66330-328 03106 12009 1/43

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Bill Washburn
Regulatory Manager
Arysta LifeScience North America LLC
15401 Weston Parkway, Suite 150
Cary, NC 27513

MAR 6 2009

Subject: Label Notification(s) for Pesticide Registration Notices 2007-4 and 98-10

1. **Update of company name**
2. **Added emergency telephone number(s)**
3. **Updated warranty statement**

Dear Mr. Washburn:

The Agency is in receipt of your Application(s) for Pesticide Notification under Pesticide Registration Notices (PRN) 2007-4 and 98-10 dated February 3, 2009 for:

EPA Registration 66330-297	**Iprodione 4L AG**
EPA Registration 66330-262	**Ethephon 2# Plant Regulator**
EPA Registration 66330-328	**Clethodim 2EC Herbicide**

The Registration Division (RD) has conducted a review of this request for applicability under PR Notices 2007-4 and 98-10 and finds that the label changes requested falls within the scope of PR Notices 2007-4 and 98-10. The label has been date-stamped "Notification" and will be placed in our records.

Please be reminded that 40 CFR Part 156.140(a)(4) requires that a batch code, lot number, or other code identifying the batch of the pesticide distributed and sold be placed on nonrefillable containers. The code may appear either on the label (and can be added by non-notification/PR Notice 98-10) or durably marked on the container itself.

If you have any questions, please contact me directly at 703-305-6249 or Nicole Williams of my staff at 703-308-5551.

Sincerely,

Linda Arrington
Notifications & Minor Formulations Team Leader
Registration Division (7505P)
Office of Pesticide Programs

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Please read instructions on reverse before completing form.

Form Approved, OMB No. 2070-0060, Approval expires 05-31-98

EPA

United States
Environmental Protection Agency
Washington, DC 20460

☐ **Registration**
☐ **Amendment**
☒ **Other:**

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number **66330-328**	2. EPA Product Manager **JOANNE MILLER**	3. Proposed Classification ☐ None ☐ Restricted
4. Company/Product (Name) **CLETHODIM 2EC HERBICIDE**	PM# **23**	
5. Name and Address of Applicant *(Include ZIP Code)* **Arysta LifeScience North America, LLC** **15401 Weston Parkway, Suite 150** **Cary, NC 27513** ☐ *Check if this is a new address*	6. **Expedited Review**. In accordance with FIFRA Section 3(c)(3)(b)(I), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name_____	

NOTIFICATION
MAR 6 2009

Section - II

☐ Amendment – Explain below.
☐ Resubmission in response to Agency letter dated _____
☒ Notification - Explain below.
☐ Final printed labels in response to Agency letter dated _____
☐ "Me Too" Application
☐ Other - Explain below

Explanation: Use additional page(s) if necessary. (For Section I and Section II.)

Notification of label change per PR Notice 2007-4. This notification is consistent with guidance in PR Notice 2007-4 and the requirements of EPA's regulations at 40 CFR §§ 156.10, 156.140. 156.144, 156.146, and 156.156. No other changes have been made to the labeling or the Confidential Statement of Formula for this product. I understand that it is a violation of 18 USC Sec 1001 to willfully make any false statement to EPA. I further understand that if the amendment is not consistent with the requirements of 40 CFR §§ 156.10, 156.140. 156.144, 156.146, and 156.156, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

Notification of label change per PR Notice 98-10. This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 USC Sec 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

Section - III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging	Unit Packaging	Water Soluble Packaging	2. Type of Container
☐ Yes* ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Metal ☒ Plastic ☐ Glass ☐ Paper ☐ Other (Specify)
***Certification must be submitted**	If "Yes" Unit Packaging wgt. / No. per container	If "Yes" Package wgt. / No. per container	

3. Location of Net Contents Information	4. Size(s) Retail Container	5. Location of Label Directions
☒ Label ☐ Container	**1.0 gal., 2.5 gal, 5.0 gal**	☒ On Label ☐ On labeling accompanying product

6. Manner in Which Label is Affixed to Product ☐ Lithograph ☒ Paper glued ☐ Stenciled ☐ Other _____

Section - IV

1. Contact Point *(Complete items directly below for identification of individual to be contacted, if necessary, to process this application)*

Name	Title	Telephone No. (Include Area Code)
Bill Washburn	**Regulatory Manager**	**501-432-5118**

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

2. Signature Bill Washburn	3. Title **Regulatory Manager**	6. Date Application Received **(Stamped)**
4. Typed Name **Bill Washburn**	5. Date **02/03/09**	

Arysta LifeScience

01 3/43

February 3, 2009

Ms. Joanne Miller, PM 23
Document Processing Desk (NOTIF)
Office of Pesticide Programs – 7504P
U.S. Environmental Protection Agency
One Potomac Yard, Room S-4900
2777 South Crystal Drive
Arlington, VA 22202

Subject: **CLETHODIM 2EC HERBICIDE**
EPA Reg. No. 66330-328

Notification of Label Change per PR Notice 2007-4 and PR Notice 98-10

Dear Ms. Miller:

Please find the following enclosed:

- Application for Pesticide Registration (Other) dated 02/03/09.
- One highlighted copy of subject label, showing all changes.
- One clean copy of the subject label.

Notification of label change per PR Notice 2007-4. This notification is consistent with guidance in PR Notice 2007-4 and the requirements of EPA's regulations at 40 CFR §§ 156.10, 156.140. 156.144, 156.146, and 156.156. No other changes have been made to the labeling or the Confidential Statement of Formula for this product. I understand that it is a violation of 18 USC Sec 1001 to willfully make any false statement to EPA. I further understand that if the amendment is not consistent with the requirements of 40 CFR §§ 156.10, 156.140. 156.144, 156.146, and 156.156, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

Also in this submission, we are using PR Notice 98-10 to update the name of the company, emergency telephone numbers and warranty. Arysta LifeScience North America Corporation was changed to Arysta LifeScience North America, LLC.

Should you have any questions or comments, please do not hesitate to contact me at 901-432-5118 or by e-mail at bill.washburn@arystalifescience.com

Sincerely,

Bill Washburn
Regulatory Manager

Arysta LifeScience North America, LLC
15401 Weston Parkway, Suite 150, Cary, NC 27513 Phone 919-678-4900 Fax 919-678-2194
www.arystalifescience.com

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NOTIFICATION
MAR 6 2009

MICRO FLO
CLETHODIM 2EC HERBICIDE

ACTIVE INGREDIENT:
*Clethodim 26.4%
Other Ingredients:** 73.6%
TOTAL: 100.0%
*(E)-2[1-[[(3-chloro-2-propenyl)oxy]limino]propyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one
**Contains Petroleum Distillates

Contains: 2.0 lbs. Clethodim per gallon

KEEP OUT OF REACH OF CHILDREN
CAUTION-PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

FIRST AID	
IF IN EYES:	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
IF SWALLOWED:	• Immediately call a poison control center or doctor. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give any liquid to the person. • Do not give anything by mouth to an unconscious person.
NOTE TO PHYSICIAN: Contains petroleum distillate. Vomiting may cause aspiration pneumonia.	
EMERGENCY TELEPHONE NUMBERS: Have the product container or label with you when calling a poison control center or doctor, or going for treatment. **FOR 24-HOUR EMERGENCY MEDICAL ASSISTANCE CALL:** 1-866-303-6952 **FOR CHEMICAL EMERGENCY:** Spill, leak, fire, exposure, or accident call CHEMTREC 1-800-424-9300	

EPA REG. NO.: 66330-328 **EPA EST. NO.:** xxx-xx-xx

AD030705

NET CONTENTS:

MANUFACTURED FOR:
ARYSTA LIFESCIENCE NORTH AMERICA, LLC
15401 Weston Parkway, Suite 150
Cary, NC 27513

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS & DOMESTIC ANIMALS
CAUTION

Harmful if swallowed. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category G on an EPA chemical-resistance category selection chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as Barrier Laminate or Viton ≥ 14 mils
- Shoes plus socks
- Protective eyewear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

User Should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply where runoff is likely to occur. Do not apply where weather conditions favor drift from areas treated. Do not contaminate water when disposing of equipment washwater or rinsate.

The use of this product may pose a hazard to the federally designated endangered species of Solano Grass and Wild Rice. Use of this product is prohibited in the following areas where the species are known to exist:

Solano Grass: Solano County, California: the vernal lakes area bounded by the Union Pacific Railroad and Hastings Road to the north, Highway 113 to the east, Highway 12 to the south, and Travis Air Force Base to the west.

Wild Rice: Hays County, Texas

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame.

DIRECTIONS FOR USE

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

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about Personal Protective Equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves, such as Barrier Laminate or Viton ≥ 14 mils
- Shoes plus socks
- Protective eyewear.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR part 170). The WPS applies when this product is used to produce agricultural plants on farms, forest, nurseries, or greenhouses.

Keep all unprotected persons out of operating areas, or vicinity where there may be drift. Do not enter or allow other persons to enter treated areas without protective clothing until sprays have dried.

CHEMIGATION

May be applied to onions and garlic by sprinkler irrigation systems. Do not apply by chemigation to any other crop, or to this crop using any other type of irrigation system.

GENERAL INFORMATION

This product is for use on the following:
Soybeans, Cotton, Ornamentals, Sugar Beets, Onions (dry bulbs and green), Garlic, Shallots (dry bulbs and green), Alfalfa, Peanuts, Dry Yam (and other Tuberous[1] and Corm[1] Vegetables), Tomatoes, Peppers (bell and non-bell), Eggplant (and other Fruiting Vegetables), Carrot, Radish, Garden Beet, Horseradish (and other Root Vegetables[2]), Leaf Lettuce, Broccoli, Cabbage, Cauliflower (and other Head and Stem Brassica Vegetables[3]), Mustard Greens (and other Leafy Brassica Greens[4]), Spinach, Celery, Rhubarb (and other Leaf Petioles[5]), Cranberry, Strawberry, Squash (including Pumpkins), Cucumber, Melons (including Cantaloupes and Watermelons), Mint, Clover (grown in Idaho, Oregon and Washington only), Conifer Trees, Non-bearing Food Crops, Fallow Land (and other non-producing agricultural areas), and Non-crop or Non-planted areas.

1 Other tuber and corm vegetables approved for use with this product include: arracacha, arrowroot, Chinese artichoke, Jerusalem artichoke, edible burdock, edible canna, bitter and sweet cassava, chayote (root), chufa, dasheen (taro), ginger, leren, tanier, turmeric and bean yam.

2 Other root vegetables approved for use with this product include the following: burdock, edible; celeriac; chervil, turnip-rooted; chicory; ginseng; parsley, turnip-rooted; parsnip; radish, oriental; rutabaga; salsify; salsify, black; salsify, Spanish; skirret and kohlrabi.

3 Other approved head and stem Brassica vegetables approved include: Chinese broccoli; Brussels sprouts; Chinese (napa) cabbage; Chinese mustard; cavalo broccolo ;and kohlrabi.

4 Other leafy Brassica greens approved for use with this product include: broccoli raab, cabbage, Chinese (bok choy); collards; kale, mizuna, mustard greens; mustard spinach; rape greens and turnip greens.

5 Other leaf petiole crops include: cardoon, Chinese celery, celtuce, Florence fennel, and swiss chard.

This product is a selective postemergence herbicide for control of annual and perennial grasses. CLETHODIM 2EC does not control sedges or broadleaf weeds and is not recommended for use on vegetable crops being grown for seed production unless specific instructions are included in this labeling.

Repeated use of CLETHODIM 2EC (or similar postemergence grass herbicides with the same mode of action) may lead to the selection of naturally occurring biotypes that are resistant to these products in some grass species. Biotypes are naturally occurring individuals of a species that are identical in appearance but have slightly different genetic compositions; the mode of action of a herbicide is the chemical interaction that interrupts a biological process necessary for plant growth and development.

If poor performance occurs and cannot be attributed to adverse weather or application conditions, a resistant biotype may be present. Where other control strategies, such as crop rotation, mechanical removal, and other classes of herbicides are not used in fields from year to year, this is most likely to occur.

Contact of this product with desirable grass crops, such as corn, rice, sorghum, small grains, or turf should be avoided as these and other grass crops will be injured or killed. Minor leaf spotting can occur on treated plants under certain environmental conditions. New foliage is not affected.

SYMPTOMS OF CONTROL

The treated grass weeds show a reduction in vigor and growth. Early chlorosis/necrosis of younger plant tissue is followed by a progressive collapse of the remaining foliage. Depending on grass species treated and environmental conditions, symptoms will generally be observed in 7 to 14 days after application.

APPLICATION INFORMATION

Timing

Make application of CLETHODIM 2EC postemergence to actively growing grasses according to the rate table recommendations. Do not make application to grass plants stressed by insufficient moisture or hot or cold temperature. Applications to grass plants exceeding recommended growth stages could result in unsatisfactory control. Do not make applications when this occurs.

When irrigation is used to supplement limited rainfall in arid regions, CLETHODIM 2EC should be applied as soon as possible, after an irrigation (within 7 days). A second application of this product will generally provide more effective control of perennial grass weed than a single application in arid regions. Apply a second application to actively growing grass 2 to 3 weeks after emergence of new growth.

Cultivation of treated grasses 7 days prior to or within 7 days after application of this product could reduce weed control. DO NOT APPLY if rainfall is expected within one hour as control may be reduced.

ADJUVANT OR CROP OIL CONCENTRATE RECOMMENDATIONS

Soybeans, Alfalfa, Dry Bean, Cotton, Peanut, Sugar Beet, Sunflower, Potato: Always use a crop oil concentrate* at 1.0 qt/A by ground or 1% v/v, but not less than 1 pt/A, in the finished spray volume by air. 1-to-2 qts/A liquid fertilizer (10-34-0, 28% N or 32% N) or an equivalent amount of spray grade ammonium sulfate (AMS) (2.5 to 4.0 lbs/A) can be added to CLETHODIM 2EC applications in addition to the recommended rate of crop oil concentrate. The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, red rice, rhizome Johnsongrass, volunteer cereals, volunteer corn and wild oats.

