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Protect and Preserve

A strong stewardship program is essential for protecting and preserving the long-term value of insect-protected trait technology. Syngenta provides responsible agriculture programs and information regarding the safe handling and storage of product.

Game-Changing Innovation

The Agrisure® traits portfolio offers a range of technologies that help manage production challenges and protect genetic yield potential.

Agrisure Artesian

Agrisure Artesian® corn hybrids maximize yield when it rains, and increase yield when it doesn't. These elite hybrids convert water to grain more efficiently than other hybrids and represent a simple, effective way to help manage the unpredictability of weather. Available in combination with best-in-class insect control and herbicide tolerance traits. Artesian™ corn hybrids can help improve yield stability and consistency on virtually any corn acre.

✓ AgrisureViptera

Agrisure Viptera® trait stacks provide the most comprehensive above-ground corn insect control, reducing insect feeding damage to ears and the subsequent development of molds and mycotoxins that result from the damage, to protect the quality of grain.

★ AgrisureDuracade®

Agrisure Duracade® trait stacks offer the ultimate combination the latest insect control traits in a wide choice of diverse, high-yielding elite genetics with a simple, 5% integrated E-Z Refuge® seed blend. Agrisure Duracade protects yield potential by controlling Western, Northern and Mexican corn rootworm. It offers a unique protein and multiple modes of action making it a key component in a corn rootworm mananagment program.

🖊 Agrisure

E-Z Refuge products

E-Z Refuge® products offer an integrated seed blend to help meet grower demand for increased convenience. This provides dual modes of action on key pests and are designated by "E-Z Refuge" at the end of the trait stack name.

What's In A (Trait Stack) Name?



The **brand suffix** changes as new technologies are introduced.

The **technology series** is indicated by the first number. The 3 technology series represents herbicide tolerance and the 5 technology series represents Agrisure Duracade.

The **last three numerical identifiers** represent the number of modes of action in each hybrid for broad lepidopteran, corn borer and corn rootworm control.

The **letter A** indicates that the hybrid is a water-optimized Agrisure Artesian hybrid.

The **E-Z Refuge** descriptor follows the trait stack numerical identifiers for hybrids that are available as integrated, single-bag refuge products which contain 95 percent seed of a corn hybrid containing the trait stack and 5 percent seed of a hybrid without insect control traits.

Note: The naming system does not apply to Agrisure 3000GT.

Grower Stewardship Agreement

A strong stewardship program is essential for helping to protect and preserve the long-term value of Agrisure trait technology. Embracing this responsibility provides growers with ongoing choices and helps to ensure they remain good stewards of the land.

Prior to planting corn hybrids with Agrisure traits, you are required to sign a Syngenta Seeds, LLC Stewardship Agreement. This agreement outlines the terms and conditions of growing hybrids with Agrisure traits, including the terms of a limited license under Syngenta's intellectual property, compliance with Environmental Protection Agency (EPA)-mandated IRM programs and grain channeling requirements.

Deadline to have all completed agreements into Syngenta is August 15th, 2018.

Agreements may be sent using the following four methods:

Online

www.agcelerate.com

- Click on Register or Login
- For support using the AgCelerate tool please call AgCelerate Customer Service at 1-866-784-4630
 - · Easy to sign and use
 - · Reduces paperwork
 - · Simple way for growers to manage their technology agreements across all trait providers

E-mail

glg@konnerthconsulting.com

Fax

800.643.8350

Mail

Your Local Supplier or Konnerth Consulting Attn: Stewardship PO Box 316 New Melle, MO 63365

Only use one method; originals are not required. It is important that you keep a copy of the Syngenta Seeds, LLC Stewardship Agreement for your records.

If you have questions regarding the Stewardship Agreement or how to submit the form, please call 877-GRO-CORN (877-476-2676).



