

 <p align="center"><b>U.S. ENVIRONMENTAL PROTECTION AGENCY</b> Office of Pesticide Programs Registration Division (7505P) Ariel Rios Building 1200 Pennsylvania Ave., NW Washington, D.C. 20460</p>	EPA Reg. Number: 84930-6	Date of Issuance: 26 JUN 2008
	NOTICE OF PESTICIDE: <input checked="" type="checkbox"/> Registration <input type="checkbox"/> Reregistration (under FIFRA, as amended)	
Name and Address of Registrant (include ZIP Code):  <b>ARCANA, LLC</b> <b>323 South College Ave., Suite 1</b> <b>Fort Collins, CO 80524</b>		
<p><b>Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.</b></p> <p>On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act. Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.</p> <p>This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:</p> <ol style="list-style-type: none"> <li>1. Submit and/or cite all data required for registration/reregistration review of your product when the Agency requires all registrants of similar products to submit data.</li> <li>2. Make the following label changes listed below before you release the product for shipment:           <ol style="list-style-type: none"> <li>a. Add the phrase, "EPA Reg. No. 84930-6".</li> <li>b. Since the Tank Mix directions specify the application rate, assure that the brand names of the pesticide Tank Mixes correspond to the application rates. Incomplete Brand Names e.g. "Pursuit" could result in pesticides being applied at unapproved application rates.</li> <li>c. In the Warranty correct the typo to read "stated in the Directions for Use". Proof read the final printed label.</li> </ol> </li> </ol>		
Signature of Approving Official: <b>Joanne I. Miller</b> Product Manager 23 Herbicide Branch Registration Division (7505P)		Date: <b>26 JUN 2008</b>

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Submit one copy of the revised final printed label for the record.

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

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



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**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS  
CAUTION**

Causes moderate eye irritation. Harmful if swallowed. Avoid contact with eyes, skin 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, and 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, use detergent and hot water. Keep and wash PPE separately from other laundry.

**USER SAFETY RECOMMENDATIONS**

Users 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**

Combustible. 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

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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 and 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, forests, nurseries, or greenhouses.

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

**TANK MIXES**

**NOTICE: Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or applicator advisor. Read and follow the entire label of each product to be used in the tank mix with this product.**

**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**

**FOR USE ON:** Soybeans, Cotton, Ornamentals, 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<sup>1</sup> and Corm<sup>1</sup> Vegetables), Tomatoes, Peppers (bell and non-bell), Eggplants (and other Fruiting Vegetables), Carrot, Radish, Garden Beet, Horseradish (and other Root Vegetables<sup>2</sup>), Leaf Lettuce, Broccoli, Cabbage, Cauliflower (and other Head and Stem Brassica Vegetables<sup>3</sup>), Mustard Greens (and other Leafy Brassica Greens<sup>4</sup>), Spinach, Celery, Rhubarb (and other Leaf Petioles<sup>5</sup>), 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.

<sup>1</sup> Other tuber and corm vegetables approved for use with ARC-CLETHODIM 2# include: arracacha, arrowroot, Chinese artichoke, Jerusalem artichoke, edible burdock, edible canna, bitter and sweet cassava, chayote (root), chufa, dasheen (taro), ginger, leren, taniel, turmeric and bean yam.

<sup>2</sup> Other root vegetables approved for use with ARC-CLETHODIM 2# include: burdock, edible; celeriac; chervil, turnip-rooted; chicory; ginseng; parsley, turnip-rooted; parsnip; radish, oriental; rutabaga; salsify; salsify, black; salsify, Spanish; skirret and turnip.

<sup>3</sup> Other head and stem brassica vegetables approved include: Chinese broccoli; Brussels sprouts; Chinese (napa) cabbage; Chinese mustard; cavalo broccoli; and kohlrabi.

<sup>4</sup> Other leafy brassica greens approved for use with ARC-CLETHODIM 2# include: broccoli raab, cabbage, Chinese (bok choy); collards; kale, mizuna, mustard greens; mustard spinach; rape greens and turnip greens.

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

ARC-CLETHODIM 2# is not recommended for use on vegetable crops being grown for seed production unless specific use directions are provided in this label.

ARC-CLETHODIM 2# is a selective postemergence herbicide for control of annual and perennial grasses. ARC-CLETHODIM 2# does not control sedges or broadleaf weeds. Repeated use of ARC-CLETHODIM 2# (or similar postemergence grass herbicide 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.

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

Do not allow ARC-CLETHODIM 2# to come in contact with desirable grass crops such as corn, rice, sorghum, small grains, or turf, as these and other grass crops will be injured or killed. Minor leaf spotting may occur on treated plants under certain environmental conditions. New foliage is not affected.

**Control Symptoms**

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. Symptoms will generally be observed in 7 to 14 days after application, depending on grass species treated and environmental conditions.

**APPLICATION INFORMATION**

**Timing of Applications**

Apply ARC-CLETHODIM 2# postemergence to actively growing grasses according to rate table recommendations. Applications made to grass plants stressed by insufficient moisture, hot or cold temperatures, or to grass plants exceeding recommended growth stages may result in unsatisfactory control. Do not apply under these conditions.

In arid regions where irrigation is used to supplement limited rainfall, ARC-CLETHODIM 2# should be applied as soon as possible after an irrigation (within 7 days). In arid regions, a second application of ARC-CLETHODIM 2# will generally provide more effective control of perennial grass weeds than a single application. Make 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 ARC-CLETHODIM 2# may reduce weed control. DO NOT APPLY ARC-CLETHODIM 2# if rainfall is expected within one hour, since control may be reduced.

**ADDITION OF ADJUVANT OR CROP OIL CONCENTRATE**

Crop	Adjuvant Recommendations
Soybeans, Alfalfa, Dry Bean, Cotton, Peanuts, Sugar Beet, Sunflower, Potatoes	<p>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.</p> <p>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 ARC-CLETHODIM 2# 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, rhizome Johnsongrass, red rice, wild oats, volunteer cereals and volunteer corn.</p>
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 Greens (and other Leafy Brassica Greens), Spinach, Celery, Rhubarb (and other leafy petioles), Cranberry, Sweet Potatoes, Yams (and other tuberous and corm vegetables), Canola, Flax, Mustard Seed, Tomatoes, Peppers (bell and non-bell), Eggplants (and other fruiting vegetables), Strawberry, Squash (including Pumpkins), Cucumber, Melons (including Cantaloupes and Watermelons), Mint, and Clover	<p>Always use a crop oil concentrate at 1% v/v to finish spray volume unless tank mix instructions indicate otherwise.</p> <p>Addition of liquid fertilizer is not recommended for these crops.</p>
Ornamental Plants, Non-Bearing Food Crops	<p>Add non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v). Use of crop oil concentrate is not recommended since it may injure flowers and foliage.</p>
Conifer Trees, Fallow Land (and other non-producing agricultural areas), and Non-Crop or Non-Planted Areas	<p>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.</p>
<p>*Acceptable crop oil concentrates would be those that contain a minimum of 80% oils and 15% emulsifier. A crop oil concentrate must contain either a petroleum or</p>	



vegetable oil base and must meet all the following criteria: 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.