*Crop oil concentrates that are acceptable would be those that contain a minimum of 80% oil and 15% emulsifier. A crop oil concentrate must contain either a petroleum or vegetable oil base and must meet all the following criteria: (a) be non phytotoxic, contain only EPA exempt ingredients, provide good mixing quality and be successful in local experience. Highly refined vegetable oils have proven more satisfactory than unrefined vegetable oils.

Onions (dry bulbs and green), Garlic Shallots (dry bulbs and green), Carrot, Radish, Garden Beet, Horseradish (and other Root Vegetables), Leaf Lettuce, Broccoli, Cabbage, Cauliflower (and other Head and Stem Brassica Vegetables), Mustard Green (and other Leafy Brassica Greens), Spinach, Celery, Rhubarb (and other Leaf Petioles), Cranberry, Sweet Potatoes, Yams (and other tuberous and corm vegetables), Canola, Flax, Mustard Seed, Tomatoes, Peppers (bells and non-bell), Eggplants (and other fruiting vegetables), Strawberry, Squash (including Pumpkins), Cucumber, Melons (including Cantaloupes and Watermelons), Mint and Clover: Unless tank mix instructions indicate otherwise, always use a crop oil concentrate at 1% v/v in the finished spray volume. The addition of a liquid fertilizer is not recommended for these crops.

Ornamental Plants and Non-Bearing Food Crops: Add a nonionic surfactant containing at least 80% active ingredient at the rate of 1 pint per 50 gallons (0.25% v/v). The use of a crop oil concentrate is not recommended as it could injure flowers and foliage.

Conifer Trees, Fallow Land (and other non-producing agricultural areas), Non-Crop or Non-Planted Areas: Always use a crop oil concentrate containing at least 15% emulsifier at 1% v/v, but not less than 1 pt/A, in the finished spray volume.

GROUND APPLICATION

To ensure complete coverage, it is essential to use sufficient spray volumes and pressure. Use a minimum of 5 gals. and a maximum of 40 gallons of spray solution per acre. A minimum of 10 gallons per acre is required under the following conditions: ultra narrow row cotton, narrow row soybeans, broadleaf herbicide tank mixes, perennial grasses, volunteer corn, drought or stress conditions, heavy grass pressure or when grasses are at or near maximum height. Failure to use a minimum of 10 gallons per acre under these conditions can result in poor coverage and reduced grass control requiring repeat application. Spray pressures should reflect a minimum of 30 psi and a maximum of 60 psi at the nozzle. Do not use flood nozzles.

A minimum application of 20 gallons of spray solution per acre should be made to onions (dry bulbs and green), garlic and shallots (dry bulbs and green).

AIR APPLICATION

Use a minimum of 3 gallons of spray solution per acre unless otherwise directed in this label. If grass or crop foliage becomes dense, increase spray volumes up to 10 gallon.

For onions (dry bulbs and green), garlic or shallots (dry bulbs and green): Do not exceed 8 fl oz/A in a single application when applying by air. In California when applying by air to onions, garlic or shallots application should be made in a minimum of 20 gals spray solution per acre.

NOTE: Crop injury can occur when this product is applied to onions, garlic or shallots with aerial equipment.

Spot Treatment

Mix ¼% to ½% (0.33 oz to 0.65 oz per gal) product when using hand sprayers or high volume sprayers utilizing hand guns. While not allowing runoff of spray solution, apply to wet vegetation. For uses requiring crop oil concentrate, include crop oil concentrate at 1% (1.3 oz per gal) by volume. For uses requiring nonionic surfactant, include nonionic surfactant at ¼% (0.33 oz per gal) by volume.

NOTE: If CLETHODIM 2EC is applied as a spot treatment, care should be taken to not exceed the maximum rate allowed on a "per acre" basis or crop injury could occur.

CHEMIGATION – ONIONS (Dry Bulbs and Green) AND GARLIC
SPRINKLER IRRIGATION APPLICATION

DO NOT APPLY THIS PRODUCT BY CHEMIGATION IN THE STATES OF IDAHO, MONTANA, OREGON AND WASHINGTON.

Apply CLETHODIM 2EC at the high rate recommended for annual grasses (16 fl oz per acre) when the grass height is at the low end of the range (application to larger grasses may not provide adequate control). Add a crop oil concentrate containing at least 15% emulsifier at 1 quart per acre.

Make application of CLETHODIM 2EC in 0.1 to 0.2 acre-inch of water, either at the end of a regular irrigation set or as a separate application not associated with a regular irrigation using the least amount of water that provides proper distribution and coverage. Application of more than label recommended quantities of irrigation water per acre may result in decreased product performance by removing the chemical from the zone of effectiveness. Use a metering device to inject the CLETHODIM 2EC into the irrigation water at a constant

flow. Constant agitation must be maintained in the chemical supply tank during the entire period of herbicide application. Inject the product with a positive displacement pump into the main line ahead of a right angle turn to ensure adequate mixing. Allow time for all lines to flush the herbicide through all nozzles before turning off irrigation water. To ensure the lines are flushed and free of remaining herbicide, a dye indicator may be injected into the lines to mark the end of the application period.

General Precautions

Apply this product only through sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move system(s). Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems)used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Sprinkler Chemigation Precautions

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

Chemigation Systems Connected to Public Water Systems
Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regular serves an average of at least 25 individuals daily at least 60 days out of the year.
Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, back flow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap)between the flow outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
Do not apply when wind speed favors drift beyond the area intended for treatment.

RESTRICTIONS AND LIMITATIONS

Tank mixes of CLETHODIM 2EC and broadleaf herbicides may result in reduced grass control. If grass regrowth occurs, an additional application of this product may be necessary.

Always read and follow label directions of all products. Always follow the most restrictive label language for all products whether used alone or in a tank mix. The most restrictive label language of any product used applies in tank mixtures, including all crop rotational and other crop restrictions.

Do not apply if rain is expected within 1 hour of application, as control may be unsatisfactory.

Do not apply a postemergence broadleaf herbicide within one day following application of CLETHODIM 2EC or reduced grass control may result.

Do not apply under conditions of stress. Applying CLETHODIM 2EC under conditions that do not promote active grass growth will reduce herbicide effectiveness. These conditions include, drought, excessive water, low humidity and extremes in temperature, and grasses either partially controlled or stunted from prior pesticide applications. Grasses under these kinds of stressful conditions will not absorb and translocate CLETHODIM 2EC effectively, and will be less susceptible to herbicide activity.

Do not apply more than 8 fl oz/A of CLETHODIM 2EC **per application** to the following crops: garden beets, carrots, radish (and other root vegetables), green onions, leaf lettuce, broccoli, cabbage, cauliflower (and other head and stem Brassica vegetables), celery, rhubarb (and other leaf petioles), cranberry, cucurbits, fruiting vegetables (except tomatoes), non-bearing food crops, flax and strawberry. Do not apply more than 6 fl oz/A of this product **per application** to canola or mustard seed. **Exceeding these recommendations could result in unacceptable crop injury.**

This product is not recommended for use on vegetable crops being grown for seed production unless specific use directions are provided.

Do not apply more than 16 fl oz of CLETHODIM 2EC (0.25 lb/a.i.) per acre per season for canola, clover, flax, mustard seed and radish crops. Do Not apply more than 32 fl oz of CLETHODIM 2EC (0.50 lb/a.i.) per acre

per season for all other crops. Application on Long Island, New York is restricted to no more than 16 fl oz of CLETHODIM 2EC (0.25 lb/a.i.) per acre per season.

While all the vegetable crops on this label have been tested and are tolerant to CLETHODIM 2EC, not all specialty varieties of these crops have been tested. Before applying CLETHODIM 2EC to specialty varieties of vegetable crops on this label, it is advised that crop tolerance be investigated first using a small section of the field. It is possible that injury symptoms can occur. Symptoms may appear as leaf speckling or stunting.

Optimal perennial grass control can be obtained if rhizomes or stolons are cut up by preplant tillage practices (disking, plowing, etc.) to stimulate maximum emergence of grass shoots. Cultural practices, such as continuous no-tillage in which the perennial grass rhizomes or stolons are not cut up, result in a very staggered, non-uniform weed emergence. No fewer than two (2) CLETHODIM 2EC applications per season per year are recommended at the appropriate weed-growth stage rate under continuous no-till conditions, due to this non-uniform weed emergence.

Grass crops such as corn, rice, sorghum, small grains, or turf, etc. are highly sensitive to CLETHODIM 2EC.

SPRAY DRIFT MANAGEMENT

The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making application decisions.

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR

IMPORTANCE OF DROPLET SIZE

The most effective way to reduce drift potential is to apply large droplets (>150 - 200 microns). The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. APPLYING LARGER DROPLETS REDUCES DRIFT POTENTIAL, BUT WILL NOT PREVENT DRIFT IF APPLICATIONS ARE MADE IMPROPERLY OR UNDER UNFAVORABLE ENVIRONMENTAL CONDITIONS!

See Wind, Temperature and Humidity, and Temperature Inversions sections of this label.

CONTROLLING DROPLET SIZE - GENERAL TECHNIQUES

Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

Pressure - Use the lower spray pressures recommended for nozzle. Higher pressure reduces droplet size and does not improve canopy penetration.

WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.

Nozzle Type - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles.

CONTROLLING DROPLET SIZE - AIRCRAFT

Number of Nozzles – Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.

Nozzle Orientation - Orienting nozzles so that the spray is emitted backwards, parallel to the airstream will produce larger droplets than other orientations.

Nozzle Type - Solid stream nozzles (such as disc and core with swirl plate removed) oriented straight back produce larger droplets than other nozzle types.

Boom Length - The boom length should not exceed 3/4 of the wing or rotor length – longer booms increase drift potential.

Application Height - Application more than 10 ft above the canopy increases the potential for spray drift.

BOOM HEIGHT

Setting the boom at the lowest labeled height (if specified), which provides uniform coverage reduces the exposure of droplets to evaporation and wind. For ground equipment, the boom should remain level with the crop and have minimal bounce.

WIND

Drift potential increases at wind speeds of less than 3 mph (due to inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. AVOID GUSTY OR WINDLESS CONDITIONS.

Note: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption.

RECOMMENDED USE RATES/RESTRICTIONS/LIMITATIONS

CROPS[1]	MINIMUM TIME FROM APPLICATION TO HARVEST (PHI)	USE RATES PER ACRE	CROP OIL CONCENTRATE RATES PER ACRE[2]	SPECIAL USE INSTRUCTIONS
Alfalfa including: **Sainfoin** **Holy Clover** **Birdsfoot trefoil** [3]	15 days before grazing, feeding or harvesting (cutting) for forage or hay	6 – 16 fl oz[4]	1 qt. By ground or 1% v/v ,but not less than 1 pt/A, by air [5]	Do not plant rotational crops until 30 days after application of CLETHODIM 2EC[6]. Adding AMS has shown improved grass control for difficult to control species including: quackgrass, red rice, rhizome Johnsongrass, volunteer cereals, volunteer corn and wild oats
Beans, Dry	30 days	6 – 16 fl. oz	1 qt. By ground or 1% v/v ,but not less than 1 pt/A, by air[5]	For reduced rate recommendations for the control of small annual grasses, refer to the appropriate Table. Adding AMS has shown improved grass control for difficult to control species including; quackgrass, red rice, rhizome Johnsongrass, volunteer cereals, volunteer corn and wild oats.
Beets, Garden	30 days	6 – 8 fl oz	1% v/v in the finished spray volume	Do not apply more than 8 fl oz/A in a single application. A minimum 14-day interval required for repeat applications.
Carrot	30 days	6 – 8 fl oz	1% v/v in the finished spray volume	Do not apply more than 8 fl oz/A in a single application. A minimum 14-day interval required for repeat applications.
Canola	70 days	4 – 6 fl oz	1% v/v in the finished spray volume	Do not apply after crop has begun bolting. Do not exceed 16 fl oz/A in a season. Crop injury could occur when this product is applied during the bloom period
Celery including: **Cardoon** **Chinese celery** **Celtuce** **Florence fennel**	30 days	6 – 8 fl oz	1% v/v in the finished spray volume	Do not apply more than 8 fl oz/A in a single application. A minimum 14-day interval required for repeat applications.

