmartStax® Seed being obtained by Grower pursuant to this Agreement, Monsanto being authorized to act on Dow AgroSciences' behalf for this Agreement, subject to the conditions listed in this Agreement. These licenses do not authorize Grower to plant Seed in the United States that has been purchased in another country or plant Seed in another country that has been purchased in the United States. Grower is not authorized to transfer Seed to anyone outside of the U.S.

c Enrollment for participation in Roundup Ready PLUS® Crop Management Solutions.

d A limited use license to prepare and apply on glyphosate-tolerant soybean, cotton, alfalfa, sugar beet, or canola crops (or have others prepare and apply) tank mixes of, or sequentially apply (or have others sequentially apply), glyphosate herbicides labeled for use on those crops with quizalofop, clethodim, sethoxydim, fluazifop, and/or fenoxaprop to control volunteer Roundup Ready® Corn 2 corn in Grower's crops for the 2016 growing season. However, neither Grower nor a third party may utilize any type of co-pack or premix of glyphosate plus one or more of the above-identified active ingredients in the preparation of a tank mix for use on glyphosate-tolerant soybean, cotton, alfalfa, sugar beet, or canola crops.

6. GROWER UNDERSTANDS:

a 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. Any crop or material produced from these products 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 these products.

b Performance Series® Sweet Corn, Genuity® Roundup Ready® Alfalfa, HarvXtra™ Alfalfa with Roundup Ready® Technology, and Genuity® Roundup Ready® Flex Pima cotton are subject to specific product export stewardship requirements.

c Insect Resistance Management: When planting any YieldGard® brand corn products, Genuity® brand corn products or Genuity® Bollgard II® cotton products, Grower must implement an IRM program according to the size and distance guidelines specified in the IRM Grower Guide, including any supplemental amendments. Grower may lose Grower's limited use license to use these products if Grower fails to follow the IRM program required by this Agreement. When planting Performance Series® Sweet Corn growers must implement the IRM program outlined on the product tag.

d Crop Stewardship & Specialty Crops: Refer to the section on Coexistence and Identity Preservation in the TUG for applicable information on crop stewardship and considerations for production of identity preserved crops.

7. GENERAL TERMS:

Grower's rights may not be transferred to anyone else without the written consent of Monsanto. If Grower's rights are transferred with Monsanto's consent or by operation of law, this Agreement is binding on the person or entity receiving the transferred rights. If any provision of this Agreement is determined to be void or unenforceable, the remaining provisions shall remain in full force and effect.

To obtain additional copies of the TUG or IRM information, contact Monsanto at 1-800-768-6387 or go to www.monsanto.com. Once effective, this Agreement will remain in effect until either the Grower or Monsanto choose to terminate the Agreement, as provided in Section 8 below. Information regarding new and existing Monsanto Technologies, including any additions or deletions to the U.S. patents licensed under this agreement, and any new terms will be sent to you. If Grower has provided Monsanto an e-mail address in conjunction with this Agreement, Monsanto may send Agreement updates and new stewardship information to Grower by e-mail or mail. Continuing use of Monsanto Technologies after receipt of any new terms constitutes Grower's agreement to be bound by the new terms.

8. TERMINATION:

Grower may choose to terminate this Agreement effective immediately by delivering written notice to Monsanto. Monsanto may choose to terminate this Agreement in whole or in part by delivering written notice to Grower. Grower must deliver the notice of termination to DRC Data Services, Attn: AgCelerate Agreements, 3385 4th St SW, Mason City, IA 50401. If this Agreement is terminated pursuant to such a notice from either party, Grower's responsibilities and the other terms herein shall survive (such as but not limited to Grower's obligation to use Seed for a single commercial crop) as to Seed previously purchased or used by the Grower.

