

3-17-2003

## YieldGard® Rootworm corn requires a refuge

Marlin E. Rice

Iowa State University, merice@iastate.edu

Follow this and additional works at: <http://lib.dr.iastate.edu/cropnews>



Part of the [Agricultural Science Commons](#), [Agriculture Commons](#), and the [Entomology Commons](#)

---

### Recommended Citation

Rice, Marlin E., "YieldGard® Rootworm corn requires a refuge" (2003). *Integrated Crop Management News*. 1635.  
<http://lib.dr.iastate.edu/cropnews/1635>

**The Iowa State University Digital Repository provides access to Integrated Crop Management News for historical purposes only. Users are hereby notified that the content may be inaccurate, out of date, incomplete and/or may not meet the needs and requirements of the user. Users should make their own assessment of the information and whether it is suitable for their intended purpose. For current information on integrated crop management from Iowa State University Extension and Outreach, please visit <https://crops.extension.iastate.edu/>.**

---

# YieldGard® Rootworm corn requires a refuge

## **Abstract**

The EPA is requiring Monsanto to ensure that 20 percent of the planted acreage of YieldGard® Rootworm be set aside where non-Bt corn will be grown to serve as a refuge. These refuge acres will support populations of corn rootworm not exposed to the Bt protein and reduce the possibility of corn rootworm developing resistance to Bt corn.

## **Keywords**

Entomology

## **Disciplines**

Agricultural Science | Agriculture | Entomology

# INTEGRATED CROP MANAGEMENT

## **YieldGard® Rootworm corn requires a refuge**

The EPA is requiring Monsanto to ensure that 20 percent of the planted acreage of YieldGard® Rootworm be set aside where non-Bt corn will be grown to serve as a refuge. These refuge acres will support populations of corn rootworm not exposed to the Bt protein and reduce the possibility of corn rootworm developing resistance to Bt corn. The corn rootworm populations in the refuges will help prevent resistance development when they cross-breed with insects in the Bt cornfields. This resistance management strategy was developed as a condition of the registration, and EPA will require routine monitoring and documentation that these measures are followed.

The following information on refuge requirements was modified from a Monsanto publication, "YieldGard Rootworm Insect Resistance Management-2003 IRM Guide." Anyone planting YieldGard Rootworm in 2003 must follow these refuge requirements.

### **Refuge requirements for the Corn Belt**

Refuges must be established as follows:

- On each farm, up to 80 percent of corn acres may be planted with YieldGard Rootworm corn. Plant at least 20 percent of the corn acres to a corn refuge that does not contain a Bt technology for control of western or northern corn rootworm. The corn refuge can be treated for corn rootworm larvae and other soil pests with soil-applied, seed-applied, or foliar-applied insecticides. The corn refuge can be treated with a non-Bt insecticide to control late-season pests such as European corn borer; however, the YieldGard Rootworm corn also must be treated. Corn refuge options include YieldGard Corn Borer, RoundupReady corn, and conventional corn, but no other Bt product for corn rootworm management.
- Plant the refuge within or adjacent to YieldGard Rootworm cornfields. The corn refuge can be separated by a ditch or a road but not by another field. Adjacent refuge fields must be owned by or managed by the grower.

### **Refuge planting requirements**

Any corn hybrid that does not contain a Bt technology for control of western or northern corn rootworm and is planted within or adjacent to the YieldGard Rootworm field corn can serve as a refuge.

- Plant a refuge on every farm where YieldGard Rootworm corn hybrids are planted.
- Plant the refuge at the same time as YieldGard Rootworm corn.

- Effectiveness of the refuge can be reduced because plant stands and plant vigor may be decreased. With fewer plants and decreased health, you would get fewer susceptible insects in the refuge.
- Mixing non-Bt seed with YieldGard Rootworm seed for use in the refuge is not permitted.
- Plant the refuge and the YieldGard Rootworm corn to fields with similar crop history. For example, if the field planted to YieldGard Rootworm was corn the previous year, then the refuge also must be planted in a field that was planted to corn the previous year.

## **Refuge configuration options.**

The refuge on each farm may be arranged in a number of configurations. These options offer the flexibility to easily incorporate an effective corn refuge into farm operations. Options include the following:

- Plant a corn refuge adjacent to each YieldGard® Rootworm cornfield.
- Plant a corn refuge as large strips or blocks within a YieldGard Rootworm field.
- Split the planter to alternate at least six and preferably 12 consecutive rows of corn refuge with YieldGard Rootworm corn.
- Plant field perimeters or end rows to a corn refuge.

This article originally appeared on pages 18-19 of the IC-490 (3) -- March 17, 2003 issue.

---

**Source URL:**

<http://www.ipm.iastate.edu/ipm/icm//ipm/icm/2003/3-17-2003/refuge.html>

**IOWA STATE UNIVERSITY**  
University Extension