Swiss chard				
Clover	15 days before grazing, feeding, or harvesting (cutting) for forage or hay	6 – 16 fl oz	1% v/v in the finished spray volume	Do not exceed 16 fl oz/A in a season. **For use on clover grown in the states of Idaho, Oregon and Washington only.**
Cotton	60 days	6 – 16 fl oz	1 qt. by ground or 1% v/v ,but not less than 1 pt/A, by air [(5)]	Do not graze treated fields or feed treated forage or hay to livestock. Adding AMS has shown improved grass control for difficult to control species including; quackgrass, red rice, rhizome Johnsongrass, volunteer cereals, volunteer corn and wild oats.
Cranberry	30 days	6 – 8 fl oz	1% v/v in the finished spray volume	Do not apply more than 8 fl oz/A in a single application. Do not apply between the "hook" stage and full fruit set. A minimum 14-day interval required for repeat applications.
Cucurbits, including: **Cantaloupes (all)** **Cucumber** **Gherkin** **Honeydew Melon** **Muskmelons (all)** **Pumpkins** **Squash (all)** **Watermelon**	14 days	6 – 8 fl oz	1% v/v in the finished spray volume	Do not apply more than 8 fl oz/A in a single application. A minimum 14-day interval required for repeat applications.
Fallow Land **Conifer Trees (and other non-producing agricultural areas)** **Non-Crop or Non-Planted areas**	N/A	6 – 16 fl oz	1% v/v, but not less than 1 pt/A, in the finished spray volume using a crop oil concentrate containing at least 15% emulsifier.	Do not plant any crop for 30 days following application unless clethodim is registered for use on that crop
Flax	60 days	6 – 8 fl oz	1% v/v in the finished spray volume	Do not exceed 16 fl oz in a season Make application prior to bloom. If applied during bloom, crop injury could occur.
Fruiting Vegetables (except Tomato) including: **Eggplant**	20 days	6 – 8 fl oz	1% v/v in the finished spray volume	Do not apply more than 8 fl oz/A in a single application. A minimum 14-day interval

Groundcherry **Pepino** **Peppers (all)** **Tomatillo**				required for repeat applications.
Head & Stem Brassica Vegetables, including: **Broccoli** **Cabbage** **Cauliflower** **Brussels Sprouts**	30 days	6 – 8 fl oz	1% v/v in the finished spray volume	Do not apply more than 8 fl oz/A in a single application. A minimum 14-day interval required for repeat applications.
Leafy Brassica Greens, including: **Broccoli Raab** **Cabbage,** **Chinese (Bok Choy)** **Collards** **Kale** **Mizuna** **Mustard Greens** **Mustard Spinach** **Rape Greens** **Turnip Greens**	14 days	6 – 8 fl oz	1% v/v in the finished spray volume	Do not apply more than 8 fl oz/A in a single application. A minimum 14-day interval required for repeat applications.
Leaf Lettuce	14 days	6 – 8 fl oz	1% v/v in the finished spray volume	Do not apply more than 8 fl oz/A in a single application. A minimum 14-day interval required for repeat applications.
Mint	21 days	6 – 16 fl oz[4]	1 qt by ground or 1% v/v, but not less than 1 pt/A, by air	Do not apply more than 16 fl oz/A in a single application. A minimum 14-day interval required for repeat applications.
Mustard Seed	75 days	4 – 6 fl oz	1% v/v in the finished spray volume	Do not apply more than 16 fl oz in a season. Do not apply after crop has begun bolting. If applied during the bloom period, crop injury could occur.
Onions (Dry Bulbs Only) **Garlic** **Shallots (Dry Bulbs Only)**	45 days	6 – 16 fl oz[7] [8]	1% v/v in the finished spray volume	Minimum 20 gals/A spray volume by ground in entire U.S. Minimum 20 gals/A spray volume by air in California[9] States Other than California: Application by air to onions, garlic or shallots should be made in a minimum of 10 gals/A
Onions, Green,	14 days	6 – 8 fl oz	1% v/v in the	Do not apply more than 8 fl oz/A

including: **Leeks** **Scallions or Spring Onions** **Japanese Bunching Onions** **Green Shallots** **Green Eschalots**			finished spray volume	in a single application. A minimum 14-day interval required for repeat applications.
Ornamentals	N/A	6 – 16 fl oz	Use of crop oil concentrate is not recommended as injury to flower and foliage may occur. See Special Use Instructions	Add a nonionic surfactant containing at least 80% active ingredient at the rate of 1 pt per 50 gallons (0.25% v/v.) Sugar Maples cannot be tapped for syrup within one year of application.
Non-Bearing Food Crops	N/A	6 – 8 fl oz[8]		
Peanut	40 days	6 – 16 fl oz	1 qt by ground or 1% v/v, but not less than 1 pt/A, by air[5]	Adding AMS has shown improved grass control for difficult to control species including; quackgrass, red rice, rhizome Johnsongrass, volunteer cereals, volunteer corn and wild oats.
Potato	30 days	6 – 16 fl oz	1 qt by ground or 1% v/v, but not less than 1 pt/A, by air[5]	Adding AMS has shown improved grass control for difficult to control species including; quackgrass, red rice, rhizome Johnsongrass, volunteer cereals, volunteer corn and wild oats.
Radish	15 days	6 – 8 fl oz	1% v/v in the finished spray volume	Do not apply more than 8 fl oz/A in a single application. Do not apply more than 16 fl oz (0.25 lb/a.i) per acre in a season. A minimum 14-day interval required for repeat applications.
Root Vegetables (except Radish), including: **Chicory** **Ginseng** **Horseradish** **Turnip**	30 days	6 – 8 fl oz	1% v/v in the finished spray volume	Do not apply more than 8 fl oz/A in a single application. A minimum 14-day interval required for repeat applications.
Rhubarb	30 days	6 – 8 fl oz	1% v/v in the finished spray volume	Do not apply more than 8 fl oz/A in a single application. A minimum 14-day interval required for repeat applications.
Soybean	60 days	6 – 16 fl oz	1 qt by ground or 1% v/v (but not less	Do not graze treated fields or feed treated forage or hay to

			than 1 pt/A) by air[5]	livestock. Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses. Adding AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, volunteer cereals, volunteer corn and wild oats.
Spinach	14 days	6 – 8 fl oz	1% v/v in the finished spray volume	Do not apply more than 8 fl oz/A in a single application. A minimum 14-day interval required for repeat applications.
Strawberry	4 days	6 – 8 fl oz	1% v/v in the finished spray volume	Do not apply more than 8 fl oz/A in a single application. A minimum 14-day interval required for repeat applications.
Sugar Beet	40 days	6 – 16 fl oz	1 qt by ground or 1% v/v, but not less than 1 pt/A, by air[5]	Refer to the appropriate Table for reduced rate recommendations for the control of small annual grasses. Adding AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, volunteer cereals, volunteer corn and wild oats.
Sunflower	70 days	6 – 16 fl oz	1 qt by ground or 1% v/v, but not less than 1 pt/A, by air[5]	Adding AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, volunteer cereals, volunteer corn and wild oats.
Sweet Potato, Yam and other tuberous and corm vegetables (except Potato), including: **Artichoke** **Chinese Jerusalem** **Cassava, bitter, sweet**	30 days	6 – 16 fl oz	1% v/v in the finished spray volume	Adding AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, volunteer cereals, volunteer corn and wild oats.

Ginger				
Tomato	20 days	6-16 fl oz	1% v/v in the finished spray volume	--

N/A – Not Applicable

(1) CLETHODIM 2EC is not recommended for use on vegetable crops being grown for seed production unless specific use directions are provided.

(2) Acceptable crop oil concentrates would be those that contain a minimum of 80% oils and 15% emulsifier. The crop oil concentration must contain either a petroleum or vegetable oil base and meet all the following criteria: a) contain only EPA-exempt ingredients, b) be non-phytotoxic, c) provide good mixing quality and d) be successful in local experience. Highly refined vegetable oils have proven more satisfactory than unrefined vegetable oil. For further information see the "Addition of Adjuvant and Crop Oil Concentrate" section.

(3) This product can be applied to seedling or established alfalfa grown for seed, hay, silage, green chop or direct grazing.

(4) The minimum use rate is 10 fl oz/A for weed control in established alfalfa and mint.

(5) In addition to the recommended rate of crop oil concentrate, 1 to 2 qts/A of liquid fertilizer (10-34-0, 28% N or 32% N), or an equivalent amount (2.5 to 4.0 lbs/A) of spray grade ammonium sulfate (AMS) may be added to the CLETHODIM 2EC application.

(6) Do not apply CLETHODIM 2EC and 2,4-DB as a tank mix to alfalfa unless the 60 day feeding, grazing, and harvesting restriction on the 2,4-DB label can be observed.

(7) Do not exceed 8 fl oz/A in a single application for ground applications to garlic or shallots.
Do not exceed 8 fl oz/A in a single application for air applications to onion, garlic or shallots.
Do not exceed 2 applications per season for garlic and shallots.
In CA, do not exceed 2 applications per season for air applications to onions.

(8) Care should be taken to not exceed the maximum rate allowed on a "per acre" basis when CLETHODIM 2EC is applied as a spot treatment to onions, garlic, shallots, or non-bearing food crops or crop injury could occur.

(9) In CA, do not apply this product to onions, garlic, or shallots until the crop has at least two full leaves.
In CA, 14-day spray intervals are recommended between the application of this product and liquid nitrogen or other herbicide applications. Injury to crop could occur when shorter intervals are observed.

DIRECTIONS FOR USE IN SOYBEANS, COTTON, SUGAR BEETS, ONIONS (Dry Bulbs and Green), GARLIC, SHALLOTS (Dry Bulbs and Green), ALFALFA, PEANUTS, DRY BEANS, SUNFLOWER, CANOLA, FLAX, MUSTARD SEED, POTATO, SWEET POTATO, YAM (and other Tuberous[1] and Corm[1] Vegetables), TOMATOES, PEPPERS (bell and non-bell), EGGPLANTS (and other Fruiting Vegetables), CARROT, RADISH, GARDEN BEET, HORSERADISH (and other Root Vegetables[2]), LEAF LETTUCE, BROCCOLI, CABBAGE, CAULIFLOWER (and other head and Stem Brassica Vegetables[3]), MUSTARD GREENS (and other Leafy Brassica Greens[4]), SPINACH, CELERY, RHUBARB (and other Leaf Petioles[5]), CRANBERRY, STRAWBERRY, SQUASH (including PUMPKINS), CUCUMBER, MELONS (including CANTALOUPES and WATERMELONS), MINT, and CLOVER (grown in Idaho, Oregon and Washington only), CONIFER TREES, NON-BEARING FOOD CROPS, AND NON-CROP OR NON PLANTED AREAS.

1 Other tuber and corm vegetables approved for use with CLETHODIM 2EC include: arracacha, arrowroot, Chinese artichoke, Jerusalem artichoke, edible burdock, edible canna, bitter and sweet cassava, chayote (root), chufa, dasheen (taro), ginger, leren, tanier, tumeric and bean yam.

2 Other root vegetables approved for use with this product include: burdock, edible; celeriac; chervil, turnip-rooted; chicory; ginseng; parsley, turnip-rooted; parsnip; radish, oriental; rutabaga; salsify; salsify, black; salsify, Spanish; skirret and turnip.

3 Other head and stem Brassica vegetables approved include: Chinese broccoli; Brussels sprouts; Chinese (napa) cabbage; Chinese mustard, cavalo broccolo; and Kohlrabi.

4 Other leafy Brassica greens approved for use include: broccoli raab, cabbage, Chinese (bok choy); collards; kale, mizuna, mustard greens; mustard spinach; rape greens and turnip greens.

5 Other leaf petiole crops include: cardoon, Chinese celery, celtuce, Florence fennel, and Swiss chard.

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ATTENTION

Plant tolerance to CLETHODIM 2EC at labeled rates has been found to be acceptable for the indicated genera and species listed below. Due to variability within species, crop growth stage, environmental conditions, and application techniques, it is recommended that the user determine if the herbicide can be used safely on a few plants prior to widespread application. Neither the seller nor the manufacturer of CLETHODIM 2EC have investigated the safety factor to plants not listed on this label.

NON-BEARING FOOD CROPS

DO NOT APPLY CLETHODIM 2EC TO NON-BEARING FRUIT OR NUT CROPS GROWN FOR ROOT STOCK.

If CLETHODIM 2EC is improperly applied, crop injury to non-bearing fruit and nut crops can occur. Do not apply CLETHODIM 2EC directly over the top of these plant types. Rather, direct the spray at the base of the plant where grassy weeds are growing near the ground.

Non-bearing fruit and nut crops are plants, which will not bear fruit or nuts for at least one year following an application of CLETHODIM 2EC.

COMMON NAME	SCIENTIFIC NAME
Apples	*Malus* spp.
Berries	*Vaccinium* spp.
	Rubus spp.
Cherry, Sweet	*Prunus avium*
Citrus Fruits	*Citrus* spp.
Grapes	*Vitis* spp.
Olives	*Olea* spp.
Peach	*Prunus persica*
Pears	*Pyrus communis*
Prunes	*Prunus* spp.
Stone Fruits	*Prunus* spp.
Strawberries	*Fragaria* spp.
Tree Nuts	
Almond	*Prunus triloba*
Filbert	*Corylus maxima*
Pecan	*Carya illinoinensis*
Pistachio	*Pistacia vera*
Walnut	*Juglans* spp.

CONIFER TREES

CLETHODIM 2EC can be used to control labeled grasses in Christmas tree farms, conifer nurseries, and conifer plantations but not in forests.

COMMON NAME	SCIENTIFIC NAME
Arborvitae, American	*Thuja occidentalis*
Cedars	*Cedrus* spp.
Cypress	*Taxodium* spp.
Fir, Douglas	*Pseudotsuga menziesii*
Firs	*Abies* spp.
Hemlock, Canadian/Eastern	*Tsuga Canadensis*
Hemlock, Western	*Tsuga heterophylia*
Pines	*Pinus* spp.
Spruces	*Picea* spp.
Yew	*Taxus* spp.

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NON-CROP OR NON-PLANTED AREAS

The following areas are considered non-crop or non-planted areas:
Rights-of-way, including railroads, highways, roads, dividers, medians, pipelines, public utility lines, pumping stations, transformer stations and substations; around airports; electric utilities; commercial buildings; manufacturing plants; storage yards; rail yards; fence lines; parkways; post-harvest croplands; and beneath greenhouse benches and around golf courses.

RECOMMENATIONS FOR ANNUAL GRASSES (EXCEPT FOR IN ESTABLISHED ALFALFA AND MINT)

- Make application to actively growing grasses at recommended weed heights.
- Make application when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Use the higher rate under heavy grass pressure and/or when grasses are at maximum heights.
- Do Not apply more than 8 fl oz/A per application to the following crops:
  Garden beets, carrots, radish (and other root vegetables), green onions, leaf lettuce, broccoli, cabbage, cauliflower (and other head and stem Brassica vegetables), mustard greens (and other leafy Brassica greens), spinach, celery, rhubarb (and other leaf petioles), cranberry, cucurbits, fruiting vegetables (except tomatoes), non-bearing food crops, flax and strawberry.
- Do Not apply more than 6 fl oz/A of product per application to canola or mustard seed.

