524-545 10/31/2003

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Biopesticides and Pollution Prevention Division (7511C)
1200 Pennsylvania Avenue NW
Washington, DC 20460

EPA Reg. Number:	Date of Issuance:
524-545	OCT 31 2003
Term of Issuance:	Conditional
Name of Pesticide Product:	YieldGard® Plus Corn

NOTICE OF PESTICIDE:
X Registration
___ Reregistration
(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

Monsanto Company
Mail Zone E3NB
800 N. Lindberg Blvd.
St. Louis, MO 63017

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Biopesticides and Pollution Prevention Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on her motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

The registration application referred to above, submitted in connection with registration under § 3(c)(7)(B) of the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable provided that you implement the following terms and conditions.

1) The subject registration will automatically expire on midnight May 1, 2004. The registration must expire on this date because this is the date of expiration of the tolerance exemption under 40 CFR 180.1214. We note that Monsanto has submitted a petition to amend the tolerance exemption in order to remove the expiration date. Based on the Agency's review of the data submitted and cited in support of this application, and provided that the Agency finalizes a rule which amends 40 CFR 180.1214 so that its expiration date is removed; the Agency anticipates at this time that an expiration date of February 24, 2006 would be appropriate.

2) The subject registration will be limited to the use of a) Bacillus thuringiensis Cry3Bb1 Protein and the Genetic Material Necessary for its Production (Vector ZMIR13L) in MON 863 corn and b) Bacillus thuringiensis Cry1Ab1 Protein and the Genetic Material Necessary for its Production in corn in YieldGard® Plus field corn produced via the conventional breeding of MON 810 and MON 863 corn.

3) Submit/cite all data required for registration of your product under FIFRA § 3(c)(5) when the Agency requires registrants of similar products to submit such data.

CONCURRENCES

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SURNAME	Signature of Approving Official: [illegible]	See P. 10			Date: 10/31/03		
DATE	10/30/03	10-31-03					

EPA Form 8570-35

EPA Form 1320-1A (1/90) *Printed on Recycled Paper* **OFFICIAL FILE COPY**

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4) Submit production information for this product to Mr. Owen Beeder of Office of Pesticide Programs, Registration Division (mail code 7505C) for the fiscal year in which this product is conditionally registered, in accordance with FIFRA § 29. The fiscal year begins October 1 and ends September 30. Production information will be submitted to the Agency no later than December 15, following the end of the preceding fiscal year.

5) Submit all data required to support the individual plant-incorporated protectants in MON 810 and MON 863 corn, EPA Registration Nos. 524-489 & 524-528.

6) Submit small and large-scale field studies should be conducted with YieldGard® Plus Corn with appropriate end points and statistical power to verify there are no adverse ecological effects to non-target invertebrate populations. You must submit annual reports each year of this registration every April 30tt, beginning in 2005.

7) Submit field degradation studies evaluating accumulation and persistence of Cry1Ab and Cry3Bb1 from YieldGard® Plus Corn in several different soils in various strata. Representative fields must have been planted with YieldGard® Plus Corn for at least three consecutive years and include both conventional tillage and no-till samples and be harvested under typical agronomic conditions. Sampling must begin after three consecutive years of YieldGard® Plus Corn planting and continue until the limit of detection is reached. Studies should include soils with high levels of a variety of clays. Both ELISA and insect bioassays need to be conducted and compared to determine if Cry1Ab and Cry3Bb1 are accumulating or persisting in soil samples. A protocol is due within 120 days of the date of registration. Planting of YieldGard® Plus Corn for the study must begin in 2004, with sampling beginning after the 2006 growing season. Provided, the registration and tolerance exemption are amended to extend the expiration dates, a final report is due November 15, 2007.

8) You must commit to do the following Insect Resistance Management Program:

The required IRM program for YieldGard Plus® *Bt* corn has the following elements:

1] Requirements relating to creation of either common or seperate refuges for Cry3Bb1 and Cry1Ab in conjunction with the planting of any acreage of commercial YieldGard Plus® *Bt* corn;

2] Requirements for the registrant to prepare and require *YieldGard Plus® Bt* corn users to sign "grower agreements" which impose binding contractual obligations on the grower to comply with the refuge requirements;

3] Requirements for the registrant to develop, implement, and report to EPA on programs to educate growers about IRM requirements;

4] Requirements for the registrant to develop, implement, and report to EPA on programs to evaluate and promote growers' compliance with IRM requirements (the YieldGard Plus® Compliance Assurance Program (CAP) must integrate with the Cry1 and Cry3Bb1 CAPs);

5] Requirements for the registrant to develop, implement, and report to EPA on monitoring programs to evaluate whether there are statistically significant and biologically relevant changes in target insect susceptibility to Cry3Bb1 or Cry1Ab proteins in [illegible] insects;

6] Requirements for the registrant to develop, and if triggered, to implement a "remedial action plan"

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which would contain measures the registrants would take in the event that any insect resistance was detected as well as to report on activity under the plan to EPA;

7] Submit annual reports on sales(by state and county), IRM grower agreements results, compliance, and educational program on or before January 31st each year beginning in 2005.

a. Refuge Requirements

Grower agreements (also known as stewardship agreements) will specify that growers must adhere to the following refuge requirements as described in the grower guide/product use guide and/or in supplements to the grower guide/product use guide.

