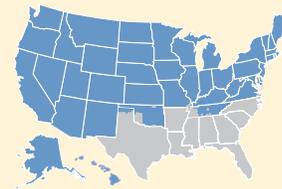


2014 IRM STEWARDSHIP OVERVIEW

INSECT RESISTANCE MANAGEMENT



CORN-GROWING AREA

The *B.t.* corn product IRM Grower Guide is now located on the seed bag tag.

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 *Bacillus thuringiensis* (*B.t.*) technology is to develop and implement an Insect Resistance Management (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 (United States Environmental Protection Agency) 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.

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 product, 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 confirm grower compliance. Failure to follow IRM guidelines and properly plant a refuge may result in the loss of access to *B.t.* technologies.

The EPA mandates an IRM plan for *B.t.* technology. In the Corn-Growing Area, an IRM plan is a requirement for purchasing and growing the following insect-protected products:

No structured refuge required:

- Genuity® SmartStax® RIB Complete® Corn Blend
- Genuity® VT Double PRO® RIB Complete® Corn Blend*
- Genuity® VT Triple PRO® RIB Complete® Corn Blend*

Structured refuge is required — see the IRM Grower Guide on the seed bag:

- Genuity® SmartStax®
- Genuity® VT Double PRO®*
- Genuity® VT Triple PRO®*
- YieldGard VT Triple®
- YieldGard® Corn Borer
- YieldGard® Corn Borer with Roundup Ready® Corn 2
- YieldGard VT Rootworm/RR2®

Structured refuge is required in AZ, CA, NM and west Texas — see the Genuity® Bollgard II® IRM Grower Guide**:

- Genuity Bollgard II Cotton

Continued availability of *B.t.* technologies depends on grower compliance with EPA registration conditions.

GOOD STEWARDSHIP INCLUDES:

- Reading and signing a Monsanto Technology/Stewardship Agreement (MTSA).
- Complying with all the IRM practices for specific biotech traits as mandated by the EPA and the MTSA.
- Refer to the seed bag tag for the corn product IRM Grower Guide.
- The Genuity Bollgard II IRM Grower Guide is available at www.monsanto.com or www.genuity.com.
- Complying with any additional stewardship IRM requirements that Monsanto deems appropriate or necessary to implement for proper stewardship or regulatory compliance.

*Including these products with the Genuity® DroughtGard™ Hybrids trait.

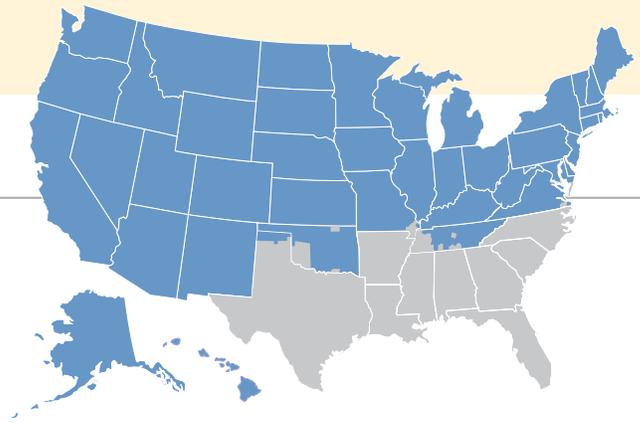
**Structured refuge for Genuity Bollgard II is required in AZ, CA, NM and the Texas counties of Brewster, Crane, Crockett, Culberson, El Paso, Hudspeth, Jeff Davis, Loving, Pecos, Presidio, Reeves, Terrell, Val Verde, Ward and Winkler. If you are planting in an area requiring a structured refuge and 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.



CORN REFUGE REQUIREMENTS

CORN-GROWING AREA

The following states and counties are within the Corn-Growing Area.