GRASS SPECIES	SCIENTIFIC NAME	WEED HEIGHT* (inches)	RATE FL OZ/ ACRE	HIGH RATE(4)
Barnyardgrass	*Echinochloa crus-galli*	2 to 8	6	8
Broadleaf Signalgrass	*Brachiaria platyphylla*	2 to 6	6	8
Brome				
California	*Bromus carinatus*	2 to 6	6	8
Cheat	*Bromus secalinus*	2 to 6	6	8
Downy	*Bromus tectorum*	2 to 6	6	8
Ripgut	*Bromus diandrus*	2 to 6	6	8
Canarygrass	*Phalaris canariensis*	1 to 4	6	8
Crabgrass				
Hairy	*Digitaria adscendens*	2 to 6**	6	8
Large	*Digitaria sanguinalis*	2 to 6**	6	8
Smooth	*Digitaria ischaemum*	2 to 6**	6	8
Southern	*Digitaria ciliaris*	2 to 6**	6	8
Crowfootgrass	*Dactyloctenium aegyptium*	2 to 6**	6	8
Fall Panicum	*Panicum dichotomiflorum*	2 to 8	6	8
Field Sandbur	*Cenchrus incertus*	2 to 6	6	8
Foxtail				
Giant	*Setaria faberi*	2 to 12	6	8
Green	*Setaria viridis*	2 to 8	6	8
Yellow	*Setaria glauc*	2 to 8	6	8
Goosegrass	*Eleusine indica*	2 to 6**	6	8
Itchgrass	*Rottboellia cochinchinensis*	2 to 6	6	8
Junglerice	*Echinochloa colona*	2 to 6	6	8
Lovegrass (Stinkgrass)	*Eragrostis cilianensis*	2 to 6	6	8
Rabbitsfootgrass	*Polypogon monspeliensis*	1 to 4	6	8
Red Rice	*Oryza sativa*	1 to 3	6	8
Ryegrass				
Hardy	*Lolium remotum*	2 to 6	6	8
Italian	*Lolium multiflorum*	2 to 6	6	8
Seedling Johnsongrass	*Sorghum halepense*	4 to 10	6	8
Shattercane	*Sorghum bicolor*	6 to 18	6	8
Southwestern Cupgrass	*Eriochloa gracilis*	2 to 6	6	8
Sprangle top				
Amazon	*Leptochloa panicoides*	2 to 6	6	8
Bearded	*Leptochloa fascicularis*	2 to 6	6	8

Mexican	*Leptochloa uninervia*	2 to 6	6	8
Red	*Leptochloa filiformis*	2 to 6	6	8
Texas Panicum	*Panicum texanum*	2 to 6	6	8
Volunteer Cereals(3)				
Barley	*Hordeum vulgare*	2 to 6	6	8
Oats	*Avena sativa*	2 to 6	6	8
Rye	*Secale cereale*	2 to 6	6	8
Wheat	*Triticum aestivum*	2 to 6	6	8
Volunteer Corn(2)	*Zea mays*	4 to 12	4	6
Volunteer Corn (S.R.)(1)	*Zea mays*	4 to 12	8 (suppression only)	
Volunteer Corn(2)	*Zea mays*	12 to 24	6	8
Volunteer Grain Sorghum	*Sorghum bicolor*	8 to 12	6	8
Wild Oats	*Avena fatua*	2 to 6	6	8
Wild Proso Millet	*Panicum miliaceum*	2 to 10	6	8
Witchgrass	*Panicum capillare*	2 to 8	6	8
Woolly Cupgrass	*Eriochloa villosa*	2 to 8	6	8

* Generally occurs between 3-leaf stage and tillering.

** Length of lateral growth.

(1) Sethoxydim resistant volunteer corn.

(2) Includes Roundup Ready®, Liberty Link®, and IMI-CORN® volunteer corn

(3) The minimum CLETHODIM 2EC use rate for control when a cereal grain crop (such as wheat) is interseeded for crop establishment or is planted as wind breaks to aid crop establishment is 8 fl oz/A.

(4) Where experience has shown that higher rates are needed for satisfactory control of annual grasses, rates higher than 8 fl oz/A may be applied in certain geographic areas, cropping situations, or environmental conditions. In these situations, rates from 8 to16 fl oz/A can be applied. Do not apply more than 8 fl oz/A of CLETHODIM 2EC per application to the following crops:

Garden beets, carrots, radish (and other root vegetables), green onions, leaf lettuce, broccoli, cabbage, cauliflower (and other head and stem Brassica vegetables), celery, rhubarb (and other leaf petioles), cranberry, cucurbits, fruiting vegetables (except tomatoes), non-bearing food crops, flax and strawberry.

Do not apply more than 6 fl oz/A of product per application to canola or mustard seed.

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RECOMMENDATIONS FOR ANNUAL & PERENNIAL GRASS CONTROL IN ESTABLISHED ALFALFA AND MINT WITH CLETHODIM 2EC

GRASS SPECIES	WEED STAGE	RATE FL OZ/ ACRE	HIGH RATE
Annual & perennial Grasses Listed in Grass Table	See Table	10	16

Mowing: Achieving the best control of annual grasses can be made by applying CLETHODIM 2EC before grass weeds are mowed. Once grass is mowed it becomes tougher to control, as much of the available leaf surface has been removed. In areas without a killing frost, some annuals can over-winter after having been mowed multiple times. These grasses form large crowns and may contain many viable buds. Even though these grasses may be an annual grass, they may require repeated application of CLETHODIM 2EC for partial or complete control.

Irrigated Alfalfa and Mint: Irrigation practices can be very critical to the successful use of CLETHODIM 2EC in established alfalfa and mint and may be necessary to initiate active growth of the weeds prior to application. Generally applications 2 to 4 days after an irrigation are most effective. Irrigation made shortly after application (2 days) can be effective, but more consistent grass control occurs when the irrigation is made before the application.

Aerial Application: When applying by air in established alfalfa and mint, apply CLETHODIM 2EC in a minimum of 10 GPA.

Annual Grass Control: Make application at the grass sizes indicated in the Recommendation for Annual Grass Table and rates indicate. If a grass has been cut, make application after active growth has resumed and regrowth has reached the minimum height and before it reaches the maximum height indicated. Make application before the alfalfa/mint canopy covers the grasses and interferes with the spray coverage. Some annual grasses are spring-and summer-germinating plants, while others are fall-germinating plants, and the time they are actively growing and most susceptible to CLETHODIM 2EC may vary from region to region. In addition, some annuals germinate over an extended period of time and because control of small grasses is desired, application after each weed flush may be required. As a general rule spray spring and summer-germinating grasses as early in the season as possible, after initial green-up. Spray fall-germinating weeds in the fall soon after they begin growing but before any damage is done due to frost. Late fall applications may be less effective due to environmental conditions, such as frost, slower plant growth, or the onset of flowering.

Perennial Grass Control: CLETHODIM 2EC effectively controls perennial grasses, such as Bermudagrass, Johnsongrass, quackgrass, wirestem muhly, tall fescue, foxtail barley and orchardgrass. Due in part to lack of tillage, perennial grasses are more difficult to control in a perennial crop, such as established alfalfa or mint. A program of repeated applications is usually necessary for best results. The best way to control perennial grasses is to do so in the year of stand establishment before rhizomes and stolons become large and difficult to kill.

Use the high rate under heavy grass pressure and/or when grasses are at or near maximum height.

Always add a crop oil concentrate at 1 qt/A by ground or 1% v/v, but not less than 1 pt/A, to the finished spray volume by air.

RECOMMENDATIONS FOR ANNUAL BLUEGRASS CONTROL WITH CLETHODIM 2EC

GRASS SPECIES	WEED STAGE	RATE FL/OZ ACRE	HIGH RATE
Annual Bluegrass (Poa annua)	to 4-leaf	6*	16

Apply under favorable soil moisture and humidity, which exists within a few days after rainfall or within 7 days after irrigation. Grass needs to be actively growing at time of application(s).

Apply at weed stage indicated on the label, as reduced control can be expected with more mature annual bluegrass.

Use the high rate under heavy grass pressure and/or when annual bluegrass is more mature.
Always add a crop oil concentrate at 1 qt/A by ground to the finished spray volume.

*Use a minimum of 10 ft oz/A to control annual bluegrass in seedling and established alfalfa and mint.

DIRECTIONS FOR REDUCED RATE USE IN DRY BEAN, CANOLA, FLAX, MUSTARD SEED, SOYBEAN AND SUGAR BEET

RECOMMENDATIONS FOR SMALL ANNUAL GRASSES
(REDUCED RATE RECOMMENDATIONS NOT FOR USE IN CALIFORNIA)

- Make application only to actively growing grasses and the recommended weed heights.
- Make application when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Regrowth by tillering may occur if application is made when plants are stressed by lack of moisture, excessive moisture, low or high temperatures and/or under very low humidity.

GRASS SPECIES	*SCIENTIFIC NAME*	WEED HEIGHT (Inches)	RATE FL OZ/ ACRE[1]
Barnyardgrass	*Echinochloa crus-galli*	1 to 4	4
Broadleaf Signalgrass	*Brachiaria platyphylla*	1 to 4	5
Crabgrass			
Large	*Digitaria sanguinalis*	1 to 3*	4
Large	*Digitaria sanguinalis*	1 to 4*	5
Smooth	*Digitaria ischaemum*	1 to 3*	4
Smooth	*Digitaria ischaemum*	1 to 4*	5
Southern	*Digitaria ciliaris*	1 to 4*	5
Fall Panicum	*Panicum dichotomiflorum*	1 to 4	4
Foxtail			
Giant	*Setaria faberi*	1 to 4	4
Green	*Setaria viridis*	1 to 4	4
Millet	*Setaria italica*	1 to 4	5
Yellow	*Setaria glauca*	1 to 4	4
Seedling Johnsongrass	*Sorghum halepense*	1 to 6	5
Shattercane	*Sorghum bicolor*	4 to 10	4
Texas Panicum	*Panicum texanum*	1 to 4	5
Volunteer Cereals			
Barley	*Hordeum vulgare*	1 to 4	5
Oats	*Avena sativa*	1 to 4	5
Wheat	*Triticum aestivum*	1 to 4	5
Wild Proso Millet	*Panicum miliaceum*	1 to 6	4
Wild Oats	*Avena fatua*	1 to 4	5

*Length of lateral growth
1 Always add a crop oil concentrate at 1 qt./A by ground application to the finished spray volume.

RECOMMENDATIONS FOR PERENNIAL GRASSES

- Make application only to actively growing grasses at the recommended weed heights. Make application when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Use the higher rate under heavy grass pressure and/or when grasses are at maximum height. Do not apply more than 8 fl oz/A of CLETHODIM 2EC per application to the following crops: Garden beets, carrots, radish (and other root vegetables), green onions, leaf lettuce, broccoli, cabbage, cauliflower (and other head and stem Brassica vegetables), celery, rhubarb (and other leaf petioles), cranberry, cucurbits, fruiting vegetables (except tomatoes), non-bearing food crops, flax and strawberry. Do not apply more than 6 fl oz/A of product per application to canola or mustard seed.

GRASS SPECIES	WEED HEIGHT (inches)	RATE FL OZ/ ACRE	HIGH RATE
Bermudagrass *(Cynodon dactylon)*			
First Application	3 (or up to 6" runners)	8	16
Repeat Application(s) (if regrowth occurs)	3 (or up to 6" runners)	8	16
Fescue, Tall *(Festuca arundinacea)*			

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First Application	4 to 8	8	16
Repeat Application(s) if regrowth occurs)	4 to 8	8	16
Foxtail Barley *(Hordeum jubatum)*			
First Application	2 to 6	8	16
Repeat Application(s) (if regrowth occurs)	2 to 6	8	16
Orchardgrass *(Dactylis glomerata)*			
First Application	4 to 8	8	16
Repeat Application(s) (if regrowth occurs)	4 to 8	8	16
Quackgrass* *(Elytrigia repens)*			
First Application	4 to 12	8	16
Repeat Application(s) (if regrowth occurs)	4 to 12	8	16
Rhizome Johnsongrass *(Sorghum halepense)*			
First Application	12 to 24	8	16
Repeat Application(s) (if regrowth occurs)	6 to 18	6	8
Wirestem Muhly *(Muhlenbergia frondosa)*			
First Application	4 to 8	8	16
Repeat Application(s) (if regrowth occurs)	4 to 8	8	16
Perennial Bluegrass*			
Roughstalk *(Poa trivialis)*			
Kentucky *(Poa prantensis)*			
First Application	2 to 4	8	16
Repeat Application(s) (if regrowth occurs)	2 to 4	8	16
Bentgrass* *(Agrostis* spp.*)*			
First Application	2 to 4	-	16
Repeat Application(s) (if regrowth occurs)	2 to 4	-	16

*Control of quackgrass, perennial bluegrass and bentgrass with this product may be enhanced by adding AMS at 2.5 to 4.0 lbs/A.

TANK MIXES

GENERAL INFORMATION

The labels for each of the herbicides recommended for tank mixing with CLETHODIM 2EC are unique to the characteristics of those products and contain restrictions and limitations that may be more restrictive than CLETHODIM 2EC in certain considerations. Those concerns may include, but are not limited to:

- Geographic restrictions – all products are not registered for use in all areas and rates may vary from one region of labeled use to another
- Crop rotation restrictions may differ
- Applicator certification requirements
- Worker safety rules, i.e., personal protective equipment (PPE), reentry time, posting
- Soil characteristics or soil type, e.g. pH, OM
- Number of applications and or maximum dosage per season
- Rain free period required – or
- Application timing, e.g. pre-harvest interval
- Total season rates not to be exceeded.

ALWAYS FOLLOW THE MOST RESTICTIVE LABELING OF ANY PRODUCT USED IN A TANK MIX.

TANK MIX APPLICATION OF CLETHODIM 2EC AND BROADLEAF HERBICIDES FOR CONTROL OF GRASSES AND BROADLEAF WEEDS

- Make application only to actively growing grass and broadleaf weeds at recommended height or growth stage listed on each label.
- Make application when the first grass or broadleaf weed species in a mixed population reaches the recommended height or growth stage for treatment.
- Make application under favorable soil moisture and humidity that exist a few days after rainfall or within seven (7) days after irrigation.

- Always add the appropriate adjuvant to the spray mix at the rate recommended for each specific tank mix combination.
- Tank mix application can sometimes result in reduced grass control and possible increases in crop injury as compared to either product used alone. If regrowth occurs or an additional flush of new grass emerges, apply a second application of CLETHODIM 2EC as specified in the respective size and rate tables.
- Do Not tank mix CLETHODIM 2EC when broadleaf weeds are tall and/or dense enough to prevent proper grass coverage.