Corn Belt / Non-Cotton Growing Region Refuge Requirements

For corn grown in the US Corn Belt two options for deployment of the refuge are available to growers.

The first option is planting a common refuge for both corn borers and corn rootworms. The common refuge must be planted with corn hybrids that do not contain Bt technologies for the control of corn rootworms or corn borers. The refuge area must represent at least 20% of the grower's YieldGard Plus corn acres. It can be planted as a block adjacent to the YieldGard Plus field, perimeter strips, or in-field strips. If perimeter strips are implemented, the strips must be at least 6, and preferably 12 consecutive rows wide. If strips within the YieldGard Plus field are implemented, then at least 6, and preferably 12 consecutive rows should be planted. The common refuge can be treated with a soil-applied or seed-applied insecticide to control rootworm larvae and other soil pests. The refuge can also be treated with a non-Bt foliar insecticide for control of late season pests if pest pressure reaches an economic threshold for damage; however, if rootworm adults are present at the time of foliar applications then the YieldGard Plus field must be treated in a similar manner.

The second option is planting separate refuge areas for corn borers and corn rootworms. The corn borer refuge must be planted with a non-Bt/lepidoteran-protected hybrid, must represent at least 20% of the grower's YieldGard Plus corn acres, and must be planted within ½ mile of the YieldGard Plus field. The corn borer refuge can be treated with a soil-applied or seed-applied insecticide for corn rootworm larval control, or a non-Bt foliar-applied insecticide for corn borer control if pest pressure reaches an economic threshold for damage. The corn rootworm refuge must be planted with a non-Bt/corn rootworm-protected hybrid, but can be planted with Bt corn hybrids that control corn borers. The corn rootworm refuge must represent at least 20% of the grower's YieldGard Plus corn acres and can be planted as an adjacent block, perimeter strips, or in-field strips. The corn rootworm refuge can be treated with a soil-applied or seed-applied insecticide to control rootworm larvae and other soil pests. The refuge can also be treated with a non-Bt foliar insecticide for control of late season pests; however, if rootworm adults are present at the time of foliar applications then the YieldGard Plus field must be treated in a similar manner. Growers who fail to comply with the IRM requirements risk losing access to the product.

Cotton Growing Area Refuge Requirements

For YieldGard Plus corn grown in cotton-growing areas the common refuge and separate refuge options are also available, however, the refuge area is larger. Cotton-growing areas include the following states: Alabama, Arkansas, Florida, Georgia, Louisiana, North Carolina, Mississippi, South Carolina, Oklahoma (only the counties of Beckham, Caddo, Comanche, Custer, Greer, Harmon, Jackson, Kay, Kiowa, Tillman,

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and Washita), Tennessee (only the counties of Carroll, Chester, Crockett, Dyer, Fayette, Franklin, Gibson, Hardeman, Hardin, Haywood, Lake, Lauderdale, Lincoln, Madison, Obion, Rutherford, Shelby, and Tipton), Texas (except the counties of Carson, Dallam, Hansford, Hartley, Hutchinson, Lipscomb, Moore, Ochiltree, Roberts, and Sherman) Virginia (only the counties of Dinwiddie, Franklin City, Greensville, Isle of Wight, Northampton, Southampton, Suffolk City, Surrey, and Sussex), and Missouri (only the counties of Dunkin, New Madrid, Pemiscot, Scott, and Stoddard).

The first option is planting a common refuge for both corn borers and corn rootworms. The common refuge must be planted with corn hybrids that do not contain Bt technologies for the control of corn rootworms or corn borers. The refuge area must represent at least 50% of the grower's YieldGard Plus corn acres. It can be planted as a block adjacent to the YieldGard Plus field, perimeter strips, or in-field strips. If perimeter strips are implemented, the strips must be at least 6, and preferably 12 consecutive rows wide. If strips within the YieldGard Plus field are implemented, then at least 6, and preferably 12 consecutive rows should be planted. The common refuge can be treated with a soil-applied or seed-applied insecticide to control rootworm larvae and other soil pests. The refuge can also be treated with a non-Bt foliar insecticide for control of late season pests if pest pressure reaches an economic threshold for damage; however, if rootworm adults are present at the time of foliar applications then the YieldGard Plus field must be treated in a similar manner.