	LLC STEWARDSHIP AGREEMENT
GROWER INFORMATION – Complete Section A OR Section B	This Stewardship Agreement ("Agreement") is entered into
PLEASE PRINT CLEARLY	between You ("Grower") and Syngenta Seeds, LLC, a Delaware
	limited liability company ("Syngenta"). By signing and returning this
Section A – For Individual (Sole Proprietorship) Grower	Agreement the Grower receives from Syngenta a limited license to use the
Grower Name (Last First MI)	following technologies as they are contained in any Syngenta seed product
	and/or in any seed product distributed by a third party Syngenta-licensee
Farming or "Doing Business As" (d/b/a/ Name):	(suchproducts collectively referred to as "Seed Product"):
	(i) Agrisure* CB/LL corn, Agrisure GT corn, Agrisure RW corn,
Address:	Agrisure Viptera™ corn, and Agrisure Duracade™ corn (the "Agrisure
City: State: Zip Code:	Technologies"):
Business Phone: County:	(iii) Herculex® I. Herculex RW corn. Herculex XTRA Insect
E-mail Address:	Protection (the "DAS Technologies"):
Customer ID # (optional):	(iii) Genuity® Roundup Ready 2 Yield™ soybeans (the "Genuity
Technology # (optional):	(iii) Genuity* Koundup Ready 2 Yield** soybeans (the "Genuity RR2Y Technology");
receiving w (opeRMM).	
	(iv) Roundup Ready 2 Xtend® soybeans (the "RR2 Xtend
Section B – For Business Entity Grower Business Name:	Technology*)
	(v) LibertyLink* soybeans (the "LibertyLink Technology"); and
Business Type (Check One):	(vi) the soybean varieties and corn hybrids (a) covered by the
Corporation Limited Liability Company (LLC)	patents and/or PVPs listed on the bags and/or tags and sold under the
Partnership	following brands or any other brands listed on the Agrisure Website
Other – please specify:	(defined below): NK, Northrup King, Golden Harvest, Garst, Syngenta,
Principle Place of Business:	Phoenix, or Catalyst; and/or (b) covered by the patents and/or PVPs
Address:	listed on the Agrisure Website (defined below) as updated from time to
City: State: Zip Code:	time by Syngenta (the "Germplasm Technologies").
County: Business Phone:	The Agrisure Technologies, DAS Technologies, Genuity RR2Y
	Technology, RR2 Technology, LibertyLink Technology and Germplasm
Customer ID # (optional):	Technologies shall collectively be referred to as the "Licensed
Technology # (optional):	Technologies" throughout this Agreement.
Authorized Representative Name:	YOU. THE UNDERSIGNED GROWER, HEREBY ACKNOWLEDGE AND AGREE THAT:
E-mail Address:	(1) YOU HAVE READ, UNDERSTAND, AND AGREE TO THE TERMS AND CONDITIONS
	ON PAGES 1 AND 2 OF THIS AGREEMENT: (2) THIS IS A LEGALLY BINDING
OFFICE USE ONLY	AGREEMENT: (3) YOU ARE FULLY AUTHORIZED TO ENTER INTO THIS AGREEMENT:
Reseller Name:	AGREEMENT; (3) YOU ARE FULLY AUTHORIZED TO ENTER INTO THIS AGREEMENT; AGREEMENT: AND (4) YOU ARE VOLUNTARILY ENTERING INTO THIS
	WITH THE INTENT TO BE BOUND BY ITS TERMS AND CONDITIONS
Reseller Number:	WITH THE INTENT TO BE BOUND BY ITS TERMS AND CONDITIONS
Reseller Phone:	
Third Party Syngenta-Licensee:	Grower Signature Date
Return Agreement using one of the methods below:	
Please keep a copy for your files.	Grower Name (Please Print Clearly)
Moil	Thank you for choosing one or more of the Licensed Technologies.
Syngenta Seeds, LLC, Attn: Stewardship	Return the white copy of this Agreement to Syngenta at the address
Syngenta Seeas, LLC, Attn: Stewarasnip 11055 Wayzata Blvd.	shown at the bottom of page 2 of this Agreement. If You have any
	questions regarding the Licensed Technologies or this Agreement, please
	call the Syngenta Customer Resource Center at: 1-877-GRO-CORN (1-
	call the Syngenta Customer Resource Center at: 1-877-GRD-CORN (1- 877-476-2676).
	call the Syngenta Customer Resource Center at: 1-877-GRO-CORN (1- 877-476-2676).
Fax: 1-800-858-8664, or email: syngenta.stewardship@syngenta.com STEWARDSHIP	call the Syngenta Customer Resource Center at: 1-877-GRO-CORN (1- 877-476-2676). sect Resistance Management Stewardship Guide ("Stewardship Guide"), as it may be
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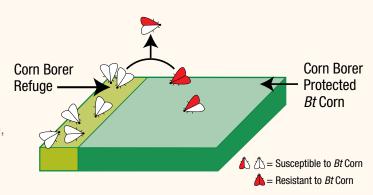
Why Plant A Refuge?