MIXING INSTRUCTIONS

1. Fill clean spray tank 1/2 to 2/3 of desired level with clean water. While agitating, add the correct amount of CLETHODIM 2EC, making sure that agitation makes a rippling or rolling action on the water surface.
2. When tank mixing this product with other labeled herbicides, add water-soluble bags first, followed by dry formulations, flowables, emulsifiable concentrates and then solutions. Prepare no more spray mixture than is required for the immediate spray operation.
3. Add any required adjuvants (crop oil concentrate, nonionic surfactant and/or nitrogen solution.).
4. Fill spray tank to desired level with water.

Continue agitation until all spray solution has been applied.
Failure to agitate the spray solution may result in improper mixing of the herbicides and unsatisfactory weed control. Verify mixing and compatibility qualities by conducting a jar test.

ANTAGONISM INFORMATION
Tank mixes of CLETHODIM 2EC with postemergence broadleaf herbicides have shown some reduction or failure to control certain grass species, which would have otherwise been control by CLETHODIM 2EC alone. Activity of the postemergence broadleaf herbicide in the tank mix is not affected.

ALFALFA
Table 1. CLETHODIM 2EC TANK MIXES WITH BROADLEAF HERBICIDES FOR ALFALFA
NOTE: See recommendation tables above for specific grasses and growth stages

PRODUCT[2]	APPLICATION RATES/ACRE[1]			
	ANNUAL GRASSES	PERENNIAL GRASSES	CROP OIL CONCENTRATE[3]	
			GROUND	AIR
CLETHODIM 2EC + 2,4-DB[4]	10 – 16 fl oz + See 2,4-DB label	10 – 16 fl oz + See 2,4-DB label	1%	1%
CLETHODIM 2EC + PURSUIT DG[5] OR PURSUIT[5]	10 – 16 FL oz + 1.08 – 2.16 oz OR 3 TO 6 FL oz	-	1%	1%
CLETHODIM 2EC + BUCTRIL® 2L[6] OR BUCTRIL GEL[6,7]	10 – 16 fl oz + 1.0 – 1.5 pts or 0.5 – 0.75 pt	-	0.5%	0.5%

1 If grass regrowth occurs or an additional flush of new grass emerges, apply a second application of CLETHODIM 2EC alone – without a tank mix herbicide, according to the appropriate size and rate recommendation.

2 Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank Mixing is not recommended in these situations

3 Always use a crop oil concentrate at the listed rate (but not less than 1 pt/A) in the finished spray volume.

4 CLETHODIM 2EC plus 2,4-DB may increase the severity of crop injury when tank mixed. Alfalfa plants will generally outgrow this temporary crop injury within a few weeks.

5 Before using this tank mix, read and understand the PURSUIT or PURSUIT DG labels for geographical restrictions and restrictions regarding alfalfa growth stage and type. Failure to do so can result in crop injury to alfalfa. DO NOT feed, graze or harvest alfalfa for 30 days following an application of PURSUIT to alfalfa.

6 States of Colorado, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming and the western halves of Kansas, Nebraska, North Dakota, South Dakota: The tank mix of CLETHODIM 2EC plus BUCTRIL or BUCTRIL GEL must be applied in the fall or spring to seedling alfalfa when the majority of the field has a minimum of 2 trifoliate. Unacceptable crop injury can occur to alfalfa seedlings less than the 2

trifoliate leaf stage. BUCTRIL or BUCTRIL GEL plus CLETHODIM 2EC applications made when temperatures are expected to exceed 80°F and 3 days following application can result in unacceptable crop injury. In the states not listed above, apply in the fall or spring to seedling alfalfa when the majority of the field has a minimum of 4 trifoliate leaves. Unacceptable crop injury may occur to alfalfa in the 2 trifoliate or smaller stage growth, when alfalfa stand is uneven and conditions favor leaf burn. When applications of CLETHODIM 2EC plus BUCTRIL or BUCTRIL GEL are made when temperatures are expected to exceed 70°F and three days following such application can result in unacceptable crop injury. Crop leaf burn can occur following CLETHODIM 2EC plus BUCTRIL or BUCTRIL GEL applications. Warm, humid conditions may enhance leaf burn. However, new crop growth will not be affected.

7 Do not make application when alfalfa is under moisture, temperature, insect or disease stress or has been stressed by other pesticide carryover or application.

CANOLA

Table 2. REDUCED RATE CLETHODIM 2EC TANK MIXES WITH BROADLEAF HERBICIDES FOR CANOLA

(See recommendation tables above for specific grasses and growth stages)

PRODUCT	APPLICATION RATES/ACRE			
	ANNUAL GRASSES[1]	PERENNIAL GRASSES	AMMONIUM SULFATE	
			GROUND	AIR
CLETHODIM 2EC[2] + LIBERTY[3]	4 – 5 fl oz + 34 fl oz	-	3.0 lbs	3.0 lbs

1 Annual grasses and sizes controlled with these tank mixtures are those that are identified in the **DIRECTIONS FOR REDUCED RATE USE IN DRY BEAN, CANOLA, FLAX, MUSTARD SEED, SOYBEAN AND SUGAR BEET RECOMMENDATIONS FOR SMALL ANNUAL GRASSES** table.

2 Do not apply CLETHODIM 2EC tank mix during or after bolting or flowering or crop injury could occur.

3 For use only on LibertyLink® canola.

COTTON

Table 3. CLETHODIM 2EC TANK MIXED WITH COBRA® AND MSMA APPLIED POST DIRECTED TO COTTON

PRODUCT[1]	APPLICATION RATES/ACRE[2]		CROP OIL CONCENTRATE[3] V/V	COMMENTS
CLETHODIM 2EC[4] + COBRA + MSMA (4.0 lbs/gal) or MSMA (6.6 lbs/gal)	ANNUAL GRASSES	PERRENIAL GRASSES	GROUND	
	6 – 8 fl oz	8 – 16 fl oz	1%	Reduce broadcast rate in proportion to the band area actually treated.
	See COBRA label for rates to control broadleaf weeds and height limitations for cotton. See CLETHODIM 2EC label for weed height and species controlled.			
	See MSMA label for rates to control broadleaf weeds and height limitations for cotton. See CLETHODIM 2EC label for weed height and species controlled.			

1. Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.
2. If grass regrowth occurs or an additional flush of new grass emerges, apply a second application of CLETHODIM 2EC alone – without a tank mix herbicide – according to the appropriate size and rate recommendations.
3. Always use a crop oil concentrate at the listed rate, but not less than 1 pt/A, in the finished spray volume.
4. If at the time of application, grass height is so tall that post-directed applications cannot get good coverage over the top of the grassy weeds, then poor control can result and a second non-post directed application of CLETHODIM 2EC may be necessary.

Table 4, CLETHODIM 2EC TANK MIXED WITH BUCTRIL 4 EC TO CONTROL EMERGED WEEDS IN BXN COTTON AS A BROADCAST APPLICATION

PRODUCT[1]	APPLICATION RATE/ACRE[2] ANNUAL GRASSES	CROP OIL CONCENTRATE PER ACRE[3]	COMMENTS[7]
CLETHODIM 2EC + BUCTRIL 4 EC [4,5,6]	8 – 16 fl oz Refer to BUCTRIL 4 EC label for rates to control broadleaf weeds and height limitations for cotton.	1 qt.	See charts for grasses controlled.

1. Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage.
2. If grass regrowth occurs or an additional flush of new grass emerges, apply a second application of CLETHODIM 2EC at the recommended rate with the appropriate amount of crop oil concentrate in a non-BUCTRIL tank mix.
3. Always add a crop oil concentrate 1 qt/A by ground in the finished spray solution.
4. Applications of BUCTRIL 4 EC can be made only to cotton that has been genetically modified for crop tolerance to postemergence over-the-top applications of bromoxynil.
5. Do not apply the CLETHODIM 2EC plus BUCTRIL tank mix within 75 days of harvest.
6. Do not exceed 2 applications of BUCTRIL before cotton is 12 inches tall and one application after 12 inches tall.
7. Use a minimum of 10 gallons of spray solution per acre.

Table 5. CLETHODIM 2EC TANK MIXED WITH GLYPHOSATE TO CONTROL EMERGED GRASSES IN COTTON AS A BROADCAST APPLICATION

PRODUCT	APPLICATION RATE/ACRE[1]		ADJUVANT		COMMENTS
	ANNUAL GRASSES	PERENNIAL GRASSES	Glyphosate formulation **with** built in adjuvant	Glyphosate formulation **without** built-in adjuvant	
CLETHODIM 2EC + GLYPHOSATE	6 – 8 fl oz	8 – 16 fl oz	Nonionic surfactant @ 0.125 to 0.25% v/v plus ammonium sulfate @ 8.5 to 17 lbs per 100 gallons carrier	Crop oil concentrate @ 1 pt/A plus ammonium sulfate @ 8.5 to 17 lbs per 100 gals carrier	See charts for grasses controlled. Use a minimum of 10 gals of spray solution per acre.
	See glyphosate label for rates to control broadleaf weeds and height limitations for cotton				

1. If grass regrowth occurs or an additional flush of new grass emerges, apply a second application of CLETHODIM 2EC at the recommended rate with the appropriate amount of crop oil.

DRY BEAN

Table 6. CLETHODIM 2EC TANK MIXES WITH BROADLEAF HERBICIDES FOR DRY BEANS (See recommendation tables above for specific grasses and growth stages)

PRODUCT[2]	APPLICATION RATES/ACRE[1]			
	ANNUAL GRASSES	PERENNIAL GRASSES	CROP OIL CONCENTRATE[3] (V/V)	
			GROUND	AIR
CLETHODIM 2EC + BASAGRAN®	8 – 10 fl oz + 1.0 – 2.0 pts/A	10 – 16 fl oz + 1 to 2 pts	1%	1%

1. If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2EC alone – without a tank mix herbicide – according to the appropriate size and rate recommendations.
2. Broadleaf weed control can be reduced when grass populations are tall enough or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.
3. Always use a crop oil concentrate at the listed rate, but not less than 1 pt/A, in the finished spray volume.

FLAX

Table 7. REDUCED RATE CLETHODIM 2EC TANK MIXES WITH BROADLEAF HERBICIDES FOR FLAX (See recommendation tables above for specific grasses and growth)

PRODUCT	APPLICATION RATES/ACRE			
	ANNUAL GRASSES[1]	PERENNIAL GRASSES	CROP OIL CONCENTRATE	
			GROUND	AIR
CLETHODIM 2EC + BRONATE ADVANCED™[2,3]	4 – 5 fl oz + 11.4 fl oz	-	1 pt	1 pt
CLETHODIM 2EC + BRONATES®	4 – 5 fl oz + 0.9 pt	-	1 pt	1 pt
CLETHODIM 2EC + BUCTRIL[2,3]	4 – 5 fl oz + 1.0 pt	-	1 pt	1 pt
CLETHODIM 2EC + RHONOX®[2,3]	4 – 5 fl oz + 0.25 – 0.5 pt	-	1 pt	1 pt

1. Annual grasses and sizes controlled with these tank mixtures are those that are identified in the **DIRECTIONS FOR REDUCED RATE USE IN DRY BEANS, CANOLA, FLAX, MUSTARD SEED, SOYBEANS AND SUGAR BEETS RECOMMENDATIONS FOR SMALL ANNUAL GRASSES** table.
2. Do Not apply CLETHODIM 2EC tank mix during or after the bud stage or to ornamental flax as crop injury can occur
3. Do Not apply tank mixes when temperatures are expected to exceed 85°F at or for 3 days following application as crop injury can occur.

SOYBEAN

Table 8. CLETHODIM 2EC TANK MIXES[3] TO CONTROL ANNUAL GRASSES WHEN USED AS A BURNDOWN IN NO-TILL SOYBEAN

PRODUCT	PRODUCT RATE/ACRE[1]	GRASS HEIGHT (inches)	CROP OIL CONCENTRATE /ACRE[2]	28%N OR 32%N QTS/A OR 2.5 TO 4.0 LBS AMS
CLETHODIM 2EC + 2,4-D ESTER*,[3]	3 fl oz	Foxtail 1 to 3 Fall Panicum 1 to 3	1 qt	1 – 2 qts or 2.5 – 4.0 lbs AMS
	4 fl oz	Foxtail 1 to 4 Fall Panicum 1 to 4	1 qt	1 – 2 qts or 2.5 – 4.0 lbs AMS
	6 – 8 fl oz + 0.5 lb a.i.	(See Grass Chart for grasses claimed)	1 qt	1 – 2 qts or 2.5 – 4.0 lbs AMS

*2,4-D ester should NOT be used where drift sensitive crops may be grown.