The second option is planting separate refuge areas for corn borers and corn rootworms. The corn borer refuge must be planted with a non-Bt/lepidopteran-protected hybrid, must represent at least 50% of the grower's YieldGard Plus corn acres, and must be planted within ½ mile of the YieldGard Plus field. The corn borer refuge can be treated with a soil-applied or seed-applied insecticide for corn rootworm larval control, or a non-Bt foliar-applied insecticide for corn borer control if pest pressure reaches an economic threshold for damage. The corn rootworm refuge must be planted with a non-Bt corn/rootworm-protected hybrid, but can be planted with Bt corn hybrids that control corn borers. The corn rootworm refuge must represent at least 20% of the grower's YieldGard Plus corn acres and be planted as an adjacent block, perimeter strips, or in-field strips. The corn rootworm refuge can be treated with a soil-applied or seed-applied insecticide to control rootworm larvae and other soil pests. The refuge can also be treated with a non-Bt foliar insecticide for control of late season pests; however, if rootworm adults are present at the time of foliar applications then the YieldGard Plus field must be treated in a similar manner. Growers who fail to comply with the IRM requirements risk losing access to the product.

b. Grower Agreements

1] Persons purchasing the *Bt* corn product must sign a grower agreement. The term "grower agreement" refers to any grower purchase contract, license agreement, or similar legal document.

2] The grower agreement and/or specific stewardship documents referenced in the grower agreement must clearly set forth the terms of the current IRM program. By signing the grower agreement, a grower must be contractually bound to comply with the requirements of the IRM program.

3] The registrant must develop a system (equivalent to what is already approved for MON 810, EPA Reg. No. 524-489) which is reasonably likely to assure that persons purchasing the *Bt* corn product will affirm annually that they are contractually bound to comply with the requirements of the IRM program. The proposed system will be submitted to EPA within 90 days from the date of registration.

4] The registrant must use grower agreements and submit to EPA within 90 days from the date of registration a copy of that agreement and any specific stewardship documents referenced in the grower

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agreement. If Monsanto wishes to change any part of the grower agreement or any specific stewardship documents referenced in the grower agreement that would affect either the content of the IRM program or the legal enforceability of the provisions of the agreement relating to the IRM program, thirty days prior to implementing a proposed change, the registrant must submit to EPA the text of such changes to ensure that it is consistent with the terms and conditions of the amendment.

5] The registrant must establish a system (equivalent to what is already approved for MON 810, EPA Reg. No. 524-489) which is reasonably likely to assure that persons purchasing the *Bt* corn sign grower agreement(s), and must provide within 90 days from the date of the registration a written description of that system.

6] The registrant shall maintain records of all *Bt* corn grower agreements for a period of three years from December 31st of the year in which the agreement was signed.

7] Beginning on January 31, 2005 and annually thereafter, the registrant shall provide EPA with a report showing the number of units of its YieldGard Plus® corn seeds sold or shipped and not returned, and the number of such units that were sold to persons who have signed grower agreements. The report shall cover the time frame of the twelve-month period covering the prior August through July.

8] The registrant must allow a review of the grower agreements and grower agreement records by EPA or by a State pesticide regulatory agency if the State agency can demonstrate that confidential business information, including names, personal information, and grower license number, will be protected.

c. IRM Education and IRM Compliance Monitoring Programs

1] Monsanto must design and implement a comprehensive, ongoing IRM education program designed to convey to YieldGard Plus corn users the importance of complying with the IRM program. The program shall include information encouraging YieldGard Plus corn users to pursue optional elements of the IRM program relating to refuge configuration and proximity to YieldGard Plus corn fields. The education program shall involve the use of multiple media, e.g. face-to-face meetings, mailing written materials, EPA reviewed language on IRM requirements on the bag or bag tag, and electronic communications such as by Internet, radio, or television commercials. Copies of the materials will be provided to EPA for its records. The program shall involve at least one written communication annually to each YieldGard Plus corn user separate from the grower technical guide. The communication shall inform the user of the current IRM requirements. Monsanto shall coordinate its education programs with educational efforts of other registrants and other organizations, such as the National Corn Grower Association and state extension programs.

2] Annually, the registrant shall revise, and expand as necessary, its education program to take into account the information collected through the compliance survey required under paragraph 6] and from other sources. The changes shall address aspects of grower compliance that are not sufficiently high.

3] Beginning January 31, 2005 and annually thereafter, the registrants must provide a report to EPA summarizing the activities carried out under the education program for the prior year and the plans for their education program during the current year. The registrant must either submit a separate report or contribute to the report from the industry working group (ABSTC).