**Ground Application**

Use of sufficient spray volumes and pressure is essential to ensure complete coverage. Use a minimum of 5 gals. and a maximum of 40 gals. of spray solution per acre. Under the following conditions a minimum of 10 gals. per acre is required: 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 gals. per acre under these conditions can result in poor coverage and reduced grass control requiring repeat applications. Spray pressures should reflect a minimum of 30 psi and a maximum of 60 psi at the nozzle. Do not use flood nozzles.

Applications to onions (dry bulbs and green), garlic or shallots (dry bulbs and green) should be made in a minimum of 20 gals. of spray solution per acre.

**Air Application**

Use a minimum of 3 gals. of spray solution per acre unless otherwise directed in this label. Increase spray volumes up to 10 gals. as grass or crop foliage becomes dense. For onions (dry bulbs and green), garlic or shallots (dry bulbs and green): When applying by air do not exceed 8 fl. oz./A in a single application. In California, air applications to onions, garlic, or shallots should be made in a minimum of 20 gals. of spray solution per acre.

**NOTE: Crop injury may occur when ARC-CLETHODIM 2# is applied to onions, garlic or shallots with aerial equipment.**

**Spot Treatment**

When using hand sprayers or high volume sprayers utilizing hand guns, mix ¼% to 1/2% (0.33 oz. to 0.65 oz. per gal.) ARC-CLETHODIM 2# and treat to wet vegetation, while not allowing runoff of spray solution. For uses requiring crop oil concentrate, include crop oil concentrate at 1% (1.3 oz. per gal.) by volume. For uses requiring non-ionic surfactant, include non-ionic surfactant at ¼% (0.33 oz. per gal.) by volume.

**NOTE: If ARC-CLETHODIM 2# 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 may occur.**

**CHEMIGATION  
ONION (Dry Bulbs and Green) AND GARLIC  
SPRINKLER IRRIGATION APPLICATION**

This product may be applied to onions and garlic by sprinkler systems including center pivot, lateral move, end tow, side (wheel) row, travelers, big gun, solid set, or hand move. Do not apply by chemigation to any other crop or to this crop using any other type of irrigation system.

Apply ARC-CLETHODIM 2# at the high rate recommended for annual grasses (16 fl. oz./A) 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.

Apply ARC-CLETHODIM 2# 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 ARC-CLETHODIM 2# 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.

It is not recommended that ARC-CLETHODIM 2# be applied through an irrigation system connected to a public water system. Public water system means a system for the provision to the public piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

**Use Precautions**

1. Apply this product only through irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, travelers, big gun, solid set, or hand move. Do not apply this product through any other type of irrigation system.
2. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop may result from non-uniform distribution of treated water.
3. If you have any questions about calibration, you should contact your State Extension Service Specialists, equipment manufacturers or other experts.
4. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the label-prescribed safety devices for public water supplies are in place.
5. A person knowledgeable of chemigation system and responsible for its operation or under supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
6. 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 backflow.
7. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
8. 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.
9. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

- 10. 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.
- 11. 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.
- 12. Do not apply when wind speed favors drift beyond the area intended for treatment.

### RESTRICTIONS AND LIMITATIONS

#### GENERAL

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 ARC-CLETHODIM 2# or reduced grass control may result.

ARC-CLETHODIM 2# is not recommended for use on vegetable crops being grown for seed production unless specific use directions are provided.

For canola, flax, mustard seed, clover and radish crops, do not apply more than 8 fl. oz. of ARC-CLETHODIM 2# (0.08 lb. ai) per acre per season. For clover and radish crops, do not apply more than 16 fl. oz of ARC-CLETHODIM 2# (0.25 lb ai) per acre per season. For all other crops, do not apply more than 32 fl. oz. of ARC-CLETHODIM 2# (0.50 lb ai) per acre per season. Application on Long Island, New York, is restricted to no more than 16 fl. oz. of ARC-CLETHODIM 2# (0.25 lb. ai) per acre per season.

Do not apply more than 8 fl. oz/A of ARC-CLETHODIM 2# **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, and strawberry. Do not apply more than 5 fl. oz./A of ARC-CLETHODIM 2# per application to canola, flax or mustard seed. **Exceeding these recommendations may result in unacceptable crop injury.**

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

Optimal perennial grass control can be obtained if rhizomes or stolons are cut up by preplant tillage practices (discing, 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, results in a very staggered, non-uniform weed emergence. Due to this non-uniform weed emergence, no fewer than two ARC-CLETHODIM 2# applications per season per year are recommended at the appropriate weed-growth stage rate under continuous no-till conditions.

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

While all the vegetable crops on this label have been tested and are tolerant to ARC-CLETHODIM 2#, not all specialty varieties of these crops have been tested. It is advised

that, before applying ARC-CLETHODIM 2# to specialty varieties of vegetable crops on this label, 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. Always read and follow the restriction and limitations for all products whether used alone or in a tank mix. The most restrictive labeling of any product used applies in tank mixtures, including all crop rotational and other crop restrictions. Tank mixes of ARC-CLETHODIM 2# and broadleaf herbicides may result in reduced grass control. If grass regrowth occurs, an additional application of ARC-CLETHODIM 2# may be necessary.

**AVOID SPRAY DRIFT**

Do not allow spray from ground or aerial equipment to drift onto adjacent land or crops. When drift may be a problem, do everything possible to reduce spray drift, including:

- Do not spray if wind speeds are or become excessive.
- Do not spray if wind speed is 10 MPH or greater. If sensitive crops or plants are downwind, extreme caution must be used under all conditions.
- Do not spray if winds are gusty.
- Use extreme caution when conditions are favorable for drift (high temperatures, drought, low relative humidity), especially when sensitive plants are located nearby.
- Do not apply when a temperature inversion exists. If inversion conditions are suspected, consult with local weather services before making an application.
- Further reductions in drift can be obtained by:
  1. Using large droplet size sprays. Do not use nozzles that produce small droplets. Orient nozzles downward and slightly backward as needed to reduce drift for ground applications.
  2. Orienting nozzles straight back with the windstream, using straight stream orifices for aerial applications. Use the lowest number of nozzles practical with the largest possible orifice size to obtain the minimum 3 GPA volume. Application height and boom length should be set according to manufacturer's instructions to minimize drift.
  3. Increasing the volume of spray mixture (for example a minimum of 10 GPA for ground applications) by using higher flow rate nozzles. Using lower pressure with the appropriate nozzle to obtain higher volumes will also reduce drift.
  4. Applying as close to target plants as practical while maintaining a good spray pattern for adequate coverage.