1. Apply a second application of CLETHODIM 2EC according to the appropriate size and rate recommendations, if regrowth occurs or an additional flush of new grass emerges.
2. Always use a crop oil concentrate at the listed rate in the finished spray volume.
3. The following products can be tank mixed with CLETHODIM 2EC plus 2,4-D ester: AUTHORITY® BROADLEAF, CANOPY XL®, DUAL® 8E, DUAL II, DUAL MAGNUM®, PROWL®, VALOR™, SENCOR®, SENCOR plus the DUAL products and TURBO®,

Table 9. CLETHODIM 2EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN (See recommendation tables above for specific grasses and growth stages)

PRODUCT[2]	APPLICATION RATES/ACRE[1]			
	ANNUAL GRASSES	PERENNIAL GRASSES	CROP OIL CONCENRATE[3] (V/V)	
			GROUND	AIR
CLETHODIM 2EC +	6 – 8 fl oz +	8 – 16 fl oz +	0.5 to 1%	1%

COBRA	12.5 fl oz	12.5 fl oz		
CLETHODIM 2EC + BASAGRAN 4 SL	8 – 10 fl oz + 1 – 2 pts	10 – 16 fl oz + 1 – 2 pts	1%	1%
CLETHODIM 2EC + Glyphosate (For use on Roundup Ready soybeans only)	6 – 8 fl oz + 0.75 – 3.0 lb a.i.	8 – 16 fl oz + 0.75 – 3.0 lb a.i.	0.5 to 1%[4]	1%[4]
CLETHODIM 2EC + BLAZER® 2 SL	6 – 8 fl oz + 1 – 1.5 pts	6 – 8 fl oz + 1 – 1.5 pts	0.5 to 1%	1%
CLETHODIM 2EC + FLEXSTAR® HL[6]	6 – 8 fl oz See FLEXSTAR HL label for specific application rates	8 – 16 fl oz See FLEXSTAR HL label for specific application rates	1%	1%
CLETHODIM 2EC + CLASSIC® 25 DG	8 – 10 fl oz + 0.5 – 0.75 oz	10 – 16 fl oz + 0.5 – 0.75 oz	1%	1%
CLETHODIM 2EC[4] + PURSUIT 70 DG	6 – 8 fl oz + 1.44 oz	8 – 16 fl oz + 1.44 oz	1%	1%
CLETHODIM 2EC[5] + COBRA + CLASSIC 25 DG	8 – 10 fl oz + 6 – 8 fl oz + 0.5 – 0.75 oz	-	0.5%	1%
CLETHODIM 2EC[5] + COBRA + BASAGRAN 4 SL	8 – 10 fl oz + 6 – 10 fl oz + 1 – 1.5 pts	-	0.5%	1%
CLETHODIM 2EC[5] + COBRA + PURSUIT 70 DG	8 – 10 fl oz + 6 – 10 fl oz + 1.44 oz	-	0.5%	1%
CLETHODIM 2EC[5] + STORM®	8 – 10 fl oz + 1.5 pts	-	0.5%	1%
CLETHODIM 2EC[5] + RESOURCE® + PURSUIT 70 DG	8 – 10 fl oz + 4 fl oz + 1.44 oz	-	1%	1%
CLETHODIM 2EC[5] + RESOURCE + BASAGRAN	8 – 10 fl oz + 4 fl oz + 1 pt	-	1%	1%
CLETHODIM 2EC[5] + RESOURCE + CLASSIC	8 – 10 fl oz + 4 fl oz + 0.5 oz	-	1%	1%
CLETHODIM 2EC[5] + COBRA + RESOURCE	6 – 8 fl oz + 6 fl oz + 4 fl oz	-	0.5%	1%

CLETHODIM 2EC[5] + FIRSTRATE®	6 – 8 fl oz + 0.3 oz	8 – 16 fl oz + 0.3 oz	1%	-
CLETHODIM 2EC[5] + COBRA + FIRSTRATE	6 – 8 fl oz + 6 – 8 fl oz + 0.3 oz	8 – 16 fl oz + 6 – 8 fl oz + 0.3 oz	1%	-
CLETHODIM 2EC[5] + RAPTOR® (1 AS)	6 – 8 fl oz + 4 – 5 fl oz	-	1%	-
CLETHODIM 2EC[5] + COBRA + RAPTOR (1 AS)	6 – 8 fl oz + 6 – 8 fl oz + 4 – 5 fl oz	-	1%	-
CLETHODIM 2EC[5] + SYNCHRONY® STS™	6 – 8 fl oz[7] + 0.5 oz/A	-	1 qt	-
CLETHODIM 2EC[5] + COBRA + SYNCHRONY STS	6 – 8 fl oz[7] + 4 – 8 fl oz + 0.5 oz	-	1 pt	-
CLETHODIM 2EC[5] + RESOURCE	6 – 8 fl oz + 4 – 12 fl oz	-	1 qt	-
CLETHODIM 2EC[5] + FRONTROW™	8 – 10 fl oz + Refer to FRONTROW label for use rates	-	1%	-
CLETHODIM 2EC + FIRSTRATE + FLEXSTAR HL[5]	6 – 8 fl oz + 0.3 oz + Refer to the FLEXSTAR HL label for specific application rates	8 – 16 fl oz + 0.3 oz. + Refer to the FLEXSTAR HL label for specific application rates	1%	-

1 If grass regrowth occurs or an additional flush of new grass emerges, make a second application of CLETHODIM 2EC alone – without a tank mix herbicide – according to the appropriate size and rate recommendations.

2 Broadleaf weed control can be reduced when grass populations are tall enough or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

3 Always use a crop oil concentrate at the listed rate, but not less than 1 pt/A, in the finished spray volume.

4 When CLETHODIM 2EC is tank mixed with glyphosate, the addition of 2.5 lb. ammonium sulfate is required. If the glyphosate formulation has a stand alone build-in adjuvant, add 0.125% v/v nonionic surfactant in place of crop oil concentrate, Add 0.5% to 1% crop oil concentrate for ground application and 1% v/v for aerial application, if the glyphosate formulation does not have a build-in adjuvant system.

5 When CLETHODIM 2EC is tank mixed with PURSUIT, RESOURCE, STORM, FIRSTRATE, SYNCHRONY, RAPTOR, FRONTROW, COBRA plus CLASSIC, COBRA plus BASAGRAN, COBRA plus PURSUIT, COBRA plus FIRSTRATE, COBRA plus SYNCHRONY, and COBRA plus RAPTOR, the addition of 1 – 2 qts/A of liquid fertilizer (10-34-0, 28%N, or 32%N) is recommended. An equivalent amount, 2.5 – 4.0 lbs/A, of spray grade ammonium sulfate (AMS) may be added in place of liquid fertilizer. Fertilizer adjuvants are to be added in addition to the crop oil concentrate.

6 Refer to the FLEXSTAR HL label for geographic and rotational restrictions.

7 Annual grasses and sizes controlled with these tank mixtures are those that are identified in the DIRECTIONS FOR REDUCED RATE USE IN DRY BEAN, CANOLA, FLAX, MUSTARD SEED, SOYBEAN AND SUGAR BEET RECOMMENDATIONS FOR SMALL ANNUAL GRASSES table.

SOYBEAN (continued)

Table 10. REDUCED RATE CLETHODIM 2EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN

(See table for reduced rate use in dry bean, canola, flax, mustard seed, soybean and sugar beet recommendations for small annual grasses for specific grasses and growth stages)

PRODUCT	APPLICATION RATES/ACRE[1]			
	ANNUAL GRASSES[2]	PRENNIAL GRASSES	CROP OIL CONCENTRATE[3,4] (V/V)	
			GROUND	AIR
CLETHODIM 2EC + FIRSTRATE	4 – 8 fl oz + 0.3 oz	-	1%	1%
CLETHODIM 2EC + PURSUIT 70 DG	4 – 6 fl oz + 1.44 oz	-	1%	1%

1. Make a second application of CLETHODIM 2EC alone – without a tank mix herbicide – according to the appropriate size and rate recommendations, if grass regrowth occurs or an additional flush of new grass emerges.
2. Annual grasses and sizes controlled with these tank mixtures are those that are identified in the **DIRECTIONS FOR REDUCED RATE USE IN DRY BEAN, CANOLA, FLAX, MUSTARD SEED, SOYBEAN AND SUGAR BEET RECOMMENDATIONS FOR SMALL ANNUAL GRASSES** table.
3. Always use a crop oil concentrate at the listed rated, but not less than 1 pt/A, in the finished spray volume.
4. When CLETHODIM 2EC is tank mixed at reduced rates, the addition of 1 – 2 qts/A of liquid fertilizer (10-34-0, 28% N, or 32%N) is required. An equivalent amount, 2.5 to 4.0 lbs/A, of spray grade ammonium sulfate (AMS) may be added in place of liquid fertilizer. Fertilizer adjuvants are to be added in addition to the crop oil concentrate.

PEANUT

Table 11. CLETHODIM 2EC TANK MIXES WITH BROADLEAF HERBICIDES FOR PEANUT

(See recommendation tables above for specific grasses and growth stages)

PRODUCT[2]	APPLICATION RATES/ACRE[1]			
	ANNUAL GRASSES[2]	PERENNIAL GRASSES	CROP OIL CONCENTRATE[3] (V/V)	
			GROUND	AIR
CLETHODIM 2EC + BASAGRAN	8 – 10 fl oz + 1.0 – 2.0 pts	-	1%	1%
CLETHODIM 2EC + BLAZER	8 – 10 fl oz + 0.5 – 1.5 pts	-	1%	1%
CLETHODIM 2EC + STORM	8 – 10 fl oz + 1.5 pts	-	1%	1%

1. Make a second application of CLETHODIM 2EC alone – without a tank mix herbicide – according to the appropriate size and rate recommendations, if grass regrowth occurs or an additional flush of new grass emerges.
2. Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.
3. Always use a crop oil concentrate at the listed rate, but not less than 1 pt/A, in the finished spray volume.

RECOMMENDATIONS FOR GRASS SUPPRESSION FOR HARVEST EFFICIENCY IN PEANUT WITH CLETHODIM 2EC			
GRASS SPECIES	WEED STAGE	RATE FL OZ/ ACRE	HIGH RATE
Annual and perennial grasses that exceed height claimed for control on height charts	Up to and including grasses in the seed head stage	16	32

"RECOMMENDATIONS FOR ANNUAL GRASSES" & "RECOMMENDATIONS FOR PERENNIAL GRASSES"			
Do Not apply as part of a tank mix when applying CLETHODIM 2EC for grass suppression. Add a crop oil concentrate at 1 qt/A by ground to the finished spray volume.			

SUGAR BEET

Table 12. CLETHODIM 2EC TANK MIXED WITH STINGER® APPLIED TO SUGAR BEET (See recommendation tables above for specific grasses and growth stages)

PRODUCT[2]	APPLICATION RATES/ACRE[1]		CROP OIL CONCENTRATE[3] (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2EC + STINGER	6 – 8 fl oz	8 – 16 fl oz	1%	
	See STINGER label for rates.			

1. Make a second application of CLETHODIM 2EC alone – without a tank mix herbicide – according to the appropriate size and rate recommendations, if grass regrowth occurs or an additional flush of new grass emerges.
2. Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.
3. Always use a crop oil concentrate at the listed rate, but not less than 1 pt/A, in the finished spray volume.

Table 13. CLETHODIM 2EC TANK MIXED WITH BETAMIX® OR BETANEX® APPLIED TO SUGAR BEET

PRODUCT[2]	WEEDS CONTROLLED		WEED HEIGHT (Inches)	APPLICATION RATES/ACRE[1]
	COMMON NAME	SCIENTIFIC NAME		
CLETHODIM 2EC[3] + BETAMIX OR BETANEX	Barnyardgrass	*Echinochloa crus-galli*	1 to 3	8 fl oz
	Foxtail	*Setaria* spp.	1 to 3	See BETAMIX label for rates to control broadleaf weeds. No additives are recommended in this tank mix.
	Foxtail Millet	*Setaria italica*	1 to 3	
	Wild Oat	*Avena fatua*	1 to 3	
	Wild Proso Millet	*Panicum miliaceum*	1 to 3	
				See BETANEX label for rates to control broadleaf weeds. **No additives are recommended in this tank mix.**

1. Do not use crop oil concentrate. No additives are recommended in this tank mix. Make a second application of CLETHODIM 2EC alone – without a tank mix herbicide – according to the appropriate size and rate recommendations, if grass regrowth occurs or an additional flush of new grass emerges.
2. Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.
3. Make a second application of CLETHODIM 2EC at the full label rate with appropriate rate of crop oil concentration, if grass regrowth occurs or an additional flush of new grass emerges.

Table 14. CLETHODIM 2EC PLUS BETANEX OR BETAMIX TANK MIX FOR THREE SEQUENTIAL APPLICATIONS FOR ANNUAL GRASS CONTROL (MICRO-RATE APPLICATION)

PRODUCT	APPLICATION RATES/ACRE[1]			
	ANNUAL GRASSES	GRASSES CONTROLLED (inches)	METHYLATED SEED OIL[2] (V/V)	
			GROUND	AIR
CLETHODIM 2EC + BETANEX or BETAMIX	2 – 3 fl oz + 0.8 – 12 fl oz[3] or 0.8 – 12 fl oz[3]	Green Foxtail (1-2) Yellow Foxtail (1-2) Barnyardgrass (1-2) Wild Oat (1-2) Volunteer Cereals (1-2)	1.5%	1.5%

1. Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.
2. Always use a methylated seed oil at the listed rate, but not less than 1 pt/A, in the finished spray volume.
3. When sugar beets are in the cotyledon to 4-leaf stage, use 8 fl oz/A rate. This rate can be increased up to 12 fl oz/A when the smallest sugar beet plants in the field are in the 4 true leaf stage or larger.

DIRECTIONS FOR USE WITH MICRO-RATE APPLICATIONS TO SUGAR BEETS

GENERAL INFORMATION

Multiple micro-rate applications of CLETHODIM 2EC in tank mixtures with reduced rates of BETANEX or BETAMIX and methylated seed oils can be applied by air or ground equipment to sugar beets to control early germinating annual grasses listed above. Do not exceed the rate of 0.12 lb ai/A broadcast application for BETANEX or BETAMIX when in combination with these spray adjuvants. Note that maximum rate allowed varies depending on crop growth stage. The use of wetting agents or spray adjuvants with conventional rates (0.73 to 1.22 lb ai/A) or multiple low rate (0.24 to 0.73 lb ai/A) applications of BETANEX or BETAMIX is prohibited on the BETANEX and BETAMIX master label. Favorable climatic conditions, i.e. good conditions for plant growth and development, are essential for adequate weed control. All use precautions and restrictions on the BETANEX and BETAMIX master labels must be followed.

DIRECTIONS FOR USING MICRO-RATE MULTIPLE APPLICATIONS OF CLETHODIM 2EC TANK MIXES

Apply CLETHODIM 2EC in broadcast applications only at a rate of 2 – 3 fl oz/A in tank mixture with either BETANEX or BETAMIX following the directions for use on the tank mix partner label. A minimum of three sequential applications of 2 fl oz/A or a minimum of 2 sequential applications of 3 fl oz/A should be utilized for CLETHODIM 2EC tank mixtures. A minimum of 3 sequential applications of BETANEX or BETAMIX should be used. Accurate timing is essential. Immediately after weeds emerge, make initial application and make repeat applications on 5 to 7 day intervals. Return to conventional application rates of CLETHODIM 2EC, 6 – 8 fl oz/A, and add rates of BETANEX or BETAMIX as directed on their label, if weed control is not adequate due to climatic conditions, spray coverage or other factors. A spray adjuvant is not recommended when using conventional rates of BETANEX or BETAMIX in tank mixtures with CLETHODIM 2EC.