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the IRM program and that takes such actions as are reasonably needed to assure that growers who have not complied with the program either do so in the future or lose their access to the YieldGard® Plus *Bt* corn product. Monsanto shall ensure that the YieldGard® Plus compliance assurance program (CAP) will be consistent with and integrated with the CAPs for MON 863 and MON 810, EPA Registration Nos. 524-489 and 524-528. The registrant must prepare and submit within 90 days of the date of registration a written description of their compliance assurance program including a summary of the program to be implemented in the 2004 growing season. Other required features of the program are described in paragraphs 5] - 15] below.

5] The registrant must establish and publicize a "phased compliance approach," i.e., a guidance document that indicates how the registrant will address instances of non-compliance with the terms of the IRM program and general criteria for choosing among options for responding to any non-compliant growers. The options shall include withdrawal of the right to purchase YieldGard Plus corn for an individual grower or for all growers in a specific region. An individual grower found to be significantly out of compliance two years in a row would be denied sales of the product the next year. Similarly, seed dealers who are not fulfilling their obligations to inform/educate growers of their IRM obligations will lose their opportunity to sell YieldGard Plus corn.

6] The IRM compliance assurance program shall include an annual survey of a statistically representative sample of *Bt* corn growers conducted by an independent third party. The survey shall measure the degree of compliance with the IRM program by growers in different regions of the country and consider the potential impact of non-response. The sample size and geographical resolution may be adjusted annually, based upon input from the independent marketing research firm and academic scientists, to allow analysis of compliance behavior within regions or between regions. The sample size must provide a reasonable sensitivity for comparing results across the U.S.

7] The survey shall be designed to provide an understanding of any difficulties growers encounter in implementing IRM requirements. An analysis of the survey results must include the reasons, extent, and potential biological significance of any implementation deviations.

8] The survey shall be designed to obtain grower feedback on the usefulness of specific educational tools and initiatives.

9] The registrant shall provide a preliminary summary of their findings by November 15 and a final written summary of the results of the prior year's survey (together with a description of the regions, the methodology used, and the supporting data) to EPA by January 31 of each year. The registrant shall confer with EPA on the design and content of the survey prior to its implementation.

10] Annually, the registrant shall revise, and expand as necessary, its compliance assurance program to take into account the information collected through the compliance survey required under paragraphs 6] through 8] and from other sources. The changes shall address aspects of grower compliance that are not sufficiently high. The registrant must confer with the Agency prior to adopting any changes.

11] The registrant shall train its representatives who make on-farm visits with YieldGard Plus corn growers to perform assessments of compliance with IRM requirements. In the event that any of these visits result in the identification of a grower who is not in compliance with the IRM program, the registrant shall take appropriate action, consistent with the "phased compliance approach," to promote compliance.

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12] The registrant shall carry out a program for investigating legitimate "tips and complaints" that its growers are not in compliance with the IRM program. Whenever an investigation results in the identification of a grower who is not in compliance with the IRM program, the registrant shall take appropriate action, consistent with its "phased compliance approach."

13] If a grower, who purchases YieldGard Plus corn for planting, was specifically identified as not being in compliance during the previous year, the registrant shall visit with the grower and evaluate whether that the grower is in compliance with the IRM program for the current year.

14] Beginning January 31, 2005 and annually thereafter, Monsanto shall provide a report to EPA summarizing the activities carried out under their compliance assurance program for the prior year and the plans for the compliance assurance program during the current year. The report will include information regarding grower interactions (including, but not limited to, on-farm visits, verified tips and complaints, grower meetings and letters), the extent of non-compliance, corrective measures to address the non-compliance, and any follow-up actions taken.

15] The registrant and the seed corn dealers for the registrant must allow a review of the compliance records by EPA or by a State pesticide regulatory agency if the State agency can demonstrate that confidential business information, including the names, personal information, and grower license number of the growers will be protected.

d. Insect Resistance Monitoring

The Agency is imposing the following conditions for this product:

1) The registrant will monitor for resistance and/or trends in increased tolerance for corn rootworm, European corn borer, Southwestern corn borer, and corn earworm. Sampling should be focused in those areas in which there is the highest risk of resistance development. Monitoring must be carried out under the same protocols used for the individual trait products MON 810 and MON 863, EPA Registration Nos. 524-489 and 524-528.

2) The registrant shall provide to EPA a description of its resistance monitoring plan by January 31, 2005. The description shall include: sampling (number of locations and samples per locations), sampling methodology, bioassay methodology, standardization procedures, detection technique and sensitivity, and the statistical analysis of the probability of detecting resistance.