In the event Grower violates the terms of this Agreement, then the Grower's rights under this Agreement shall automatically terminate. However, Grower's responsibilities and the other terms herein shall survive as to all Seed previously purchased or used by Grower (such as but not limited to Grower's obligation to use Seed for a single commercial crop, Grower's obligation to pay Monsanto for its attorneys' fees, costs and other expenses incurred in enforcing its rights under this Agreement, and Grower's agreement to the choice of law and forum selection provisions contained herein). Further, Grower shall not be entitled to obtain a future limited-use license from Monsanto unless Monsanto provides Grower with specific written notice expressly recognizing the prior breach and prior termination of the limited-use license and expressly granting and/or reissuing the limited-use license previously obtained (and terminated) pursuant to this Agreement. Grower expressly acknowledges that Grower's submission of a new Monsanto Technology/Stewardship Agreement and Monsanto's issuance of a new license number shall not satisfy the specific written notice reference above and that any such action shall have no legal effect. If Grower is found by any court to have breached any term of this Agreement and/or to have infringed one or more of the U.S. patents, Grower agrees that, among other things, Monsanto and Dow AgroSciences, as appropriate, shall be entitled to preliminary and permanent injunctions enjoining Grower and any individual and/or entity acting on Grower's behalf or in concert therewith from making, using, selling, or offering Seed for sale. Additionally, Grower agrees that any such finding of infringement by Grower shall entitle Monsanto and Dow AgroSciences, as appropriate, to patent infringement damages to the full extent authorized by 35 U.S.C. § 271 et. seq. Grower will also be liable for all breach of contract damages.

9. ATTORNEYS' FEES:

If Grower is found by any court to have infringed one or more of the U.S. patents covering Monsanto Technologies or otherwise to have breached this Agreement, Grower agrees to pay Monsanto and the licensed Monsanto Technology provider(s) and Dow AgroSciences, as appropriate, their attorneys' fees and costs related to the case plus any other expenses incurred in the investigation of the breach and/or infringement.

10. NOTICE REQUIREMENT:

As a condition precedent to Grower or any other person with an interest in Grower's crop asserting any claim, action, or dispute against Monsanto and/or any seller of Seed regarding performance or non-performance of Monsanto Technologies or Seed, Grower must provide Monsanto a written, prompt, and timely notice (regarding performance or non-performance of the Monsanto Technologies) and to the seller of any Seed (regarding performance or non-performance of the Seed) within sufficient time to allow an in-field inspection of the crop(s) about which any controversy, claim, action, or dispute is being asserted. The notice will be timely only if it is delivered 15 days or less after the Grower first observes the issue(s) regarding performance or non-performance of the Monsanto Technology and/or the Seed. The notice shall include a statement setting forth the nature of the claim, name of the Monsanto Technology, and Seed hybrid or variety. Grower must deliver the notice to DRC Data Services, Attn: AgCelerate Agreements, 3385 4th St SW, Mason City, IA 50401.

11. LIMITED WARRANTY AND DISCLAIMER OF WARRANTIES:

Monsanto warrants that the Monsanto Technologies licensed hereunder will perform as set forth in the TUG when used in accordance with directions. This warranty applies only to Monsanto Technologies contained in planting Seed that has been purchased from Monsanto and seed companies licensed by Monsanto or the seed company's authorized dealers or distributors. EXCEPT FOR THE EXPRESS WARRANTIES IN THE LIMITED WARRANTY SET FORTH ABOVE, MONSANTO MAKES NO OTHER WARRANTIES OF ANY KIND, AND DISCLAIMS ALL OTHER WARRANTIES, WHETHER ORAL OR WRITTEN, EXPRESSED OR IMPLIED INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE.

12. GROWER'S EXCLUSIVE LIMITED REMEDY:

THE EXCLUSIVE REMEDY OF THE GROWER AND THE LIMIT OF THE LIABILITY OF MONSANTO OR ANY SELLER FOR ANY AND ALL LOSSES, INJURY OR DAMAGES RESULTING FROM THE USE OR HANDLING OF SEED (INCLUDING CLAIMS BASED IN CONTRACT, NEGLIGENCE, PRODUCT LIABILITY, STRICT LIABILITY, TORT, OR OTHERWISE) SHALL BE THE PRICE PAID BY THE GROWER FOR THE QUANTITY OF THE SEED INVOLVED OR, AT THE ELECTION OF MONSANTO OR THE SEED SELLER, THE REPLACEMENT OF THE SEED. IN NO EVENT SHALL MONSANTO OR ANY SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL, OR PUNITIVE DAMAGES.