Use Precautions for Micro-Rate Applications: (See CLETHODIM 2EC, BETANEX and BETAMIX master label for further use precautions)

Even with favorable climatic conditions, not all weeds will be adequately controlled. If multiple micro-rate applications do not adequately control weeds, conventional rates of CLETHODIM 2EC, BETANEX or BETAMIX and/or hand labor may be required. Plugging of spray nozzles may be encountered, due to the potential for formation of a precipitate in the spray solution that is often associated with micro-rate applications. If the BETANEX or BETAMIX rate exceeds 0.12 lb ai/A broadcast, methylated seed oils must not be added. This addition of methylated seed oils could increase the possibility of crop injury at dosage rates greater than 0.12 lb ai/A.

GROUND APPLICATION

It is essential to use sufficient spray volumes and pressure to ensure complete coverage. Use a minimum of 10 gallons and maximum of 20 gallons spray solution per acre. Spray pressures should reflect a minimum of 30 psi and a maximum of 60 psi at the nozzle. Do Not use flood nozzles.

AERIAL APPLICATION

It is essential to use sufficient spray volumes to ensure complete coverage. Use a minimum of 5 gallons and maximum of 15 gallons of spray solution per acre.

Table 15. TANK MIX APPLICATION OF CLETHODIM 2EC AND FUNGICIDES FOR CONTROL OF GRASS WEEDS AND DISEASES IN SUGAR BEET

PRODUCT[2]	APPLICATION RATES/ACRE[1]		
	ANNUAL GRASSES	PERENNIAL GRASSES	CROP OIL CONCENTRATE[3] (V/V)
CLETHODIM 2EC + EMINENT®	6 – 8 fl oz + 13 fl oz	8 to 16 fl oz + 13 fl oz	1%

1. Make a second application of CLETHODIM 2EC at the full label rate with appropriate rate of crop oil concentration, if grass regrowth occurs or an additional flush of new grass emerges.
2. Refer to CLETHODIM 2EC and fungicide label for rates and weeds and diseases controlled.
3. Always use a crop oil concentrate at the listed rate, but not less than 1 pt/A, in the finished spray volume.

Table 16. TANK MIX APPLICATION OF CLETHODIM 2EC AND INSECTICIDES FOR CONTROL OF GRASS WEEDS AND INSECTS IN ALFALFA, COTTON, MINT, PEANUT, SOYBEAN AND SUNFLOWER

PRODUCT[2]	APPLICATION RATES/ACRE[1]			CROP					
	ANNUAL GRASSES	PERENNIAL GRASSES	CROP OIL CONCENTRATE (V/V)[3]	Alfalfa[4]	Cotton	Mint[4,5]	Peanut	Soybean	Sunflower
CLETHODIM 2EC + ORTHENE® 75 S or ORTHENE 97	6 – 8 fl oz + 0.33 – 1.33 lbs or 0.25 – 1.0 lb	8 – 16 fl oz + 0.33 – 1.33 lbs or 0.25 – 1.0 lb	1%		X	X	X		
CLETHODIM 2EC + ORTHENE 90 S[6]	6 – 8 fl oz + 0.25 – 1 lb	8 – 16 fl oz + 0.25 – 1 lb	1%		X	X	X	X	
CLETHODIM 2EC + DANITOL® 2.4 EC	6 – 8 fl oz + 10-2/3 – 16 fl oz	8 – 16 fl oz + 10-2/3 – 16 fl oz	1%		X		X		
CLETHODIM 2EC + ASANA XL®	6 – 8 fl oz + See ASANA XL label	8 – 16 fl oz + See ASANA XL label	1%						X
CLETHODIM 2EC + WARRIOR®	6 – 8 fl oz + See WARRIOR label	8 – 16 fl oz + See WARRIOR label	1%						X
CLETHODIM 2EC + WARRIOR	10 – 16 fl oz[7] + See WARRIOR label	10 – 16 fl oz + See WARRIOR label	1%	X					
CLETHODIM 2EC + BAYTHROID®	10 – 16 fl oz + See BAYTHROID label	10 – 16 fl oz + See BAYTHROID label	1%	X					
CLETHODIM 2EC + DIMETHOATE	10 – 16 fl oz[7] + See Dimethoate label	10 – 16 fl oz + See Dimethoate label	1%	X					
CLETHODIM 2EC + LORSBAN®	10 – 16 fl oz + See	10 – 16 fl oz + See	1 – 2 pt[8]	X					

	LORSBAN label	LORSBAN label							
CLETHODIM 2EC + POUNCE®	10 – 16 fl oz[7] + See POUNCE label	10 – 16 fl oz + See POUNCE label	1%	X					

1. Make a second application of CLETHODIM 2EC alone – without a tank mix insecticide – according to the appropriate size and rate recommendations, if grass regrowth occurs or an additional flush of new grass emerges.
2. Refer to CLETHODIM 2EC and insecticide label for rates and weeds and insects controlled.
3. Always use a crop oil concentrate at the listed rate, but not less than 1 pt/A, in the finished spray volume.
4. Certain insecticides can cause temporary phytotoxic symptoms on alfalfa and mint foliage. See the insecticide label for further information. Prior to using any of these insecticide/herbicide tank mixtures, it is suggested a small area of the field be treated and observed for crop injury before treating the entire field.
5. Rates for CLETHODIM 2EC for annual grass control in baby mint should be 6 – 8 fl oz/A; minimum of 8 fl oz/A for annual grass control in established mint and 8 – 16 fl oz/A for perennial grass control. Add a crop oil concentrate at the rate of 1.0 – 2.0 pts/A.
6. ORTHENE 90 S insecticide tank mix use with CLETHODIM 2EC is permitted only in a state having an approved Section 24(c) registration for ORTHENE 90 S use in soybeans.
7. The rate for CLETHODIM 2EC for annual grass control in seedling alfalfa should be 6 – 8 fl oz/A.
8. For CLETHODIM 2EC plus LORSBAN tank mix, reduce the adjuvant rate down to 1.0 pt/A when the LORSBAN rate is 1.0 pt/A or higher.

Table 17. RECOMMENATIONS FOR ROUNDUP READY VOLUNTEER CORN CONTROL IN ROUNDUP READY SOYBEANS WITH CLETHODIM 2EC HERBICIDE TANK MIX

Roundup Ready Volunteer Corn Height (Inches)	CLETHODIM 2EC RATE FL OZ/A	GLYPHOSATE[1] RATE FOR FORMULATIONS WITH BUILT IN ADJUVANT	ADJUVANT
<12	4	– 2.0 lb ai/A (Approx. equivalent to 22 – 44 fl oz/A of ROUNDUP Weather MAX)	Nonionic surfactant @ 0.125 – 0.25% v/v plus ammonium sulfate (AMS) @ 8.5 – 17 lbs per 100 gallons carrier
12 – 18	5		
18 – 24	6		

Roundup Ready Volunteer Corn Height (Inches)	CLETHODIM 2EC Rate fl oz/A	GLYPHOSATE1 RATE FOR FORMULATIONS WITHOUT BUILT IN ADJUVANT	ADJUVANT
<12	4	Up to 2.0 lb ai/A (Equivalent to 32 – 64 fl oz/A of ROUNDUP Original)	Crop oil concentrate @ 1 pt/A plus ammonium sulfate (AMS) @ 8.5 – 17 lbs per 100 gallons carrier
12 to 18	5		
18 – 24	6		

1. Glyphosate formulation must be labeled for use on Roundup Ready soybeans.

ALWAYS FOLLOW THE MOST RESTRICTIVE LABELING LANGUAGE OF ANY PRODUCT USED IN A TANK MIX

- Make application only to actively growing grass and broadleaf weeds at recommended height or growth stage listed on each label.
- Make application under favorable soil moisture and humidity, which exist a few days after rainfall or within seven days after irrigation.
- Reduced grass control can sometimes result with tank mix application. Make a second application of CLETHODIM 2EC as specified in the respective size and rate tables, if regrowth occurs or an additional flush of new grass emerges.
- This tank mix may be applied postemergence to ROUNDUP READY soybeans up through the full flowering stage. Do Not make application less than 60 days before harvest.
- Severe injury or destruction will result unless contact is avoided with foliage, green stems, or fruit crops, or any desirable plants and trees, other than soybeans with ROUNDUP READY gene.

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- Do not allow the CLETHODIM 2EC plus ROUNDUP to mist, drip, drift or splash onto desirable vegetation as minute quantities of the tank mix can cause severe damage or destruction to the crops, plants, or other areas on which treatment is not intended. The likelihood of injury occurring from drift of this product is greatest when winds are gusty or in excess of 5 miles per hour. Even under lesser wind velocities, avoid conditions that will allow spray drift to occur, such as combinations of spray pressure and nozzle type that will result in fine particles (mist) that are likely to drift.
- Do not tank mix CLETHODIM 2EC when broadleaf weeds are tall and/or dense enough to prevent proper grass coverage.

FALLOW LAND
DIRECTIONS FOR USE

CLETHODIM 2EC can be used to control annual and perennial grasses in land that has been left fallow the previous year and on other non-producing agricultural areas. Make application at 6 – 8 fl oz/A for annual grasses and 8 – 16 fl oz/A for perennial grasses. CLETHODIM 2EC can be tanked mixed with 2,4-D ester or BANVEL® SFG for broad spectrum control when both grass and broadleaf weeds are the target pest. Apply a minimum of 8 fl oz/A CLETHODIM 2EC when both annual and perennial grasses occur in the same field.

GENERAL INFORMATION

Use a minimum spray volume of 5 gallons/A for aerial applications and 15 gallons/A for ground applications.

Make application only to actively growing grasses when the first grass reaches the recommended weed height as specified by the "Recommendations for Annual and Perennial Grasses" section of this label.

Do not apply to drought stressed grasses.

Do not apply to grasses that have tillered, formed seed-heads or exceeded recommended growth stage.

Do not flood jet nozzles.

Do not plant any crop for 30 days after application unless clethodim is registered for use on that crop.

Annual grasses that emerge after the CLETHODIM 2EC application will not be controlled and a second application could be necessary.

Do not mow area for two (2) weeks prior to or after the CLETHODIM 2EC application.

Control of perennial grasses may require more than one (1) application in non-tilled areas.

Table 18. CLETHODIM 2EC IN TANK MIXES TO CONTROL ANNUAL AND PERENNIAL GRASSES IN FALLOW LAND

PRODUCT	APPLICATION RATES/ACRE[1]			CROP OIL CONCENTRATE[2]
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
CLETHODIM 2EC + 2,4-D ester or BANVEL SGF	6 – 8 fl oz + 0.5 lb/A or See BANVEL SGF label for rates	8 – 16 fl oz.	1%	1%

1. See CLETHODIM 2EC label for weed height and species control. Review BANVEL SGF and 2,4-D labels for use rates, weeds controlled and crop restrictions.
2. Always use a crop oil concentrate or methylated seed oil containing at least 15% emulsifier at the listed rate, but not less than 1 pt/A, in the finished spray volume.

RECOMMENDATIONS FOR GRASS SUPPRESSION IN NON-CROP AREAS WITH CLETHODIM 2EC			
GRASS SPECIES	WEED STAGE	RATE FL OZ/ ACRE	HIGH RATE
Annual and perennial grasses that exceed height claimed for control on height chart above	Up to and including grasses in the seed head stage	12	16

Do not apply as part of a tank mix when applying CLETHODIM 2EC for grass suppression. Add a crop oil concentrate at 1 qt/A by ground to the finished spray volume.

Table 19. CLETHODIM 2EC FOR THE CONTROL AND/OR SUPPRESSION OF TALL FESCUE IN NATIVE PRAIRIE WARM-SEASON GRASS RESTORATION PROJECTS

PRODUCT	PRODUCT RATES	GRASS WEEDS CONTROLLED/SUPRESSED		WEED STAGES
		Common Name	Scientific Name	
CLETHODIM 2EC	10 – 12 fl oz/A	Tall Fescue	*Festuca arundinacea*	4 to 6 inches tall (40-60% green-up)
ADJUVANT: CLETHODIM 2EC must be applied with a crop oil concentrate at 1 qt/A, plus a spray grade ammonium sulfate (AMS) at 2.5 – 4 lbs/A. Recommended Mixing Order: Thoroughly mix spray grade ammonium sulfate in water, add CLETHODIM 2EC, then add crop oil concentrate.				

SPECIAL APPLICATION INSTRUCTIONS/PRECAUTIONS

Burn or mow fields a minimum of 3 weeks prior to application to remove excess crop residue. Make application in the spring at 40 – 60% tall fescue green-up, prior to emergence of warm-season grasses. Do not mow area for two (2) weeks after the CLETHODIM 2EC application.

Make application in a minimum of 15 – 20 gallons water per acre at a spray pressure of 40 – 60 PSI at the nozzle. Apply using flat fan or hollow cone nozzles. Do not use flood jet nozzles.

Make application only to fields that have warm season grasses established for two (2) years. Application of CLETHODIM 2EC to emerged warm-season grasses may cause injury. Do not make applications to warm-season grasses grown for seed.

Do not graze treated fields or feed treated forage and/or hay to livestock. Do not plant any crop for 30 days after application, unless clethodim is registered for use on that crop.

ATTENTION: CLETHODIM 2EC applications are most effective if applied when average nighttime temperatures are consistently greater than or equal to 47°F.

Table 20. CLETHODIM 2EC FOR THE SUPPRESSION OF TALL FESCUE SEED-HEADS IN NONPRODUCING AGRICULTURAL AREAS

PRODUCT	PRODUCT RATE	SUPPRESSION	APPLICATION TIMING
CLETHODIM 2EC	1-1/2 – 2 fl oz/A	Tall Fescue Seed-Heads *(Festuca arundinacea*	(50 to 90% Tall Fescue green-up)
ADJUVANT: CLETHODIM 2EC must be applied with a crop oil concentrate at 1 qt/A, plus a spray grade ammonium sulfate (AMS) at 2.5 – 4 lbs/A. Recommended Mixing Order: Thoroughly mix spray grade ammonium sulfate in water, add CLETHODIM 2EC, then add crop oil concentrate.			