3) The registrant must follow up on grower, extension specialist or consultant reports of less than expected results or control failures for all pests listed on the label and/or grower guide. The registrant will instruct its customers (growers and seed distributors) to contact them (e.g., via a toll-free customer service number) if incidents of unexpected levels of damage occurs from these target pests. The registrant will investigate all damage reports submitted to the company or the company's representatives. See Remedial Action Plans section below.

4) A report on results of resistance monitoring and investigations of damage reports must be submitted to the Agency annually by April 30th each year for the duration of the conditional registration, beginning in 2005.

e. Remedial Action Plans

A Remedial Action Plan covering both suspected and confirmed resistance for corn rootworm, European corn borer, southwestern corn borer, and corn earworm must be submitted by 1/31/2005. If resistance is confirmed, all acres (YieldGard Plus and refuges) should be treated with insecticides targeted at CRW adults as well as larvae.

Annual Reports:

The registrant will provide an annual reports to EPA on its YieldGard Plus PIP expressed in corn based on the following table.

Report	Description	Due Date
Annual Sales	Reported by county and state summed by state	January 31st each year beginning in 2005
Grower Agreement	Number of units of *Bt* corn seeds shipped or sold and not returned, and the number of such units that were sold to persons who have signed grower agreements	January 31st each year beginning in 2005
Grower Education	Education program completed previous year and plan for next year	January 31st each year beginning in 2005
Proposed Compliance Plan	Written description of Compliance Assurance Program	90 Days of the Date of Registration
Compliance Assurance Plan	Compliance Assurance Program Activities and Results	January 31st each year starting in 2005
Compliance	To include annual survey results and plans for the next year	Preliminary survey report November 15th each year (beginning 2004) and full report January 31st each year thereafter
Insect Resistance Monitoring	Description of the program including sampling (number of locations and samples per locations), sampling methodology, bioassay methodology, standardization procedures, detection technique and sensitivity, and the statistical analysis of the probability of detecting resistance.	January 31, 2005

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Additional reports are due as described in the following table:

IRM Grower Agreements	Proposed system to assure growers sign grower agreements	90 Days of the Date of Registration
IRM Affirmation Plan	System to assure annual affirmation by growers of their IRM obligations	90 Days of the Date of Registration
Changes to Grower Agreement and/or IRM documents	Current grower agreement(s) and any specific stewardship documents	At least 30 days before any changes related to IRM are expected to be imposed.
Insect Resistance Monitoring Results	Results of monitoring and investigations of damage reports	April 30th each year, beginning 2005

The labeling and Confidential Statement of Formula (CSF) submitted with your October 28, 2003 letter are acceptable provided subject to the following comments. Submit revised labeling and CSF by December 15, 2003.

- Paginate the label.
- Modify the active ingredient statements on the label and column 10 on the CSF such that the active ingredients are listed as *Bacillus thuringiensis* PCry3Bb1 protein and the genetic material necessary for its production (Vector ZMIR13L) in event MON863 corn and *Bacillus thuringiensis* Cry1Ab delta- endotoxin and the genetic material necessary for its production in corn.
- Modify the statement directly below "YieldGard Plus Corn" to read "This product is effective in controlling leaf, stalk, and ear damage caused by corn borers and root feeding damage caused by corn rootworm larvae."
- Modify the statement "It is a violation of Federal law to use this seed in any manner inconsistent with this labeling." with "It is a violation of Federal law to use this product in any manner inconsistent with this labeling." and add the following statement directly below it: "The following information regarding commercial production must be included in the YieldGard Plus Technology Use Guide.

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If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of YieldGard® Plus corn constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Sincerely,

Phil Hutton for

Janet L. Andersen, Ph.D, Director
Biopesticides and Pollution
Prevention Division (7511C)

Enclosure

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YieldGard® Plus Corn

This package contains corn seed producing the Cry1Ab and Cry3Bb1 insecticidal proteins from *Bacillus thuringiensis (Bt)*. These proteins are effective in controlling leaf, stalk, and ear damage caused by corn borers and root feeding damage caused by corn rootworm larvae.

Active Ingredients:

Bt Cry1Ab protein and the genetic material necessary for its production (PV-ZMCT01) in corn	0.002 – 0.005%
Bt Cry3Bb1 protein and the genetic material necessary for its production (ZMIR13L) in corn	0.003 - 0.016%

Other Ingredients:

Substance produced by a marker gene and the genetic material necessary for its production (ZMIR13L) in corn	0.00005 – 0.0001%

Percentage (wt/wt) on a dry weight basis.

KEEP OUT OF REACH OF CHILDREN

CAUTION

ACCEPTED
WITH COMMENTS
In EPA Letter Dated
OCT 31 2003

EPA Registration No. 524-545

524-545

EPA Establishment No. 524-MO-002

Monsanto Company
800 North Lindbergh Blvd
St. Louis, MO 63167

NET CONTENTS_____

DIRECTIONS FOR USE

It is a violation of Federal law to use this seed in any manner inconsistent with this labeling.