**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.**

**CROP-SPECIFIC RESTRICTIONS AND LIMITATIONS FOR ARC-CLETHODIM 2#**

Crops <sup>1</sup>	Minimum Time from Application to Harvest (PHI)	Use Rates Per Acre	Crop Oil Concentrate Rates Per Acre <sup>(2)</sup>	Special Use Instructions
Alfalfa including: Sainfoin, Holy Clover, Birdsfoot Trefoil <sup>(3)</sup>	15 days before grazing,	6 – 16 fl. oz. <sup>(4)</sup>	1 qt. by ground or 1% v/v (but not	Do not plant rotational crops until 30 days after application of ARC-CLETHODIM 2#. <sup>(6)</sup>

	feeding or harvesting (cutting) for forage or hay		less than 1 pt./A by air <sup>(5)</sup>	The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
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 <sup>(5)</sup>	Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses. The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
Beet, 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. For repeat applications make on a minimum of a 14 day interval.
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. For repeat applications make on a minimum of a 14 day interval.
Canola	75 days	4 – 5 fl. oz.	1% v/v in the finished spray volume.	Do not apply after crop has begun bolting. Crop injury may occur when ARC-CLETHODIM 2# is applied during the bloom period. Do not exceed 5 fl. oz./A in a season.
Celery including: Cardoon Chinese Celery Celtuce Florence Fennel Swiss Chard	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. For repeat applications make on a minimum of 14 day interval.
Clover (Idaho, Oregon, Washington Only)	15 days before grazing, feeding, or harvesting (cutting) for forage or hay	6 – 16 fl. oz.	1% v/v in the finished spray volume.	For use on clover grown in Idaho, Oregon and Washington only. Do not exceed 16 fl. oz. of ARC-CLETHODIM 2# (0.25 lb. ai) per acre in a season.
Cotton	60 days	6 – 16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air <sup>(5)</sup>	Do not graze treated fields or feed treated forage or hay to livestock. The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red

				rice, wild oats, volunteer cereals, and volunteer corn.
<b>Cranberry</b>	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. For repeat applications make on a minimum of a 14 day interval.
<b>Cucurbits</b> including: Cantaloupes (all) Cucumber Gherkin Honeydew Melon Muskmelons (all) Pumpkin 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. For repeat applications make on a minimum of a 14 day interval.
<b>Fallow Land</b> <b>Conifer Trees</b> (and other non-producing agricultural areas) <b>Non-Crop or Non-Planted Areas</b>	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 after application unless clethodim is registered for use in that crop.
<b>Flax</b>	75 days	4 – 5 fl. oz.	1% v/v in the finished spray volume.	Apply prior to bloom. Crop injury may occur when ARC-CLETHODIM 2# is applied during the bloom period. Do not exceed 5 fl. oz. (0.06 lb. ai) per acre in a season.
<b>Fruiting Vegetable</b> (Except tomato) including: Eggplant, Groundcherry, Pepino, Peppers (all), Tomatillo	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. For repeat applications make on a minimum of a 14 day interval.
<b>Head and Stem Brassica Vegetables,</b> 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. For repeat applications make on a minimum of 14 day interval.
<b>Leafy Brassica Greens</b> 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. For repeat applications make on a minimum of a 14 day interval.

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. For repeat applications make on a minimum of a 14 day interval.
Mint	21 days	6 – 16 fl. oz. <sup>(4)</sup>	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. For repeat applications make on a minimum of a 14 day interval.
Mustard Seed	75 days	4 – 5 fl. oz.	1% v/v in the finished spray volume.	Do not apply after crop has begun bolting. Crop injury may occur when ARC-CLETHODIM 2# is applied during the bloom period. Do not exceed 5 fl. oz. (0.08 lb. ai) of ARC-CLETHODIM 2# per acre in a season.
Onions (Dry Bulbs Only) Garlic Shallots (Dry Bulbs Only)	45 days	6 – 16 fl. oz. <sup>(7), (8)</sup>	1% v/v in the finished spray volume.	Minimum of 20 gals./A spray volume by ground in entire U.S. Minimum of 20 gals./A spray volume by air in California <sup>(9)</sup>
Onions, Green including: Leeks, Scallions or Spring Onions, Japanese Bunching Onions, Green Shallots, Green Eschalots	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. For repeat applications make on a minimum of a 14 day interval.
Ornamentals	N/A	6 – 16 fl. oz.	Use of crop oil concentrate is not recommended since it may injure flowers and foliage. See Special Use Instructions	Add a non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v). Sugar maples cannot be tapped for syrup within one year of ARC-CLETHODIM 2# application.
Non-Bearing Food Crops	N/A	6 – 8 fl. oz. <sup>(8)</sup>		
Peanut	40 days	6 – 16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air <sup>(5)</sup>	The addition of AMS has shown improved grass control for difficult to control species including; quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
Potato	30 days	6 – 16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air <sup>(5)</sup>	The addition of AMS has shown improved grass control for difficult to control species including; quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
Radish	15 days	6 – 8 fl. oz.	1% v/v in the finished	Do not apply more than 8 fl. oz./A in a single application.

			spray volume.	Do not apply more than 16 fl. oz. (0.25 lb. ai) per acre in a season. For repeat applications make on a minimum of 14 day interval.
<b>Root Vegetables (except Radish), including: Chicory, Ginseng, Horseradish, Turnip</b>	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. For repeat applications make on a minimum of a 14 day interval.
<b>Rhubarb</b>	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. For repeat applications make on a minimum of a 14 day interval.
<b>Soybean</b>	60 days	6 – 16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air <sup>(5)</sup>	Do not graze treated fields or feed treated forage or hay to livestock. Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses. The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals and volunteer corn.
<b>Spinach</b>	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. For repeat applications make on a minimum of a 14 day interval.
<b>Strawberry</b>	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. For repeat applications make on a minimum of a 14 day interval.
<b>Sugar Beet</b>	40 days	6 – 16 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air <sup>(5)</sup>	Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses. The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Sunflower</b>	70 days	6 – 16 fl. oz.	1 qt. by ground or 1% v/v (but not	The addition of AMS has shown improved grass control for difficult to control species



			less than 1 pt./A) by air <sup>(5)</sup>	including; quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
Sweet Potato, Yam and other tuberous and corm vegetables (except potato), including: Artichoke Chinese Jerusalem Cassava Bitter Sweet Ginger	30 days	6 – 16 fl. oz.	1% v/v in the finished spray volume.	--
Tomato	20 days	6 – 16 fl. oz.	1% v/v in the finished spray volume.	--