Bacillus thuringiensis (Bt) proteins are toxic to specific pests such as the European corn borer (ECB or CB) and the corn rootworm (CRW or RW). As the number of acres exposed to these Bt products increases so does the potential for target insect pests to develop a resistance to Bt traits. Therefore, in order to preserve this technology now and into the future an Insect Resistance Management (IRM) plan was developed.

A major component of an IRM plan is to plant a refuge. The EPA requires a refuge on every farm that plants Bt corn hybrids. The EPA requires companies that market Bt corn hybrids to have structured refuge requirements and conduct a grower compliance program. IRM education and compliance are uniform across the U.S. corn industry to ensure a consistent IRM message.

Refuge Strategy - How it Works

The refuge maintains a population of insect pests susceptible to the Bt proteins produced in insectprotected Bt corn. These susceptible pests mate with any insect pests that are resistant to the Bt proteins. Susceptibility is then passed on to offspring, helping preserve the long-term effectiveness of insect-protected Bt corn products.





The U.S. Environmental Protection Agency (EPA) requires a refuge on every farm that plants insect-protected corn hybrids. Failure to plant the appropriate refuge jeopardizes your continued access to Agrisure technology.

Insect resistance management (IRM) is a series of production practices that delay or prevent pests from developing resistance to Bt technology.

Insect Resistance Management (IRM)

IRM Compliance Assurance Program

Syngenta and other industry registrants have cooperatively developed the EPA-mandated IRM Compliance Assurance Program. This program requires corn seed companies to evaluate the extent to which growers are adhering to the IRM requirements and ensure that those who do not are brought back into compliance. Growers who do not meet IRM requirements for two years within a five-year period will be denied access to hybrids with Agrisure insect-protected traits in the third year as mandated by the EPA.

On-Farm Assessments

As part of the product registration with the EPA, Syngenta and other seed companies are required to conduct IRM assessments to help ensure growers are planting the correct refuge on their farms. Growers are selected using a set of risk-based criteria, and assessed with a series of questions that must be conducted in person with the grower or their representative. Following each on-farm assessment, it will be determined if the grower is in compliance.

All trait providers are required to participate and contract a third-party company to complete all assessments during the growing season (June – September).

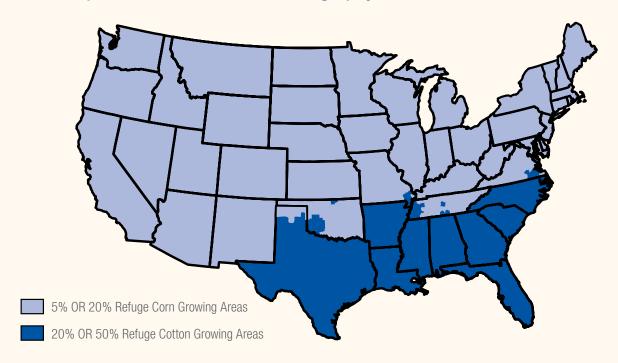
Growers found to be out of compliance with the refuge requirements jeopardize their access to Bt corn products. They will receive a letter informing them of their compliance infraction, reminding them of their compliance obligations, and the consequences of not adhering to the requirements. Included in each letter will be further information on how to develop and implement a suitable IRM program for their farm. Additionally, any grower found to be out of compliance will receive a follow-up IRM assessment the next growing season.

IRM Tip Line

If you have any seed stewardship questions or become aware of individuals not following proper IRM practices as noted in this guide, please call the tips and complaints toll-free phone line at 1-877-GRO-CORN (1-877-476-2676).

Growers are encouraged to scout their fields. If unexpected damage is observed, please contact your seed reseller or company representative.

Size Requirements are Based on Geography and Product



The following states and counties are considered corn-growing areas. Represented by light blue shading. Nebraska

Nevada

New Hampshire

New Jersey

New Mexico

North Dakota

New York

Ohio

Alaska Arizona California Colorado Connecticut Delaware Hawaii Idaho Illinois Indiana Iowa

Kansas Kentucky Maine Marvland Massachusetts Michigan Minnesota

Missouri (all counties except Dunklin, New Madrid, Pemiscot, Scott, & Stoddard) Montana

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, Hanford, Hartley, Hutchinson, Lipscomb, Moore, Ochiltree, Roberts, & Sherman

Utah Vermont

Virginia (all counties except Dinwiddie, Franklin Citv. Greensville, Isle of Wright, Northampton, Southampton, Suffolk City, Surrey, & Sussex)

Washington West Virginia Wisconsin Wvomina

The following states and counties are considered cotton-growing areas. Represented by dark blue shading.

