2010 HERCULEX® I (HX1) INSECT PROTECTION

PRODUCT USE GUIDE

INSECT RESISTANCE MANAGEMENT (IRM) REQUIREMENTS

IMPORTANT: READ PRIOR TO PLANTING!

WHAT IS HERCULEX® I INSECT PROTECTION TECHNOLOGY? Pioneer® brand hybrids that contain the Herculex I (HX1) trait provide protection against European corn borer, southwestern corn borer, black cutworm, fall armyworm, western bean cutworm, lesser corn stalk borer, southern corn stalk borer, and sugarcane borer; and suppresses corn earworm.

NOTE: YOU MUST HAVE A SIGNED PIONEER TECHNOLOGY AGREEMENT ON FILE AND AGREE TO ITS TERMS IN ORDER TO USE PIONEER HYBRIDS WITH THE HX1 TRAIT.

IMPORTANCE OF INSECT RESISTANCE MANAGEMENT (IRM) — Properly managing HX1 insect protection technology is important to preserving its effectiveness and value in the future. Preserving this technology as well as other corn borer protection technologies 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 HX1 is a block or strip of corn that does not contain a Bt trait for controlling corn borers. The primary purpose of a refuge is to maintain a population of corn borers that are susceptible to the Bt proteins contained in the HX1 trait. Potentially resistant insects emerging from fields with the HX1 trait can mate with susceptible corn borer moths from the refuge resulting in offspring that are susceptible to hybrids that contain the HX1 trait. **Planting a refuge is an IRM requirement and is mandated by the Environmental Protection Agency (EPA).**

IRM REQUIREMENTS — IRM programs have four main requirements that are outlined in detail below. These requirements address the (1) the amount of refuge, (2) the required proximity of hybrids with the HX1 trait to the refuge, (3) the use of insecticides in the refuge, and (4) the design and management of the refuge. Growers who plant hybrids with the HX1 trait 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

NON-COTTON GROWING AREAS: On each farm, plant up to 80% of the corn acres with Bt corn borer protected hybrids such as hybrids with the HX1 trait. Plant at least 20% of the corn acres to a corn refuge.

SOUTHERN CORN/COTTON GROWING AREAS: On each farm, plant up to 50% of the corn acres with Bt corn borer protected hybrids such as hybrids with the HX1 trait. Plant at least 50% of the 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

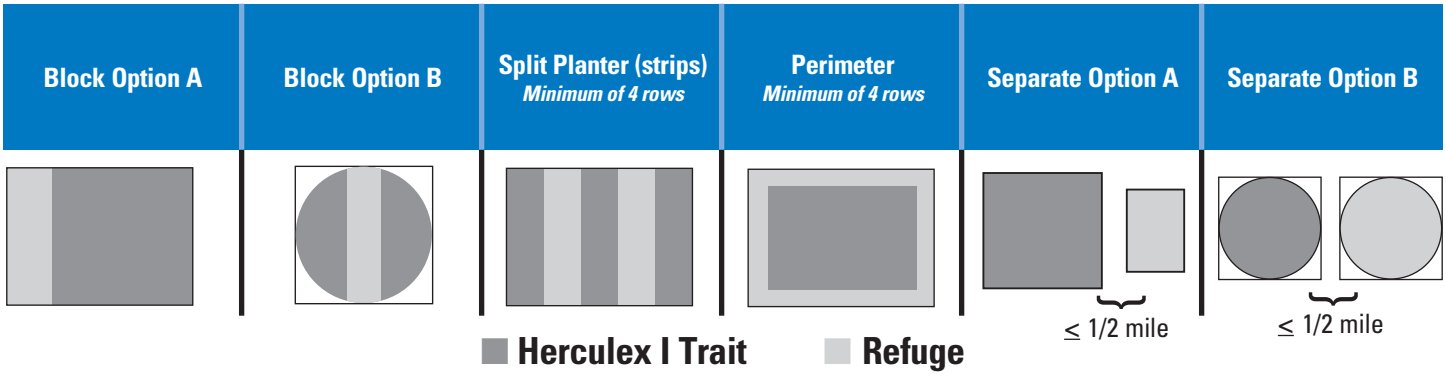
SO. CAROLINA
All Counties

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

REFUGE CONFIGURATION OPTIONS



REFUGE DESIGN

The corn refuge for each field may be arranged in a number of configurations that allow the grower to easily incorporate an effective refuge into a farming operation. Options include:

- Plant a separate refuge field within 1/2 mile of each field containing hybrids with Bt corn borer protection.
- Plant the refuge as strips or blocks within the field containing hybrids with Bt corn borer protection.
- Split the planter to alternate at least four consecutive rows of refuge hybrids with hybrids containing Bt corn borer protection.
- Plant field perimeters or end rows, at least four rows wide, to a refuge.

DISTANCE REQUIREMENT

Plant the corn refuge within, adjacent to, or near the fields that contain Bt corn borer protection such as the HX1 trait. The refuge must be placed within 1/2 mile of HX1 fields. 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, corn earworm, black cutworm, fall armyworm, and western bean cutworm may be applied to the refuge only if economic thresholds are reached for one or more of these target insects.
- Microbial Bt insecticides must not be applied on the refuge.

REFUGE MANAGEMENT

- Manage the refuge the same way you manage Pioneer® brand hybrids with the HX1 trait. This means:
  - Plant the refuge to hybrids with similar agronomic characteristics and at the same time as your corn with the HX1 trait.
  - Use similar inputs and put the refuge on similar land as the corn with the HX1 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 Bt corn borer protection for use in the refuge is not permitted.
- Monitor your hybrids with the HX1 trait 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 HX1 trait is prohibited in certain California counties. Contact your Pioneer sales professional for additional details.

PUERTO RICO RESTRICTION: The sales, distribution, and planting of hybrids with the HX1 trait is prohibited in Puerto Rico.

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 HERCULEX I PRODUCT USE GUIDE PRIOR TO PLANTING.
EPA Registration Number: 029964-3
Active ingredient: *Bacillus thuringiensis* subspecies *aizawai* Cry1F delta endotoxin and the genetic material necessary for its production in corn.

Hybrids with Herculex I technology provide protection against European corn borer (*Ostrinia nubilalis*), southwestern corn borer (*Diatraea grandiosella*), black cutworm (*Agrotis ipsilon*), fall armyworm (*Spodoptera frugiperda*), western bean cutworm (*Striacosta albicosta*), sugarcane borer (*Diatraea saccharalis*), lesser corn stalk borer (*Elasmopalpus lignosellus*), southern corn stalk borer (*Diatraea crambidoides*), and suppresses corn earworm (*Helicoverpa zea*).