N/A = Not Applicable

- (1) ARC-CLETHODIM 2# 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. A crop oil concentrate must contain either a petroleum or vegetable oil base and must meet all the following criteria: 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. See the Addition of Adjuvant and Crop Oil Concentrate section for further information.
- (3) ARC-CLETHODIM 2# may be applied to seedling or established alfalfa grown for seed, hay, silage, green chop, or direct grazing.
- (4) For weed control in established alfalfa and mint, the minimum use rates is 8 fl. oz./A
- (5) 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 ARC-CLETHODIM 2# applications, in addition to the recommended rate of crop oil concentrate.
- (6) Do not apply ARC-CLETHODIM 2# 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) For ground applications to garlic or shallots, do not exceed 8 fl. oz./A in a single application. For air applications to onions, garlic or shallots, do not exceed 8 fl. oz./A in a single application. For garlic and shallots, do not exceed 2 applications per season. In CA for air applications to onions, do not exceed 2 applications per season.
- (8) If ARC-CLETHODIM 2# is applied as a spot treatment to onions, garlic, shallots, or non-bearing food crops, care should be taken to not exceed the maximum rate allowed on a "per acre" basis or crop injury may occur.
- (9) In California, do not apply ARC-CLETHODIM 2# to onions, garlic, or shallots until crop has at least two full leaves. In California, 14 day spray intervals are recommended between the application of ARC-CLETHODIM 2# and liquid nitrogen or other herbicide applications. Injury to crop may 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<sup>1</sup> and Corm<sup>1</sup> Vegetables), TOMATOES, PEPPERS (bell and non-bell), EGGPLANTS (and other Fruiting Vegetables), CARROT, RADISH, GARDEN BEET, HORSERADISH, (and other Root Vegetables<sup>2</sup>), LEAF LETTUCE, BROCCOLI,**

**CABBAGE, CAULIFLOWER (and other Head and Stem Brassica Vegetables<sup>3</sup>), MUSTARD GREENS (and other Leafy Brassica Greens<sup>4</sup>), SPINACH, CELERY, RHUBARB (and other Leaf Petioles<sup>5</sup>), CRANBERRY, STRAWBERRY, SQUASH (including PUMPKINS), CUCUMBER, MELONS (including CANTALOUPE and WATERMELONS), MINT, CLOVER (grown in Idaho, Oregon and Washington only), CONIFER TREES, NON-BEARING FOOD CROPS, AND NON-CROP OR NON-PLANTED AREAS.**

<sup>1</sup> Other tuber and corm vegetables approved for use with ARC-CLETHODIM 2# 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.

<sup>2</sup> Other root vegetables approved for use with ARC-CLETHODIM 2# include: burdock, edible; celeriac; chervil, turnip-rooted; chicory; ginseng; parsley, turnip-rooted; parsnip; radish, oriental; rutabaga; salsify; salsify, black; salsify, Spanish; skirret and turnip.

<sup>3</sup> Other head and stem brassica vegetables approved include: Chinese broccoli; Brussels sprouts; Chinese (napa) cabbage; Chinese mustard; cavalo broccoli; and kohlrabi.

<sup>4</sup> Other leafy brassica greens approved for use with ARC-CLETHODIM 2# include; broccoli raab, cabbage, Chinese (bok choy); collards, kale, mizuna, mustard greens, mustard spinach; rape greens and turnip greens.

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

**IMPORTANT**

Plant tolerance to ARC-CLETHODIM 2# 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 ARC-CLETHODIM 2# have investigated the safety factor to plants not listed on the label.

**NON-BEARING FOOD CROPS**

**ARC-CLETHODIM 2# SHOULD NOT BE APPLIED TO NON-BEARING FRUIT OR NUT CROPS WHICH ARE GROWN FOR ROOT STOCK.**

**Crop injury to non-bearing fruit and nut crops can occur if ARC-CLETHODIM 2# is improperly applied. ARC-CLETHODIM 2# should not be applied directly over the top of these plant types. Instead spray should be directed 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 ARC-CLETHODIM 2# application.

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

**CONIFER TREES**

ARC-CLETHODIM 2# 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	<i>Thuja occidentalis</i>
Cedars	<i>Cedrus</i> spp.
Cypress	<i>Taxodium</i> spp.
Fir, Douglas	<i>Pseudotsuga menziesii</i>
Firs	<i>Abies</i> spp.
Hemlock, Canadian	<i>Tsuga canadensis</i>
Hemlock, Western	<i>Tsuga heterophylla</i>
Pines	<i>Pinus</i> spp.
Spruces	<i>Picea</i> spp.
Yew	<i>Taxus</i> spp.

**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, and post-harvest croplands. Also beneath greenhouse benches and around golf courses.

**RECOMMENDATIONS FOR ANNUAL GRASSES  
(EXCEPT FOR IN ESTABLISHED ALFALFA AND MINT)**

- Apply only to actively growing grasses at recommended weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Use the high rate under heavy grass pressure and/or when grasses are at maximum height.
- Do not apply more than 8 fl. oz./A of ARC-CLETHODIM 2# 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 and strawberry. Do not apply more than 5 fl. oz./A of ARC-CLETHODIM 2# per application to canola, flax, or mustard seed.

Grass Species	Scientific Name	Weed Height* (Inches)	Rate fl. oz./Acre	High Rate <sup>(4)</sup>
Barnyardgrass	<i>Echinochloa crus-galli</i>	2 to 8	6	8
Broadleaf Signalgrass	<i>Brachiaria platyphylla</i>	2 to 6	6	8
Brome				
California	<i>Bromus carinatus</i>	2 to 6	6	8
Cheatgrass	<i>Bromus secalinus</i>	2 to 6	6	8
Downy	<i>Bromus tectorum</i>	2 to 6	6	8
Ripgut	<i>Bromus diandrus</i>	2 to 6	6	8
Canarygrass	<i>Phalaris canariensis</i>	1 to 4	6	8
Crabgrass				
Hairy	<i>Digitaria adscendens</i>	2 to 6**	6	8
Large	<i>Digitaria sanguinalis</i>	2 to 6**	6	8
Smooth	<i>Digitaria ischaemum</i>	2 to 6**	6	8
Southern	<i>Digitaria ciliaris</i>	2 to 6**	6	8
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	2 to 6**	6	8
Fall Panicum	<i>Panicum dichotomiflorum</i>	2 to 8	6	8
Field Sandbur	<i>Cenchrus incertus</i>	2 to 6	6	8
Foxtail				
Giant	<i>Setaria faberi</i>	2 to 12	6	8
Green	<i>Setaria viridis</i>	2 to 8	6	8
Yellow	<i>Setaria glauca</i>	2 to 8	6	8
Goosegrass	<i>Eleusine indica</i>	2 to 6**	6	8
Itchgrass	<i>Rottboellia cochinchinensis</i>	2 to 6	6	8
Junglerice	<i>Echinochloa colona</i>	2 to 6	6	8
Lovegrass (Stinkgrass)	<i>Eragrostis cilianensis</i>	2 to 6	6	8
Rabbitsfootgrass	<i>Polypogon monspeliensis</i>	1 to 4	6	8
Red Rice	<i>Oryza sativa</i>	1 to 3	6	8
Ryegrass				
Hardy	<i>Lolium remotum</i>	2 to 6	6	8