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

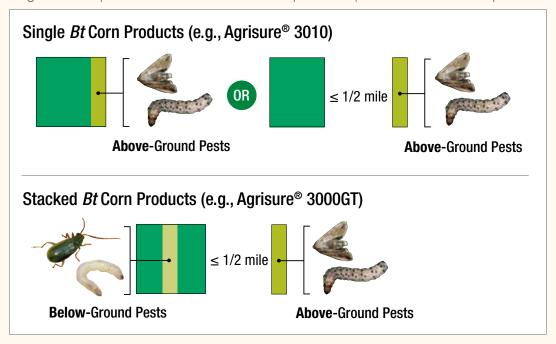
Tennessee (only the counties of Carroll, Chester, Crockett, Dyer, Fayette, Franklin, Gibson, Hardeman, Hardin, Havwood, Lake, Lauderdale, Lincoln, Madison, Obion, Rutherford, Shelby, & Tipton

Texas (all counties except Carson, Dallam, Hanford, Hartley, Hutchinson, Lipscomb, Moore, Ochiltree, Roberts, & Sherman)

Virginia (only the counties of Dinwiddie, Franklin City, Greensville, Isle of Wright, Northampton, Southampton. Suffolk City, Surrey, & Sussex)

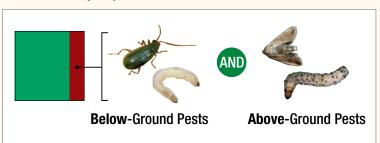
Single Pest Refuge

A single pest refuge is a field that serves solely as a refuge for above-ground pests (e.g., European corn borer) or below-ground pests (e.g., corn rootworm), but not both. The single pest refuge approach can be used for both single Bt corn products and stacked Bt corn products (also known as the Separate Refuge option).



Common Refuge

A common refuge is a field or area of corn that serves as a refuge for both above-ground pests (e.g., European corn borer) and below-ground pests (e.g., corn rootworm) at the same time. The refuge can be within the Bt field or immediately adjacent to it.





Product	Size Requirement (Corn-growing Region)	Size Requirement (Cotton-growing Region)	Distance Requirements
Agrisure 3010	20%	50%	Within, adjacent, or up to 1/2 mile away
Agrisure Artesian 3010A	20%	50%	Within, adjacent, or up to 1 /2 mile away
Agrisure Artesian 3011A	20%	50%	Within or adjacent ¹
Agrisure3000GT	20%	50%	Within or adjacent ¹
Agrisure Viptera	20%	20%	Within, adjacent, or up to 1/2 mile away
Agrisure Viptera	20%	20%	Within or adjacent ¹
Agrisure Viptera 3220 E-Z Refuge*	No additional refuge required	20% supplemental refuge	Within, adjacent, or up to 1/2 mile away²
Agrisure 3120 E-Z Refuge	No additional refuge required	20% supplemental refuge	Within, adjacent, or up to 1/2 mile away²
Agrisure 3122 E-Z Refuge*	No additional refuge required	20% supplemental refuge ¹	Within or adjacent ²
AgrisureDuracade® 5122 E-Z Refuge®	No additional refuge required	20% supplemental refuge ¹	Within or adjacent ²
Agrisure Duracade® 5222 E-Z Refuge®	No additional refuge required	20% supplemental refuge ¹	Within or adjacent ²

Refuge size is calculated by applying the appropriate percentage (e.g., 20%, 50%) to the TOTAL CORN ACRES.

² Only applicable in the cotton-growing region where a supplemental 20% refuge is required for this product.



The Agrisure® 3010 trait stack was previously sold as Agrisure® GT/CB/LL.





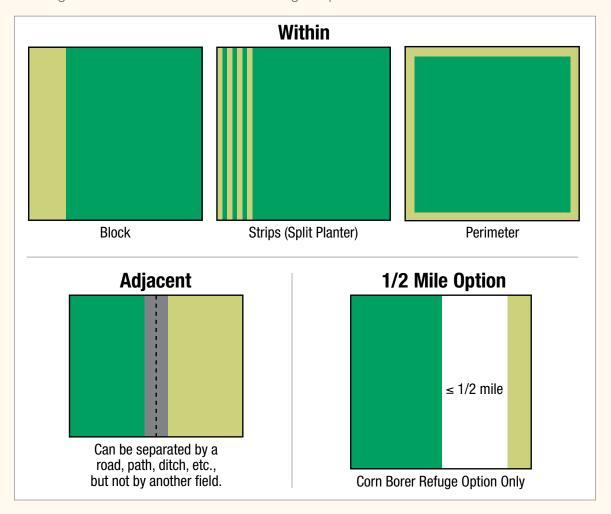
Important: Always read and follow label and bag tag instructions. Consult bag tags for E-Z Refuge product herbicide options. Only those labeled GT/LL may be sprayed with glufosinate ammonium based herbicides. LibertyLink®, Liberty® and the Water Droplet logo are registered trademarks of Bayer. HERCULEX Shield are trademarks of Dow AgroSciences LLC.