YieldGard Plus corn combines the insect protection features of YieldGard Corn Borer corn and YieldGard Rootworm corn in the same corn hybrid. YieldGard Plus hybrids protect corn crops from leaf, stalk, and ear damage caused by corn borers and root damage caused by corn rootworm larvae. In order to minimize the risk of these pests developing resistance to YieldGard Plus corn, an insect resistance management plan must be implemented which includes planting of a structured refuge.

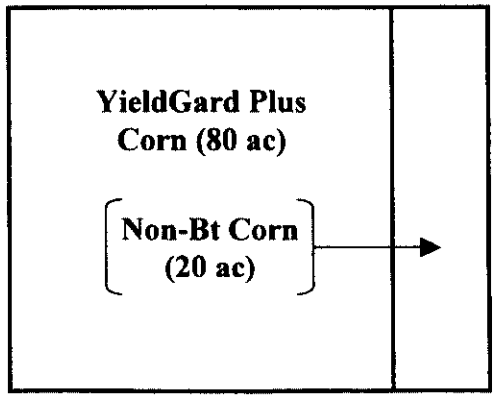
INSECT RESISTANCE MANAGEMENT

Corn Belt / Noncotton Growing Region Refuge Requirements

For corn grown in noncotton growing regions of the US, two options for deployment of the refuge are available to growers.

The first option is planting a common refuge for both corn borers and corn rootworms. The common refuge must be planted with corn hybrids that do not contain Bt technologies for the control of corn borers or corn rootworms. The refuge area must represent at least 20% of the grower's corn acres (i.e., sum of YieldGard Plus acres and refuge acres). It can be planted as a block within or adjacent to the YieldGard Plus field, strips around the field, or in-field strips. If perimeter or in-field strips are implemented, the strips must be at least 6, and preferably 12 consecutive rows wide. The common refuge can be treated with an insecticide to control rootworm larvae and other soil pests. The refuge can also be treated with a non-Bt foliar insecticide for control of late season pests if pest pressure reaches an economic threshold for damage; however, if rootworm adults are present at the time of foliar applications then the YieldGard Plus field must be treated in a similar manner. Economic thresholds will be determined using methods recommended by local or regional professionals (e.g., Extension Service agents, crop consultants, etc.). A schematic of one common refuge deployment option is shown below:

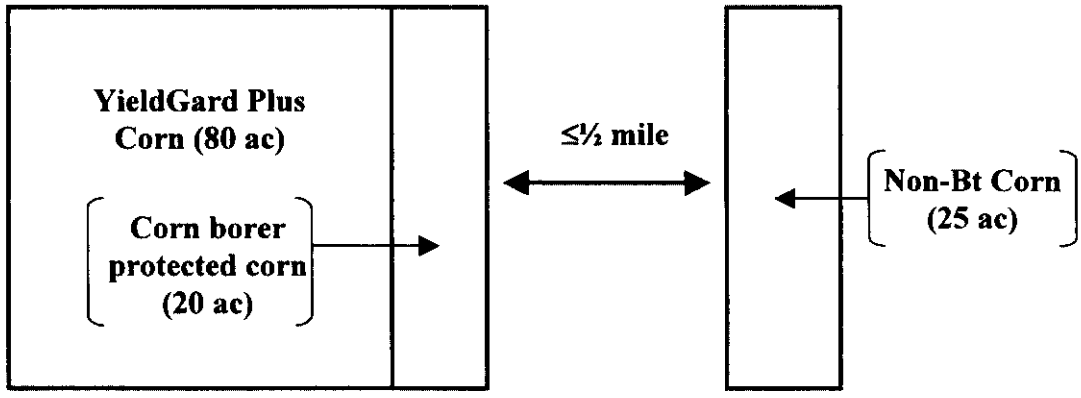
Common Refuge



The second option is planting separate refuge areas for corn borers and corn rootworms. The corn borer refuge must be planted with a non-Bt/lepidoteran-protected hybrid, must represent at least 20% of the grower's corn acres, and must be planted within ½ mile of the YieldGard Plus field. The corn borer refuge can be treated with an insecticide for corn rootworm larval control, or a non-Bt foliar-applied insecticide for corn borer control if pest pressure reaches an economic threshold for damage.