Italian	<i>Lolium multiflorum</i>	2 to 6	6	8
Seedling Johnsongrass	<i>Sorghum halepense</i>	4 to 10	6	8
Shattercane	<i>Sorghum bicolor</i>	6 to 18	6	8
Southwestern Cupgrass	<i>Eriochloa gracillis</i>	2 to 6	6	8
Sprangletop				
Amazon	<i>Leptochloa panicoides</i>	2 to 6	6	8
Bearded	<i>Leptochloa fascicularis</i>	2 to 6	6	8
Mexican	<i>Leptochloa uninervia</i>	2 to 6	6	8
Red	<i>Leptochloa filiformis</i>	2 to 6	6	8
Texas Panicum	<i>Panicum texanum</i>	2 to 6	6	8
Volunteer Cereals <sup>(3)</sup>				
Barley	<i>Hordeum vulgare</i>	2 to 6	6	8
Oats	<i>Avena sativa</i>	2 to 6	6	8
Rye	<i>Secale cereale</i>	2 to 6	6	8
Wheat	<i>Triticum aestivum</i>	2 to 6	6	8
Volunteer Corn <sup>(2)</sup>	<i>Zea mays</i>	4 to 12	4	6
Volunteer Corn (S.R.) <sup>(1)</sup>	<i>Zea mays</i>	4 to 12	8	(Suppression only)
Volunteer Corn <sup>(2)</sup>	<i>Zea mays</i>	12 to 24	6	8
Volunteer Grain Sorghum	<i>Sorghum bicolor</i>	8 to 12	6	8
Wild Oats	<i>Avena fatua</i>	2 to 6	6	8
Wild Proso Millet	<i>Panicum miliaceum</i>	2 to 10	6	8
Witchgrass	<i>Panicum capillare</i>	2 to 8	6	8
Woolly Cupgrass	<i>Eriochloa villosa</i>	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) When a cereal grain crop (such as wheat) is interseeded for crop establishment or is planted as wind breaks to aid crop establishment, the minimum ARC-CLETHODIM 2# use rate for control is 8 fl. oz./A.

(4) Rates higher than 8 fl. oz./A may be applied in certain geographic areas, cropping situations, or environmental conditions or cropping situations, where experience has shown that higher rates are needed for satisfactory control of annual grasses. In these situations, rates from 8 to 16 fl. oz./A may be applied. Do not apply more than 8 fl. oz./A of ARC-CLETHODIM 2# 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, and strawberry. Do not apply more than 5 fl. oz./A of ARC-CLETHODIM 2# per application to canola, flax or mustard seed.

**RECOMMENDATIONS FOR ANNUAL & PERENNIAL GRASS CONTROL IN ESTABLISHED ALFALFA AND MINT WITH ARC-CLETHODIM 2#**

GRASS SPECIES	WEED STAGE	RATE (FL. OZ/A)	HIGH RATE
Annual & Perennial Grasses Listed in Grass Table	See Table	8	16

**Mowing:** The best control of annual grasses can be achieved by applying ARC-CLETHODIM 2# before grass weeds are mowed. Once a 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. These grasses, even though they may be an annual grass, may require repeated applications of ARC-CLETHODIM 2# for partial or complete control.

**Irrigated Alfalfa and Mint:** Irrigation practices can be very critical to the successful use of ARC-CLETHODIM 2# 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.

**Annual Grass Control:** Apply ARC-CLETHODIM 2# at the grass sizes indicated in the Recommendation for Annual Grass Table and rates indicated above (8 to 16 fl. oz./A). If a grass has been cut, apply ARC-CLETHODIM 2# after active growth has resumed and regrowth has reached the minimum height and before it reaches the maximum height indicated. Apply 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 ARC-CLETHODIM 2# may vary from region to region. Also some annuals germinate over an extended period of time, and because control of small grasses is desired, applications 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:** ARC-CLETHODIM 2# 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 ARC-CLETHODIM 2#**

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

\*Use a minimum of 8 fl. oz./A to control annual bluegrass in seedling and established alfalfa and mint.

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.

**DIRECTIONS FOR USE IN DRY BEANS, SOYBEANS & SUGAR BEETS AT A REDUCED RATE**

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

- Apply only to actively growing grasses at recommended weed heights.
- Apply 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 <sup>(1)</sup>
Barnyardgrass	<i>Echinochloa crus-galli</i>	1 to 4	4
Broadleaf Signalgrass	<i>Brachiaria platyphylla</i>	1 to 4	5
Crabgrass			
Large	<i>Digitaria sanguinalis</i>	1 to 3*	4
Large	<i>Digitaria sanguinalis</i>	1 to 4*	5
Smooth	<i>Digitaria ischaemum</i>	1 to 3*	4
Smooth	<i>Digitaria ischaemum</i>	1 to 4*	5
Southern	<i>Digitaria ciliaris</i>	1 to 4*	5
Fall panicum	<i>Panicum dichotomiflorum</i>	1 to 4	4
Foxtail			
Giant	<i>Setaria faberi</i>	1 to 4	4
Green	<i>Setaria viridis</i>	1 to 4	4
Millet	<i>Setaria italica</i>	1 to 4	5
Yellow	<i>Setaria glauca</i>	1 to 4	4
Seedling Johnsongrass	<i>Sorghum halepense</i>	1 to 6	5
Shattercane	<i>Sorghum bicolor</i>	4 to 10	4
Texas Panicum	<i>Panicum texanum</i>	1 to 4	5
Volunteer Corn**	<i>Zea mays</i>	4 to 12	4
Wild Proso Millet	<i>Panicum milaceum</i>	1 to 6	4
Wild Oats	<i>Avena fatua</i>	1 to 4	5

\*Length of lateral growth

\*\* Not S.R. Corn

<sup>(1)</sup> Always add a crop oil concentrate at 1 qt./A by ground application to the finished spray volume.

**DIRECTIONS FOR USE IN CANOLA, FLAX, AND MUSTARD SEED AT REDUCED RATES**

**RECOMMENDATIONS FOR ANNUAL GRASSES**

- Apply only to actively growing grasses at recommended weed heights.
- Apply 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 temperatures, and/or under very low humidity.

<b>Grass Species</b>	<b>Scientific Name</b>	<b>Weed Height (inches)</b>	<b>Rate (fl. oz./acre)</b>
Barnyardgrass	<i>Echinochloa crus-galli</i>	1 – 4	4
Crabgrass Large Smooth	<i>Digitaria sanguinalis</i> <i>Digitaria ischaemum</i>	1 – 4* 1 – 4*	5 5
Fall Panicum	<i>Panicum dichotomiflorum</i>	1 – 4	4
Foxtail Giant Green Yellow	<i>Setaria faberi</i> <i>Setaria viridis</i> <i>Setaria glauca</i>	1 – 4 1 – 4 1 – 4	4 5 5
Shattercane	<i>Sorghum bicolor</i>	4 – 10	4
Volunteer Cereals Barley Oats Wheat	<i>Hordeum vulgare</i> <i>Avena sativa</i> <i>Triticum aestivum</i>	1 – 4 1 – 4 1 – 4	5 5 5
Volunteer Corn**	<i>Zea mays</i>	4 – 12	4
Wild oats	<i>Avena fatua</i>	1 – 4	5
Wild Proso Millet	<i>Panicum miliaceum</i>	1 – 6	4

\* Length of lateral growth

\*\* Not S.R. corn.