Assumes a common corn borer and rootworm refuge. Alternatively, a separate rootworm refuge within or adjacent to the Bt field and a corn borer refuge up to 1/2 mile away could be planted.

Refuge Planting Options

Refuge can be planted as a block, strips within the field, perimeter around the field, adjacent or a separate block within a ½ mile of the field.

- ½ mile option may only be used for corn borer refuge
- A neighbor's field does NOT meet the refuge requirements



Reminder: when calculating a refuge, the calculation must be based on total corn acres.

Strip Refuge

4 Row Minimum – Strips, blocks, or perimeter refuges must be a minimum of 4 contiguous rows wide to provide ample space for bug mating.

Treatment

Corn Borer Treatment – Non-Bt foliar insecticide treatments for corn borer control may be applied only if economic thresholds are reached for one or more pests. Economic thresholds will be determined using methods recommended by local or regional professionals (e.g., Extension Service agents, crop consultants).

Corn Rootworm Treatment – Insecticide treatments for control of corn rootworm larvae may be applied. If rootworm adults are present at time of foliar applications, then corn fields with the Agrisure trait must be treated in a similar manner.

Refuge Management

Refuge should be planted with a hybrid that is agronomically similar to and managed similar to your corn with Agrisure traits.

If a rootworm refuge is planted in a field that is in a crop rotation system, the corn hybrids with Agrisure traits must also be planted in a field that is in a crop rotation system.

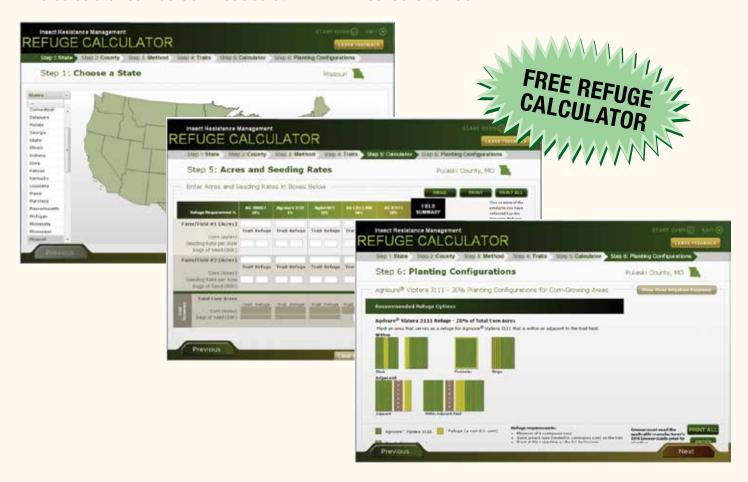
If the rootworm refuge is planted on continuous corn, the corn hybrids with Agrisure traits may be planted on either continuous or in a crop rotation system.

Calculating Your Corn Refuge

Refuge Calculator

National Corn Growers Association (NCGA) in collaboration with the industry has developed a free web-based calculator to help growers plan how to meet the minimum refuge requirements for each of the Bt corn products on their farm.

This calculator can be downloaded at **www.irmcalculator.com**.



Why this free tool is good:

- Downloadable on your smart phone
- Will calculate amount of refuge needed based upon your growing area and trait(s) you're planting
- Calculate quantity of standard seed bags to purchase
- Displays possible planting options for your products



Scan this QR code to start planning your refuge today.

Bag Tag Labeling

Before filling your planter, always check the bag tag to ensure you know the refuge size requirement.

> Important grower information. This hybrid requires you to plant:

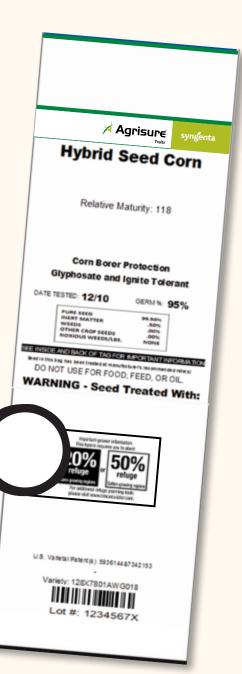
refuge

or refuge

Cotton-growing regions

Corn-growing regions

For additional refuge planning tools please visit www.irmcalculator.com.