13. UNITED STATES PATENTS:

The licensed U.S. patents for Monsanto Technologies can be found at the following web page:www.monsantotechnology.com.

Before opening a bag of seed, be sure to read, understand and accept the stewardship requirements, **including applicable refuge requirements for insect resistance management,** for the biotechnology traits expressed in the seed as set forth in the Monsanto Technology/Stewardship Agreement that you sign. By opening and using a bag of seed, you are reaffirming your obligation to comply with the most recent stewardship requirements.

Herbicide Information for Performance Series® sweet corn: Roundup PowerMAX® and Roundup WeatherMAX® herbicides are approved for use on Performance Series® sweet corn (containing the Roundup Ready® trait) in all U.S. states, the District of Colombia and Puerto Rico. If the directions for use on sweet corn hybrids with Roundup Ready® 2 Technology (which includes Performance Series® sweet corn) are not listed in the product label that is attached to the product you purchased, contact your Monsanto Company representative.

Performance Series® sweet corn Insect Resistance Management (IRM) – Post-Harvest Requirements: Crop destruction must occur no later than 30 days following harvest, but preferably within 14 days. The allowed crop destruction methods are: rotary mowing, discing, or plowing down. Crop destruction methods should destroy any surviving resistant insects.

***B.t.* products** may not yet be registered in all states. Check with your Monsanto representative for the registration status in your state.

All information concerning Performance Series® sweet corn hybrids given orally or in writing by Monsanto or its employees or agents, including the information in this communication, is given in good faith, but is not to be taken as a representation or warranty by Monsanto as to the performance or suitability of Performance Series® sweet corn hybrids, which may depend on local climatic conditions and other factors. Monsanto assumes no liability for any such information. This information shall not form part of any contract with Monsanto unless otherwise specified in writing.

IMPORTANT IRM INFORMATION: Genuity® RIB Complete® corn blend products do not require the planting of a structured refuge except in the Cotton-Growing Area where corn earworm is a significant pest. **See the IRM Grower Guide for additional information. Always read and follow IRM requirements.**

ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. Roundup Ready® crops contain genes that confer tolerance to glyphosate. Bollgard II® XtendFlex® Cotton and XtendFlex® Cotton contain genes that confer tolerance to glyphosate, dicamba, and glufosinate. Glyphosate herbicides will kill crops that are not tolerant to glyphosate. Dicamba will kill crops that are not tolerant to dicamba. Glufosinate will kill crops that are not tolerant to glufosinate. Harness®, TripleFLEX® Herbicide and Warrant® Herbicide are not registered in all states. Harness®, TripleFLEX® Herbicide and Warrant® Herbicide may be subject to use restrictions in some states. Degree Xtra® 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. Acceleron and Design®, Acceleron®, Bollgard II®, Degree Xtra®, DroughtGard®, Genuity Design®, Genuity®, Harness®, Monsanto and Vine Design®, Performance Series & Design®, Performance Series®, Respect the Refuge and Cotton Design®, RIB Complete and Design®, RIB Complete®, Roundup Ready 2 Technology and Design®, Roundup Ready 2 Yield®, Roundup Ready®, Roundup®, Roundup WeatherMAX®, Roundup PowerMAX®, SmartStax and Design®, SmartStax®, TripleFLEX®, VT Double PRO®, VT Triple PRO®, Warrant®, XtendFlex®, YieldGard Corn Borer and Design®, YieldGard VT Rootworm/RR2®, YieldGard VT® and YieldGard® are trademarks of Monsanto Technology LLC. Liberty® LibertyLink® and the Water Droplet Design® are registered trademarks of Bayer. HarvXtra™ is a trademark of Forage Genetics International, LLC. Herculex® is a registered trademark of Dow AgroSciences LLC. Respect the Refuge and Corn Design® and Respect the Refuge® are registered trademarks of National Corn Growers Association. All other trademarks are the property of their respective owners. [15-00041pgd] 5A5A152478

MONSANTO