**RECOMMENDATIONS FOR PERENNIAL GRASSES**

- Apply only to actively growing grasses at recommended weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Use the high rate under heavy grass pressure and/or when grasses are at maximum height.
- Do not apply more than 8 fl. oz./A of ARC-CLETHODIM 2# 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, and strawberry. Do not apply more than 5 fl. oz./A of ARC-CLETHODIM 2# per application to canola, flax or mustard seed.



GRASS SPECIES/SCIENTIFIC NAME	WEED HEIGHT (INCHES)	RATE (FL. OZ./ACRE)	HIGH RATE
Bermudagrass ( <i>Cynodon dactylon</i> ) First Application Repeat Application(s) (if regrowth occurs)	3 (or up to 6" runners) 3 (or up to 6" runners)	8 8	16 16
Fescue, Tall ( <i>Festuca arundinacea</i> ) First Application Repeat Application(s) (if regrowth occurs)	4 to 8 4 to 8	8 8	16 16
Foxtail Barley ( <i>Hordeum jubatum</i> ) First Application Repeat Application(s) (if regrowth occurs)	2 to 6 2 to 6	8 8	16 16
Orchardgrass ( <i>Dactylis glomerata</i> ) First Application Repeat Application(s) (if regrowth occurs)	4 to 8 4 to 8	8 8	16 16
Quackgrass* ( <i>Agropyron repens</i> ) First Application Repeat Application(s) (if regrowth occurs)	4 to 12 4 to 12	8 8	16 16
Rhizome Johnsongrass ( <i>Sorghum halepense</i> ) First Application Repeat Application(s) (if regrowth occurs)	12 to 24 6 to 18	8 6	16 8
Wirestem Muhly ( <i>Muhlenbergia frondosa</i> ) First Application Repeat Application(s) (if regrowth occurs)	4 to 8 4 to 8	8 8	16 16
Perennial Bluegrass* [Roughstalk ( <i>Poa trivialis</i> )] [Kentucky ( <i>Poa prantensis</i> )] First Application Repeat Application(s) (if regrowth occurs)	2 to 4 2 to 4	8 8	16 16

\*Control of quackgrass and perennial bluegrass with ARC-CLETHODIM 2# 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 ARC-CLETHODIM 2# are unique to the characteristics of those products and contain restrictions and limitations that may be more restrictive than the ARC-CLETHODIM 2# label in certain considerations.

Those concerns may include, but are not limited to:

1. Geographic restrictions – all products are not registered for use in all areas and rates may vary from one region of labeled use to another;
2. Crop rotation restrictions;
3. Applicator certification requirements;

4. Worker safety rules (e.g. protective clothing, reentry time, posting);
5. Soil type or soil characteristics (e.g. pH, OM);
6. Maximum dosage or number of applications per season;
7. Rain free period required; or
8. Application timing (e.g. pre-harvest interval).
9. For all crops except clover and radish: Do not exceed a total of 32 fl. oz./A (0.5 lb. ai/A) of ARC-CLETHODIM 2# per season, whether applied alone or in tank mix applications.  
 For clover and radish: Do not exceed a total of 16 fl. oz. ARC-CLETHODIM 2# (0.25 lb. ai) per acre per season.  
 For Canola, mustard and flax: Do not exceed a total of 5 fl. oz ARC-CLETHODIM 2# (0.08 lb. ai) per acre per season.

**THE MOST RESTRICTIVE LABELING OF ANY PRODUCT USED IN A TANK MIX MUST BE FOLLOWED.**

**TANK MIX APPLICATION OF ARC-CLETHODIM 2# AND BROADLEAF HERBICIDES FOR CONTROL OF GRASSES AND BROADLEAF WEEDS**

- Apply only to actively growing grass and broadleaf weeds at recommended height or growth stage listed on each label.
- Apply when the first grass or broadleaf weed species in a mixed population reaches the recommended height or growth stage for treatment.
- Apply under favorable soil moisture and humidity that exist a few days after rainfall or within 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 applications may 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, make a second application of ARC-CLETHODIM 2#, as specified in the respective size and rate tables.
- Do not tank mix ARC-CLETHODIM 2# when broadleaf weeds are tall and/or dense enough to prevent proper grass coverage.

**MIXING INSTRUCTIONS**

Use the jar test to verify mixing and compatibility properties. Maintain agitation throughout the spray application. Failure to agitate the spray mixture may result in improper mixing of the herbicides and unsatisfactory weed control.

ARC-CLETHODIM 2# Tank Mix: Add 1/2 of the required water to the spray tank and begin agitation. Add the required amount of ARC-CLETHODIM 2# and mix thoroughly. Then add the required amount of tank mix partner and continue mixing. Finally, add the required amount of crop oil concentrate and/or the nitrogen fertilizer and the remaining water.

**INFORMATION ON ANTAGONISM**

Tank mixes of ARC-CLETHODIM 2# with postemergence broadleaf herbicides have shown some reduction or failure to control certain grass species, which would have otherwise been controlled when ARC-CLETHODIM 2# is applied alone. Activity of postemergence broadleaf herbicide in the tank mix is not affected.

27 7 45

**Table 1. ARC-CLETHODIM 2# TANK MIXES<sup>(3)</sup> TO CONTROL ANNUAL GRASSES WHEN USED AS A BURNDOWN IN NO-TILL SOYBEANS**

PRODUCT	PRODUCT RATE/ACRE <sup>(1)</sup>	GRASS HEIGHT (inches)	CROP OIL CONCENTRATE/ ACRE <sup>(2)</sup>	28%N OR 32%N QTS./A OR 2.5 TO 4.0 LBS. AMS
ARC-CLETHODIM 2# + 2,4-D ester	3 fl. oz.	Foxtail 1 to 3 Fall Panicum 1 to 3	1 qt.	1 to 2 qts./A or 2.5 to 4.0 lbs. AMS
	4 fl. oz.	Foxtail 1 to 4 Fall Panicum 1 to 4	1 qt.	1 to 2 qts./A or 2.5 to 4.0 lbs. AMS
	6 to 8 fl. oz. + 0.5 lb. ai	(See Grass Chart for grasses claimed)	1 qt.	1 to 2 qts./A or 2.5 to 4.0 lbs. AMS

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

(1) If regrowth occurs or an additional flush of new grass emerges, make a second application of ARC-CLETHODIM 2# according to the appropriate size and rate recommendations.