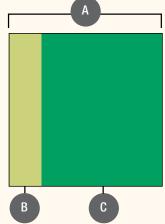


Calculating IRM Refuge Size

Reminder when calculating a refuge, the calculation must be based on total corn acres. This section outlines the right and wrong way to calculate a refuge.

Refer to this diagram for the examples provided on page 15.

- A Total Corn Acres*
- B Refuge Acres
- Bt Acres
- Percent of Required Refuge Based on total corn acres
- * Includes all corn acres that are infield or adjacent to each other and will be allocated to the Bt product and its associated refuge



The Wrong Way to Calculate

(Example shown is for a 20% refuge product where the grower plans to plant 160 acres of Bt corn)

Do **NOT** multiply the amount of *Bt* acres or seed by the percent of refuge required.

This is **NOT** the correct minimum refuge size.

Example



160



X

Χ







The Correct Way to Calculate

(Example shown is for a 20% refuge product where the grower plans to plant 200 acres of total corn)

START with the **TOTAL** number of corn acres you want to plant in an area.

A 200 Example

Your Field

Multiply by the **PERCENT** of refuge required for the Bt trait.

This is your

REFUGE ACRES.

minimum

NEXT subtract your refuge acres from your total corn acres.

Example





Your Field



This is your maximum Bt ACRES.



To effectively manage corn rootworm (CRW), implement a multi-year plan that includes a variety of tactics.

CROP ROTATION



PRODUCTS WITH MULTIPLE CRW B.T. TRAITS



SOIL, SEED OR **INSECTICIDES**



- Did you plant corn rootworm traits for consecutive years in the same fields?
- Did you notice large populations of corn rootworm beetles?
- Did you observe root injury from corn rootworm larvae?
- Are your fields planted to continuous corn?



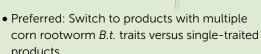
CORN ROOTWORM BEST MANAGEMENT PRACTICES

Rotate Crops — at least every 3rd year if any of the following:

- In long-term continuous corn system
- Corn rootworm populations are high
- Experiencing problems with corn rootworm trait performance

In areas where rotational-resistant corn rootworm variants exist, such as extended diapause eggs or soybean, corn rootworm management options may be needed the following year

Rotate Traits



- Do not plant the same single B.t.-traited product in the same field for 3 consecutive years
- If using a product with multiple corn rootworm B.t. traits is not an option, rotate to a different B.t.-traited product

Plant the Required Refuge

Manage Corn Rootworm (CRW) with Insecticide:

ADULT CRW

- Scout fields for CRW adults during silking stage (typically July and August) as adult corn rootworm beetles feed on corn silks and may reduce yield
- Sprays may be an option if CRW beetle populations reach an economic threshold for damage (≈1 beetle per plant)¹
- Follow university extension service or local crop consultant recommendations for products, rates, and proper timing of adult spray applications for reducing CRW beetle populations
- Multiple sprays may be necessary

LARVAL CRW

- Prescriptive use of soil-applied insecticides may be warranted based on field/trait history and CRW populations
- A soil insecticide should be considered to protect yield on a single B.t.-traited product that has not performed as expected
- Soil-applied insecticides for CRW protection should NOT be necessary for products with multiple CRW B.t. traits

CORN ROOTWORM (CRW) MANAGEMENT PLANNING GUIDE

IS CROP ROTATION AN OPTION?

YES

Plant Different Crop — **Low CRW Population** < 1 beetle per plant





- Utilize seed treatments -or-
- Plant non-B.t. product and use soil insecticides -or-
- Plant products with multiple **CRW** traits

High CRW Population

NO

> 1 beetle per plant

- Plant products with multiple CRW traits -or-
- Rotate to a different B.t.-traited product every 2 years -or-
- Plant non-B.t. product and use soil insecticides

All corn rootworm photos by Marlin E. Rice

Culy, Edwards & Cornelius. 1992. Journal of Economic Entomology 85: 2440-2446.

To manage larval root injury, please utilize university extension and/or your seed company representative to determine the need for soil-applied insecticides or high rate seed treatments. ©2015 Agricultural Biotechnology Stewardship Technical Committee

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