



2010 YIELDGARD® CORN BORER (YGCB) PRODUCT USE GUIDE INSECT RESISTANCE MANAGEMENT (IRM) REQUIREMENTS

IMPORTANT: READ PRIOR TO PLANTING!

WHAT IS YIELDGARD® CORN BORER TECHNOLOGY? YieldGard Corn Borer technology allows farmers to plant corn hybrids with built-in protection to control several important corn insect pests. Hybrids with the YGCB gene control European corn borer, southwestern corn borer, southern cornstalk borer and sugarcane borer, and suppresses corn earworm, fall armyworm and stalk borer.

IMPORTANCE OF IRM – Properly managing YieldGard Corn Borer technology is important to preserving its effectiveness and value in the future. Preserving this technology as well as other corn borer protection technology places individual responsibility on everyone in the seed distribution system, from the seed supplier to the grower planting the seed. This Product Use Guide contains important information on how to implement a proper IRM plan. If you have questions after reviewing this document, please contact your Pioneer sales professional or call toll free at 1-800-323-6103.

WHAT IS A REFUGE? A refuge for YGCB is a cornfield or part of a cornfield planted to corn hybrids that do not contain a gene for controlling corn borers. Refuges are designed to produce corn borers that are susceptible to corn borer protected hybrids. Potentially resistant corn borer moths emerging from corn borer protected fields mate with susceptible corn borer moths from the refuge, resulting in offspring that are susceptible to corn borer protected hybrids. **Planting a refuge is an IRM requirement, is mandated by the EPA, is a contractual and regulatory obligation, works to preserve corn hybrids with the YGCB trait and other corn borer protection technology, and can be adapted to fit the way you farm.**

IRM REQUIREMENTS – IRM programs have four main requirements outlined in detail below. These requirements address (1) the amount of refuge, (2) the required proximity of Bt corn borer protected hybrids to the refuge, (3) the use of insecticides in the refuge and (4) the design and management of the refuge. Growers who plant Bt corn borer protected hybrids are contractually obligated to follow these IRM requirements. **Failure to do so may result in the grower losing the ability to purchase these hybrids for at least one year.** In addition, as a condition of registration, seed companies are required to conduct IRM compliance assessments with growers during each growing season.

IRM REFUGE REQUIREMENTS

REFUGE PERCENTAGE (Map shown on next page)

NON-COTTON GROWING AREAS: On each farm, plant up to 80% of your corn acres with corn borer protected hybrids such as hybrids with the YGCB gene. Plant a minimum of 20% of your corn acres to a corn refuge.

SOUTHERN CORN/COTTON GROWING AREAS: On each farm, plant up to 50% of your corn acres with corn borer protected hybrids such as hybrids with the YGCB gene. Plant a minimum of 50% of your corn acres to a corn refuge. Cotton growing regions with the 50% refuge requirement include the counties listed below:

ALABAMA
All Counties

ARKANSAS
All Counties

FLORIDA
All Counties

GEORGIA
All Counties

LOUISIANA
All Counties

MISSISSIPPI
All Counties

MISSOURI
Counties of:
Dunklin
New Madrid
Pemiscot
Scott

Stoddard

NO. CAROLINA
All Counties

OKLAHOMA
Counties of:

Beckham
Caddo
Comanche
Custer
Greer
Harmon
Jackson
Kay
Kiowa
Tillman
Washita

SO. CAROLINA
All Counties

TENNESSEE
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
Counties of:
Dinwiddie
Franklin City
Greensville
Isle of Wight
Northampton
Southampton
Suffolk City
Surry
Sussex

DISTANCE REQUIREMENT

Plant the corn refuge within, adjacent to, or near the fields with hybrids containing the YGCB trait. The refuge must be placed within 1/2 mile of these fields to help sustain a population of susceptible insects from the refuge near the fields of corn with the YGCB trait. Please note: Use of a neighbor's field does not satisfy the refuge requirement.

INSECTICIDE USE

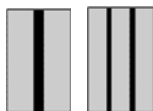
- Insecticides for the control of European corn borer, southwestern corn borer and corn earworm may be applied to the refuge only if economic thresholds are reached for one or more of these target insects.
- Microbial Bt insecticides may not be applied on the refuge.

REFUGE DESIGN

- The corn refuge on your farm may be arranged in a number of different planting patterns. These options provide you with the flexibility to incorporate a corn refuge into your farm operation while maintaining the effectiveness of your IRM program. Acceptable refuge patterns include:



Separate fields of refuge corn planted within 1/2 mile of each field containing hybrid(s) with the YGCB trait.



Large strips or blocks of refuge corn within the field containing hybrid(s) with the YGCB trait.



Planting field perimeters or end rows to refuge corn.



Splitting planter to alternate four rows or more of refuge corn with hybrids containing the YGCB gene.

REFUGE MANAGEMENT

- Manage the refuge the same way you manage Pioneer® brand hybrids with the YieldGard Corn Borer gene. This means:
 - * Plant the refuge to hybrids with similar agronomic characteristics, as close to and at the same time as your corn with the YGCB trait.
 - * Use similar inputs and put the refuge on similar land as the corn with the YGCB trait. Reducing inputs or planting the refuge on marginal land decreases the effectiveness of the refuge and defeats its purpose.
 - * Mixing non-corn borer protected seed with seed containing corn borer protection for use in the refuge is not permitted.
- Monitor your hybrids with the YGCB gene for unexpected insect damage. If you observe any unexpected insect damage, contact your Pioneer sales professional immediately. Your situation will be evaluated to determine the cause of the problem.

SALES AND PLANTING RESTRICTIONS

CALIFORNIA RESTRICTION: The planting of hybrids with the Herculex® I Insect Protection trait is prohibited in certain California counties. Contact your Pioneer Sales Professional for additional details.

If you wish to register a tip or complaint about a grower who may not be following the IRM refuge requirements, or if you have any questions or concerns about complying with IRM requirements on your farm, please call 1-800-323-6103 or contact your Pioneer Sales Professional.

READ THE YIELDGARD CORN BORER PRODUCT USE GUIDE PRIOR TO PLANTING.

EPA Registration Number: 524-489

Active ingredient: *Bacillus thuringiensis* CryIA(b) delta endotoxin and the genetic material necessary for its production in corn.

This product controls European corn borer (*Ostrinia nubilalis*), Sugarcane borer (*Diatraea saccharalis*), southwestern corn borer (*Diatraea grandiosella*), and southern cornstalk borer (*Diatraea crambidoides*); suppresses corn earworm (*Helicoverpa zea*), fall armyworm (*Spodoptera frugiperda*), and stalk borer (*Papaipema nebris*). Routine applications of insecticides to control these insects are usually unnecessary when corn containing YieldGard Corn Borer insect protection is planted.

Growers must read and follow the limitations and requirements in the appropriate Product Notice or Product Use Guide.

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