(2) Always use a crop oil concentrate with at least 15% emulsifier at the listed rate in the finished spray volume.

(3) The following products can be tank mixed with ARC-CLETHODIM 2# plus 2,4-D Ester: DUAL® MAGNUM, PROWL®, SENCOR® and SENCOR plus DUAL MAGNUM.

**ARC-CLETHODIM 2# MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN (Refer to the recommendation tables above for specific grasses and growth stages.)**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>			
	ANNUAL GRASSES	PERENNIAL GRASSES	CROP OIL CONCENTRATE <sup>(3)</sup> V/V	
			GROUND	AIR
ARC-CLETHODIM 2# + COBRA®	6 to 8 fl. oz. + 12.5 fl. oz.	8 to 16 fl. oz. + 12.5 fl. oz.	0.5 to 1%	1%
ARC-CLETHODIM 2# + BASAGRAN® 4 SL	8 to 10 fl. oz. + 1 to 2 pts.	10 to 16 fl. oz. + 1 to 2 pts.	1%	1%
ARC-CLETHODIM 2# + BLAZER® 2 SL	6 to 8 fl. oz. + 1 to 1.5 pts.	6 to 8 fl. oz. + 1 to 1.5 pts.	0.5 to 1%	1%
ARC-CLETHODIM 2# + FLEXSTAR® HL <sup>(5)</sup>	6 to 8 fl. oz. Refer to the FLEXSTAR HL label for specific application rates.	6 to 8 fl. oz. Refer to the FLEXSTAR HL label for specific application rates.	1%	1%
ARC-CLETHODIM 2# + CLASSIC® 25 DG	8 to 10 fl. oz. + 0.5 to 0.75 oz.	8 to 16 fl. oz. + 0.5 to 0.75 oz.	1%	1%
ARC-CLETHODIM 2# <sup>(4)</sup> + PURSUIT®	6 to 8 fl. oz. + 4 fl. oz.	8 to 16 fl. oz. + 4 fl. oz.	1%	1%

ARC-CLETHODIM 2# (4) + REFLEX® 2 LC	6 to 8 fl. oz. + 0.75 to 1.5 pts.	8 to 16 fl. oz. + 0.75 to 1.5 pts.	0.5 to 1%	1%
ARC-CLETHODIM 2# (4) + GALAXY™	8 to 10 fl. oz. + 32 fl oz.	--	0.5%	1%
ARC-CLETHODIM 2# (4) + COBRA + CLASSIC 25 DG	8 to 10 fl. oz. + 6 to 8 fl. oz. + 0.5 to 0.75 oz.	--	0.5%	1%
ARC-CLETHODIM 2# (4) + COBRA + BASAGRAN 4 SL	8 to 10 fl. oz. + 6 to 10 fl. oz. + 1 to 1.5 pts.	--	0.5%	1%
ARC-CLETHODIM 2# (4) + COBRA + PURSUIT	8 to 10 fl. oz. + 6 to 10 fl. oz. + 4 fl. oz.	--	0.5%	1%
ARC-CLETHODIM 2# (4) + STORM®	8 to 10 fl. oz. + 1.5 pts.	--	0.5%	1%
ARC-CLETHODIM 2# (4) + RESOURCE® + PURSUIT	8 to 10 fl. oz. + 4 fl. oz. + 4 fl. oz.	--	1%	1%
ARC-CLETHODIM 2# (4) + RESOURCE + BASAGRAN	8 to 10 fl. oz. + 4 fl. oz. + 1 pt.	--	1%	1%
ARC-CLETHODIM 2# (4) + RESOURCE + CLASSIC	8 to 10 fl. oz. + 4 fl. oz. + 0.5 oz.	--	1%	1%
ARC-CLETHODIM 2# (4) + COBRA + RESOURCE	6 to 8 fl. oz. + 6 fl. oz. + 4 fl. oz.	--	0.5%	1%

ARC-CLETHODIM 2# (4) + FIRSTRATE®	6 to 8 fl. oz. + 0.3 oz./A	8 to 16 fl. oz. + 0.3 oz./A	1%	--
ARC-CLETHODIM 2# (4) + COBRA + FIRSTRATE	6 to 8 fl. oz. + 6 to 8 fl. oz. + 0.3 oz./A	8 to 16 fl. oz. + 6 to 8 fl. oz. + 0.3 oz.	1%	--
ARC-CLETHODIM 2# (4) + RAPTOR® (1 AS)	6 to 8 fl. oz. + 4 to 5 fl. oz.	--	1%	--
ARC-CLETHODIM 2# (4) + COBRA + RAPTOR (1 AS)	6 to 8 fl. oz. + 6 to 8 fl. oz. + 4 to 5 fl. oz./A	--	1%	--
ARC-CLETHODIM 2# (4) + SYNCHRONY® STS®	6 to 8 fl. oz./A <sup>(6)</sup> + 0.5 oz.	--	1 qt./A	--
ARC-CLETHODIM 2# (4) + COBRA + SYNCHRONY STS	6 to 8 oz./A <sup>(6)</sup> + 4 to 8 fl. oz. + 0.5 oz./A	--	1 pt./A	--
ARC-CLETHODIM 2# (4) + RESOURCE	6 to 8 fl. oz. + 4 to 12 fl. oz./A	--	1 qt./A	--
ARC-CLETHODIM 2# (4) + FRONTROW™	8 to 10 fl. oz. + Refer to FRONTROW label for use rates	--	1%	--

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

(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) The addition of 1 to 2 qts./A of liquid fertilizer (10-34-0, or 32% N) is recommended when ARC-CLETHODIM 2# is tank mixed with PURSUIT, RESOURCE, GALAXY, STORM, FIRSTRATE, SYNCHRONY, RAPTOR, FRONTROW, COBRA plus CLASSIC, COBRA plus BASAGRAN, COBRA plus PURSUIT, COBRA plus FIRSTRATE, COBRA plus SYNCHRONY and COBRA plus RAPTOR. 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.

(5) Refer to FLEXSTAR HL label for geographic and rotational restrictions.

(6) Annual grasses and sizes controlled with these tank mixtures are those that are identified in the DIRECTIONS FOR REDUCED RATE USE IN SOYBEANS AT A REDUCED RATE table.

**ARC-CLETHODIM 2# TANK MIXED WITH COBRA® AND MSMA APPLIED POST DIRECTED TO COTTON**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> V/V	COMMENTS
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	
ARC-CLETHODIM 2# <sup>(4)</sup> + COBRA® + MSMA (4.0 lbs./gal.) or MSMA (6.6 lbs./gal.)	6 to 8 fl. oz.	8 to 16 fl. oz.	1% v/v	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. Refer to the ARC-CLETHODIM 2# label for weed height and species controlled.			
	See MSMA label for rates to control broadleaf weeds and height limitations for cotton. Refer to the ARC-CLETHODIM 2# label for weed height and species controlled.			