SPECIAL APPLICATION INSTRUCTIONS/PRECAUTIONS

Make application at 50 – 90% tall fescue green-up.

If less tall fescue green matter is present, use the higher CLETHODIM 2EC rate.

Do Not mow area for two (2) weeks after the CLETHODIM 2EC application.

Make application in a minimum of 15 – 20 gallons water per acre at a spray pressure of 40 – 60 PSI at the nozzle. Make application using flat fan or hollow cone nozzles. Do not use flood nozzles.

2,4-D ester may be added to this tank mix for broadleaf control (see 2,4-D ester label for weeds controlled.)

Do Not graze treated fields or feed treated forage and/or hay to livestock. Do Not plant any crop for 30 days after application unless clethodim is registered for use on that crop.

ORNAMENTALS

DIRECTIONS FOR USE

CLETHODIM 2EC can be used for ornamental plant uses to control labeled grass weeds in greenhouse, lathhouses, shadehouses, and around outdoor ornamentals, including nurseries, parks, roadside plants, and structure landscapes.

IMPORTANT: CLETHODIM 2EC successfully controls weeds in newly transplanted and established non-grassy ornamentals. Plant tolerance to CLETHODIM 2EC at labeled rates has been found to be acceptable for the indicated genera and species listed below. It is recommended that the user determine if herbicide can be used safely on a few plants prior to widespread application, due to variability within species, crop growth stage, environmental conditions, and application techniques. Neither the seller nor the manufacturer of CLETHODIM 2EC have investigated the safety factor to ornamental plants not listed on this label.

The following plants have shown a tolerance for CLETHODIM 2EC applications.

ORNAMENTAL TREES

COMMON NAME	SCIENTIFIC NAME
ALDER, RED	*Alnus rubra*
ASH	*Fraxinus* spp.
BASSWOOD	*Tilia* spp.
BIRCH, EUROPEAN WHITE	*Betula pendula*
BIRCH, RIVER	*Betula nigra*
BIRCH, WHITE	*Betula papyrifera*
CRABAPPLE, FLOWERING	*Malus halliana*
DOGWOOD, FLOWERING	*Cornus florida*
GOLDEN CHAIN TREE	*Laburnum anagyroides*
MAPLES	*Acer* spp.
MULBERRY, WHITE	*Morus alba*
OAKS	*Quercus* spp.
OLIVE, WILD	*Elaeagnus angustifolia*
REDBUD, EASTERN	*Cercis Canadensis*
SWEET GUM, AMERICAN	*Liquidambar styraciflua*

GROUND COVERS

COMMON NAME	SCIENTIFIC NAME
BUGLEWEED, CARPET	*Ajuga reptans*
IVY, ENGLISH	*Hedera helix*
JAPANESE SPURGE	*Pachysandra terminalis*
LILYTURF	*Liriope muscari*
MONEYWORT	*Lysimachia nummularia*
MONDO GRASS, WHITE	*Ophiopogon jaburan*
MONDO GRASS, DWARF	*Ophiopogon japonicus*
PERIWINKLE, LESSER	*Vinca minor*

GARDEN FLOWERS AND PLANTS

COMMON NAME	SCIENTIFIC NAME
AGERATUM	*Ageratum* spp.
ALYSSUM*, SWEET	*Lobularia maritima*
ASPARAGUS FERN	*Asparagus setaceus*
BLEEDING HEART	*Dicentra spectabilis*
CAST IRON PLANT	*Aspidistra elatior*
CHRYSANTHEMUM	*Chrysanthemum* spp.
CINQUEFOIL	*Potentilla* spp.
COLEUS	*Coleus* spp.
CORALBELLS	*Heuchera sanguinea*
CRANESBILL	*Geranium* spp.
DAHLIA	*Dahlia* spp.
DAISY, TRAILING AFRICAN	*Osteospermum fruticosum*
DAYLILY	*Hemerocallis* spp.
DUSTY MILLER	*Senecio cineraria*
EUONYMUS	*Euonymus* spp.

GAZANIA	*Gazania* spp.
GERANIUM, HOUSE	*Pelargonium hortorum*
HEATHER, FALSE	*Cuphea hyssopifolia*
HOSTA	*Hosta fortunei*
IRIS	*Iris* spp.
JASMINE TOBACCO	*Nicotiana alata*
LOOSESTRIFE	*Lythrum salicaria*
MARIGOLD	*Tagetes* spp.
PARTRIDGEBERRY	*Mitchella repens*
PETUNIA*	*Petunia hybrida*
PHLOX	*Phlox* spp.
PINKS	*Dianthus* spp.
PORTULACA	*Portulaca grandiflora*
SALVIA	*Salvia* spp.
SAXIFRAGE	*Saxifraga* spp.
SEDUM	*Sedum* spp.
SELLOUM	*Philodendron selloum*
SNAPDRAGON*	*Antirrhinum majus*
SWEET FLAG	*Acorus gramineus*
TICKSEED	*Coreopsis grandiflora*
TOUCH-ME-NOT	*Impatiens* spp.
VERBENA	*Verbena* spp.
VIOLET	*Viola* spp.
YARROW, COMMON	*Achillea millefolium*
ZINNIA	*Zinnia elegans*

* Slight foliage or flower speckling has been observed on these species.

SHRUBS

COMMON NAME	SCIENTIFIC NAME
ABELIA	*Abelia* spp.
ANISE, PURPLE	*Illicium floridanum*
AUCUBA	*Aucuba* spp.
AZALEA*	*Rhododendron* spp.
BAMBOO	*Bambusa* spp.
BARBERRY, JAPANESE	*Berberis thungergii*
BARBERRY, MAGELLAN	*Berberis buxifolia*
BAYBERRY	*Myrica pensylvanica*
BOTTLEBRUSH	*Callistemom citrinus*
BOXWOOD, COMMON	*Buxus sempervirens*
CAMELLIA, COMMON	*Camellia japonica*
CANDYTUFT	*Iberis sempervirens*
CLEYERA	*Cleyera japonica*
CORALBERRY	*Ardisia crenata*
CRAPE MYRTLE	*Lagerstroemia indica*
COYOTE BRUSH	*Baccharis pilularis*
FIG, CREEPING	*Ficus pumila*
GARDENIA	*Gardenia* spp.
HOLLY	*Ilex* spp.
HONEYSUCKLE	*Lonicera* spp.
INDIAN HAWTHORN	*Raphiolepis indica*
JASMINE	*Jasminum* spp.
JASMINE, ASIATIC	*Trachelospermum asiaticum*
JASMINE, STAR	*Trachelospermum jasminoides*
JUNIPER	*Juniperus* spp.
LANTANA	*Lantana* spp.
NANDINA* BAMBOO, HEAVENLY	*Nandinia domestica*
OLEANDER, COMMON	*Nerium oleander*
OREGON GRAPE	*Mahonia aquifolium*
PHOTINIA	*Photinia* spp.

PITTOSPORUM	*Pittosporum* spp.
PODOCARPUS	*Podocarpus* spp.
PRIVET	*Ligustrum* spp.
PYRACANTHA	*Pyracantha* spp.
RHODODENDRON	*Rhododendron* spp.
ROSE	*Spiraea bumalda*
SWEET OLIVE	*Osmanthus fragrans*
VIBURNUM	*Viburnum tinus*
WISTERIA	*Wisteria* spp.
YELLOW SAGE/SHRUB VERBENA	*Lantana camara*

*Slight foliage or flower speckling has been observed on these species.

RECOMMENDATIONS FOR ANNUAL GRASSES IN ORNAMENTALS

1) Make application to actively growing grasses at recommended weed heights.
2) Make application when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
3) Use the higher rate under heavy grass pressure and/or when grasses are at maximum height.

GRASS SPECIES	SCIENTIFIC NAME	WEED* HEIGHT (Inches)	RATE FL OZ/ ACRE[1]	HIGH RATE[2]
Barnyardgrass	*Echinochloa crus-galli*	2 – 8	8	16
Broadleaf Signalgrass	*Brachiaria platyphylla*	2 – 6	8	16
Brome				
California	*Bromus carinatus*	2 – 6	8	16
Cheat	*Bromus secalinus*	2 – 6	8	16
Downy	*Bromus tectorum*	2 – 6	8	16
Ripgut	*Bromus diandrus*	2 – 6	8	16
Canarygrass	*Phalaris canariensis*	1 – 4	8	16
Crabgrass				
Hairy	*Digitaria adscendens*	2 – 6**	8	16
Large	*Digitaria sanguinalis*	2 – 6**	8	16
Smooth	*Digiteria ischaemum*	2 – 6**	8	16
Southern	*Digiteria ciliaris*	2 – 6**	8	16
Crowfootgrass	*Dactyloctenium aegyptium*	2 – 6**	8	16
Fall Panicum	*Panicum dichotomiflorum*	2 – 8	8	16
Field Sandbur	*Cenchrus incertus*	2 – 6	8	16
Foxtail				
Giant	*Setaria faberi*	2 – 12	8	16
Green	*Setaria viridis*	2 – 8	8	16
Yellow	*Setaria glauca*	2 – 8	8	16
Goosegrass	*Eleusine indica*	2 – 6**	8	16
Itchgrass	*Rottboellia cochin*	2 – 6	8	16
Junglerice	*Echinochloa colona*	2 – 6	8	16
Lovegrass (Stinkgrass)	*Eragrostis cilianensis*	2 – 6	8	16
Rabbitsfootgrass	*Polypogon monspeliensis*	1 – 4	8	16
Red Rice	*Oryza sativa*	1 – 3	8	16
Ryegrass				
Hardy	*Lolium remotum*	2 – 6	8	16
Italian	*Lolium multiflorum*	2 – 6	8	16
Seedling Johnsongrass	*Sorghum halepense*	4 – 10	8	16
Shattercane	*Sorghum bicolor*	6 – 18	8	16
Southwestern Cupgrass	*Eriochloa gracilis*	2 – 6	8	16
Sprangletop				
Amazon	*Leptochloa panicoides*	2 – 6	8	16
Bearded	*Leptochloa fascicularis*	2 – 6	8	16
Mexican	*Leptochloa uninervia*	2 – 6	8	16
Red	*Leptochloa filiformis*	2 – 6	8	16
Texas Panicum	*Panicum texanum*	2 – 6	8	16
Volunteer Cereals				

Barley	*Hordeum vulgare*	2 – 6	8	16
Oats	*Avena sativa*	2 – 6	8	16
Rye	*Secale cereale*	2 – 6	8	16
Wheat	*Triticum aestivum*	2 – 6	8	16
Volunteer Corn	*Zea mays*	4 – 12	6	8
Volunteer Corn	*Zea mays*	12 – 24	8	16
Volunteer Grain Sorghum	*Sorghum bicolor*	8 – 12	8	16
Wild Oats	*Avena fatua*	2 – 6	8	16
Wild Proso Millet	*Panicum miliaceum*	2 – 10	8	16
Witchgrass	*Panicum capillare*	2 – 8	8	16
Woolly Cupgrass	*Eriochloa villosa*	2 – 8	8	16

*Generally occurs between 3-leaf stage and tillering
**Length of lateral growth

1. 8 fl oz/A = approximately 0.2 fl oz/1000 sq ft
2. 16 fl oz/A = approximately 0.4 fl oz/1000 sq ft

Add a nonionic surfactant containing at least 80% active ingredient at the rate of 1 pt per 50 gallons (0.25% v/v).

RECOMMENDATIONS FOR PERENNIAL GRASSES

1) Make application only to actively growing grasses at recommended weed heights.
2) Make application when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment
3) Use the higher rate under heavy grass pressure and/or when grasses are at maximum height.

GRASS SPECIES	WEED HEIGHT (inches)	RATE FL OZ/ ACRE[1]	HIGH RATE[2]
Bermudagrass *(Cynodon dactylon)*			
First Application	3 (or up to 6" runners)	8	16
Repeat Application(s) (if regrowth occurs)	3 (or up to 6" runners)	8	16
Quackgrass *(Elytrigia repens)*			
First Application	4 – 8	8	16
Repeat Application(s) (if regrowth occurs)	4 – 8	8	16
Rhizome Johnsongrass *(Sorghum halepense)*			
First Application	12 – 24	8	16
Repeat Application(s) (if regrowth occurs)	6 – 18	6	8
Wirestem Muhly *(Muhlenbergia frondosa)*			
First Application	4 – 8	8	16
Repeat Application(s) (if regrowth occurs)	4 – 8	8	16

1. 8 fl oz/A = approximately 0.2 fl oz/1000 sq ft
2. 16 fl oz/A = approximately 0.4 fl oz/1000 sq ft

Add a nonionic surfactant containing at least 80% active ingredient at the rate of 1 pt per 50 gallons (0.25% v/v)

STORAGE AND DISPOSAL

PESTICIDE STORAGE: Store product in original container only. Store in a cool, dry place. Do not store diluted spray. Do not contaminate water, other pesticides, fertilizer, food or feed in storage or cleaning of equipment. Open dumping is prohibited.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Nonrefillable container. Do not reuse or refill this container. Triple-rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more time. Offer for recycling, if available, or puncture and dispose of in a sanitary landfill or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke. Do not reuse container.

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The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Such risks may arise from weather conditions, soil factors, off-target movement, unconventional farming techniques, the presence of other materials, the manner of use or application, or other unknown factors, all of which are beyond the control of Arysta LifeScience North America, LLC ("Arysta"), and can cause crop injury, injury to non-target crops or plants, ineffectiveness of the product, or other unintended consequences. All such risks shall be assumed by the user or buyer. Arysta warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks described above, when used in accordance with the Directions for Use under normal conditions. This warranty does not extend to the use of this product contrary to label instructions or under conditions not reasonably foreseeable to Arysta, and is subject to the inherent risks described above.

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