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

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 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

Sustainable Agriculture

Monsanto *B.t.* corn and cotton products are highly compatible with the goals of Integrated Pest Management (IPM) and sustainable agriculture. Sustainability of cotton and corn agricultural systems is enhanced when growers follow recommended IPM practices, including cultural and biological control tactics, and appropriate use of pest thresholds and sampling. 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

Although *B.t.* cotton will sustain less damage from some of the most troublesome lepidopteran pests, it will not provide control against non-lepidopteran species. Similarly, 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; these insects are conserved by *B.t.*-protected crops and can contribute to insect pest control.
- 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 over-wintering; destroy crop promptly after harvest and use other soil management practices to reduce overwintering insects.



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.

If you have questions about seed stewardship or become aware of individuals utilizing biotech traits in an unauthorized or improper manner, 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

Anyone may provide Anonymous or Confidential reports as follows:

“Anonymous” reporting occurs 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 and unsigned letters.

“Confidential” reporting occurs 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.

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

COMMITMENT TO STEWARD INSECT-PROTECTED TRAITS

Monsanto is committed to the success of our farmer customers and to providing practical, flexible and cost-effective solutions that address on-farm challenges, contribute to farmer choice and provide economic benefits to our customers. To ensure insect-protected *B.t.* traits remain a viable tool for farmers, we are committed to ongoing conversations with the corn industry — making the following commitments to establish the most comprehensive approach to the stewardship of corn rootworm-protected traits.

We commit to:

- Expand the availability of corn products with multiple modes of action to protect against the corn rootworm.
- Offer a robust product line of elite products — both with and without corn rootworm traits.
- Develop tools and products that make it easier for farmers to comply with refuge requirements.
- Implement broad outreach and farmer educational programs on the benefits of strong IPM plans.
- Conduct comprehensive monitoring of corn rootworm populations across the Corn-Growing Area.
- Work with our customers to implement best management practices (BMPs) on fields with greater than expected corn rootworm damage.
- Invest in our R&D pipeline to continuously develop next-generation insect protection trait solutions that will offer new modes of action for increased durability.
- Continue to invest and develop soybeans to support our leading recommended BMP — rotating the field to a non-host crop, which breaks the corn rootworm cycle.
- Support collaborative, new research that increases broadly our understanding of corn rootworm and corn rootworm management.

CORN ROOTWORM RECOMMENDATIONS

Monsanto has implemented a comprehensive program for corn rootworm, including a series of BMPs, to better assist farmers on every field where growers reported unexpected damage. We encourage farmers 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 like YieldGard VT Triple® or 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.

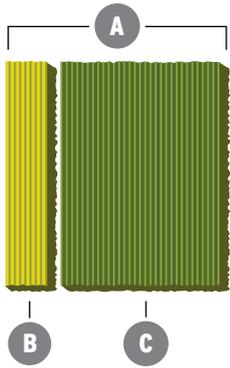
These BMPs provide practical solutions to reduce rootworm populations, limit rootworm damage and enable insect resistance management. The BMPs are as follows:

- **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 2014, 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— **5%** or **20%**
Based on total corn acres

*Includes all corn acres that are infield 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.* product. This is your minimum **REFUGE ACRES.**

$$\text{A } 200 \times \% 20\% = \text{B } 40$$

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

$$\text{A } 200 - \text{B } 40 = \text{C } 160$$



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 yours today.



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.



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

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

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. **Genuity® SmartStax® RIB Complete®, Genuity® VT Double PRO® RIB Complete® and Genuity® VT Triple PRO® RIB Complete®** corn are blended seed corn products. 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, the active ingredient in Roundup® brand agricultural herbicides. Roundup® brand agricultural herbicides will kill crops that are not tolerant to glyphosate. Bollgard II®, DroughtGard™, Genuity Design®, Genuity Icons, Genuity®, Monsanto and Vine Design®, Respect the Refuge and Cotton Design®, RIB Complete®, Roundup Ready 2 Technology and Design®, Roundup Ready®, Roundup®, SmartStax®, VT Double PRO®, VT Triple PRO®, YieldGard VT Rootworm/RR2® and YieldGard® are trademarks of Monsanto Technology LLC. LibertyLink and the Water Droplet Design® is a registered trademark of Bayer. 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. ©2013 Monsanto Company. [13-00073pgd] 5A5B138423