The corn rootworm refuge must be planted with a non-Bt/corn rootworm-protected hybrid, but can be planted with Bt hybrids that control corn borers. The corn rootworm refuge must represent at least 20% of the grower's corn acres and can be planted as a block within or adjacent to the YieldGard Plus field, strips around the field, or in-field strips. The corn rootworm refuge can be treated with an insecticide to control rootworm larvae and other soil pests. The refuge can also be treated with a non-Bt foliar insecticide for control of late season pests; however, if rootworm adults are present at the time of foliar applications then the YieldGard Plus field must be treated in a similar manner. A schematic of one separate refuge option with the corn rootworm refuge planted as a block within the field and the corn borer refuge planted within a ½ mile of the YieldGard Plus field is shown below:

Separate Refuge Option



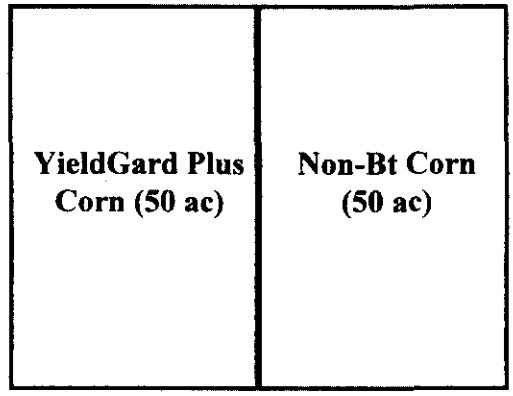
Cotton Growing Area Refuge Requirements

For YieldGard Plus corn grown in cotton growing areas of the US the common refuge and separate refuge options are also available, however, the refuge area is larger. Cotton growing areas include the following states: Alabama, Arkansas, Florida, Georgia, Louisiana, North Carolina, Mississippi, South Carolina, Oklahoma (only the counties of Beckham, Caddo, Comanche, Custer, Greer, Harmon, Jackson, Kay, Kiowa, Tillman, and Washita), Tennessee (only the counties of Carroll, Chester, Crockett, Dyer, Fayette, Franklin, Gibson, Hardeman, Hardin, Haywood, Lake, Lauderdale, Lincoln, Madison, Obion, Rutherford, Shelby, and Tipton), Texas (except the counties of Carson, Dallam, Hansford, Hartley, Hutchinson, Lipscomb, Moore, Ochiltree, Roberts, and Sherman) Virginia (only the counties of Dinwiddie, Franklin City, Greensville, Isle of Wight, Northampton, Southampton, Suffolk

City, Surrey, and Sussex), and Missouri (only the counties of Dunkin, New Madrid, Pemiscot, Scott, and Stoddard).

The first option is planting a common refuge for both corn borers and corn rootworms. The common refuge must be planted with corn hybrids that do not contain Bt technologies for the control of corn rootworms or corn borers. The refuge area must represent at least 50% of the grower's corn acres. It can be planted as a block within or adjacent to the YieldGard Plus field, strips around the field, or in-field strips. If perimeter or in-field strips are implemented, the strips must be at least 6, and preferably 12 consecutive rows wide. The common refuge can be treated with an insecticide to control rootworm larvae and other soil pests. The refuge can also be treated with a non-Bt foliar insecticide for control of late season pests if pest pressure reaches an economic threshold for damage; however, if rootworm adults are present at the time of foliar applications then the YieldGard Plus field must be treated in a similar manner. A schematic of one common refuge deployment option is shown below:

Common Refuge

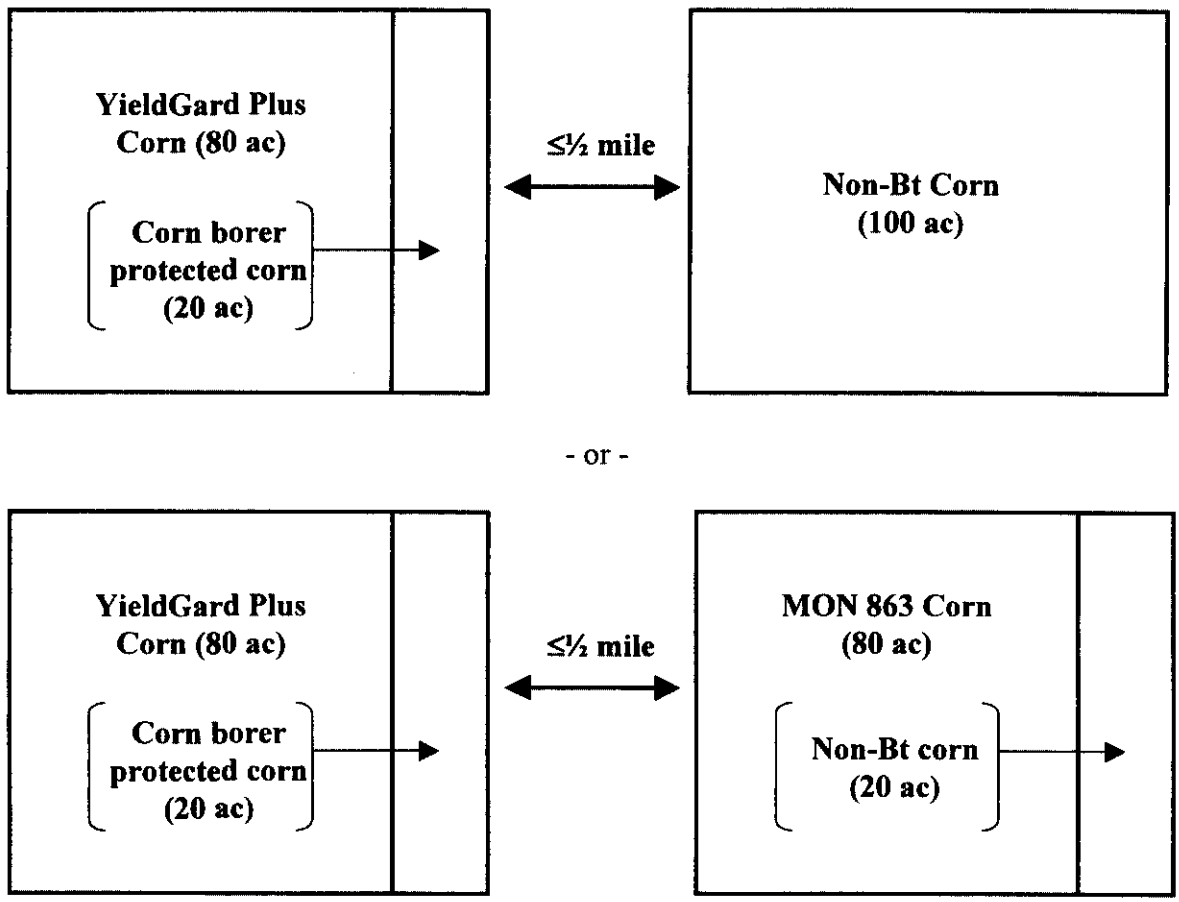


The second option is planting separate refuge areas for corn borers and corn rootworms. The corn borer refuge must be planted with a non-Bt/lepidopteran-protected hybrid, must represent at least 50% of the grower's corn acres, and must be planted within ½ mile of the YieldGard Plus field. The corn borer refuge can be treated with an insecticide for corn rootworm larval control, or a non-Bt foliar-applied insecticide for corn borer control if pest pressure reaches an economic threshold for damage. Economic thresholds will be determined using methods recommended by local or regional professionals (e.g., Extension Service agents, crop consultants, etc.).

The corn rootworm refuge must be planted with a non-Bt corn/rootworm-protected hybrid, but can be planted with Bt hybrids that control corn borers. The corn rootworm refuge must represent at least 20% of the grower's corn acres and be planted as a block within or adjacent to the YieldGard Plus field, strips around the field, or in-field strips. The corn rootworm refuge can be treated with an insecticide to control rootworm larvae and other soil pests. The refuge can also be treated with a non-Bt foliar insecticide for control of late season pests; however, if rootworm adults are present at the time of foliar applications then the YieldGard Plus field must be treated in a similar manner. Schematics for two separate refuge options

with the corn rootworm refuge planted as a block within the YieldGard Plus field and the corn borer refuge planted as a block within a ½ mile of the YieldGard Plus field are shown below:

Separate Refuge Options



Grower agreements will specify that growers must adhere to the refuge requirements that will be described in the Technology Use Guide for YieldGard Plus Corn or other applicable product use documents. Growers who fail to comply with the IRM requirements risk losing access to the product.

These refuge requirements do not apply to operations engaged in the propagation of inbred and hybrid seed corn.

CORN INSECTS CONTROLLED OR SUPPRESSED

European corn borer (*Ostrinia nubilalis*)
Southwestern corn borer (*Diatraea grandiosella*)
Southern cornstalk borer (*Diatraea crambidoides*)
Sugarcane cornstalk borer (*Diatraea saccharalis*)

Corn earworm (*Helicoverpa zea*)
Fall armyworm (*Spodoptera frugiperda*)
Stalk borer (*Papaipema nebris*)
Western corn rootworm (*Diabrotica virgifera virgifera*)
Northern corn rootworm (*Diabrotica barberi*)
Mexican corn rootworm (*Diabrotica virgifera zeae*)

YieldGard Plus is a product of Monsanto's research program offering unique genetic characteristics for specific grower needs and may be protected by one or more of the following U.S. Patents: 5,023,179, 5,352,605, 5,424,412, 5,484,956, 5,859,347, 5,593,874, 6,063,597, 6,174,724, and 6,331,665.