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

(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) 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 may result and a second (non-post directed) application of ARC-CLETHODIM 2# may be necessary.

**ARC-CLETHODIM 2# TANK MIXED WITH BUCTRIL® 4 EC TO CONTROL EMERGED WEEDS IN BXN COTTON AS A BROADCAST APPLICATION**

PRODUCT <sup>(1)</sup>	APPLICATION RATE/ACRE <sup>(2)</sup>	CROP OIL CONCENTRATE <sup>(3)</sup>	COMMENTS <sup>(7)</sup>
	ANNUAL GRASSES		
ARC-CLETHODIM 2# + BUCTRIL 4 EC <sup>(4,5,6)</sup>	8 to 16 fl. oz. See BUCTRIL 4 EC label for rates to control broadleaf weeds and height limitations for cotton.	1 qt./A	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, make a second application of ARC-CLETHODIM 2# 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 at 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 ARC-CLETHODIM 2# plus BUCTRIL tank mix within 75 days of harvest.
- (6) Do not exceed two applications of BUCTRIL before cotton is 12 inches tall and one application after cotton is 12 inches tall.
- (7) Use a minimum of 10 gals. of spray solution per acre.

**ARC-CLETHODIM 2# TANK MIXED WITH STINGER® APPLIED TO SUGAR BEET**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> V/V	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
ARC-CLETHODIM 2# + STINGER	6 to 8 fl. oz.	8 to 16 fl. oz.	1%	1%
See STINGER label for rates				

- (1) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of ARC-CLETHODIM 2# alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.
- (2) Broadleaf weed control may 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.

**ARC-CLETHODIM 2# TANK MIXED WITH BETAMIX® OR BETANEX® APPLIED TO SUGAR BEET**

PRODUCT <sup>(2)</sup>	WEEDS CONTROLLED		WEED HEIGHT (inches)	APPLICATION RATE/ACRE <sup>(1)</sup>
	COMMON NAME	SCIENTIFIC NAME		
ARC-CLETHODIM 2# <sup>(3)</sup> + BETAMIX OR BETANEX	Barnyardgrass	<i>Echinochloa crus-</i>	1 to 3	8 fl. oz.
	Foxtail	<i>galli</i>	1 to 3	
	Foxtail Millet	<i>Setaria</i> spp.	1 to 3	
	Wild Oat	<i>Setaria italica</i>	1 to 3	
	Wild Proso	<i>Avena fatua</i>	1 to 3	
	Millet	<i>Panicum miliaceum</i>		
			See BETAMIX label for rates to control broadleaf weeds. No additives are recommended in the tank mix.	
			See BETANEX label for rates to control broadleaf weeds. No additives are recommended in the tank mix.	

- (1) Do not use crop oil concentrate. No additives are recommended in the tank mix.
- (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) If grass regrowth occurs or an additional flush of new grass emerges, make a second application of ARC-CLETHODIM 2# at full label rate with appropriate rate of crop oil concentrate.

**TANK MIX APPLICATION OF ARC-CLETHODIM 2# AND 2,4-DB HERBICIDE FOR THE CONTROL OF GRASSES AND BROADLEAF WEEDS IN ALFALFA**

A tank mix of ARC-CLETHODIM 2# plus 2,4-DB (up to 1.0 lb. ai./A) can be used to control grass and broadleaf weeds listed on the two product labels. Include a crop oil concentrate containing at least 15% emulsifiers at 1% v/v in the finished spray. Follow rate and other recommendations on the individual herbicide labels when applying this tank mix.

NOTE: ARC-CLETHODIM 2# 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.

**TANK MIX APPLICATION OF ARC-CLETHODIM 2# AND PURSUIT HERBICIDE FOR THE CONTROL OF GRASSES AND BROADLEAF WEEDS IN ALFALFA**

A tank mix of ARC-CLETHODIM 2# plus PURSUIT herbicide or PURSUIT DG herbicide can be used to control annual grass and broadleaf weeds listed on the two product labels. Include a crop oil concentrate at 1% v/v in the finished spray. For annual grass control in alfalfa using ARC-CLETHODIM 2# plus PURSUIT, use 8 to 16 fl. oz./A of ARC-CLETHODIM 2#.

Before using this tank mix, read and understand the PURSUIT and PURSUIT DG herbicide 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.

**TANK MIX APPLICATION OF ARC-CLETHODIM 2# AND INSECTICIDES FOR CONTROL OF GRASS WEEDS AND INSECTS IN SOYBEANS, COTTON & PEANUTS**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		
	ANNUAL GRASSES	PERENNIAL GRASSES	CROP OIL CONCENTRATE (V/V) <sup>(3)</sup>
ARC-CLETHODIM 2# + ORTHENE® 75 S or ORTHENE 97 (for use in cotton and peanuts only)	6 to 8 fl. oz. + 0.33 to 1.33 lbs.  0.25 to 1.0 lb.	8 to 16 fl. oz. + 0.33 to 1.33 lbs.  0.25 to 1.0 lb.	1%
ARC-CLETHODIM 2# + ORTHENE 90 S <sup>(4)</sup>	6 to 8 fl. oz. + 0.25 to 1 lb.	8 to 16 fl. oz. + 0.25 to 1 lb.	1%



ARC-CLETHODIM 2# + DANITOL® 2.4 EC(5) (for use in cotton and peanuts only)	6 to 8 fl. oz. + 10 2/3 to 16 fl. oz.	8 to 16 fl. oz. + 10 2/3 to 16 fl. oz.	1%
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- (1) If grass regrowth occurs, or an additional flush of new grass emerges, make a second application of ARC-CLETHODIM 2# alone (without a tank mix insecticide) according to the appropriate size and rate recommendations.
- (2) Refer to ARC-CLETHODIM 2# 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) Insecticide tank mix use with ORTHENE 90 S in soybeans is permitted only in a state having an approved Section 24(c) registration for ORTHENE 90 S use in soybean.
- (5) DANITOL tank mix is labeled for use in cotton and peanuts only, not soybeans.

**TANK MIX APPLICATION OF ARC-CLETHODIM 2# AND INSECTICIDES FOR THE CONTROL OF GRASS WEEDS AND INSECTS IN ALFALFA**

ARC-CLETHODIM 2# can be tank mixed with the following insecticides for use in alfalfa: BAYTHROID®, Dimethoate, LORSBAN®, POUNCE® or WARRIOR®. The ARC-CLETHODIM 2# rate should be 6 to 8 fl. oz./A for annual grass control in seedling alfalfa, minimum of 8 fl. oz./A for annual grass control in established alfalfa and 8 to 16 fl. oz./A for perennial grass control. Crop oil concentrate should be added at the rate of 1.0 to 2.0 pts./A. For the ARC-CLETHODIM 2# 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.

Certain insecticides may cause temporary phytotoxic symptoms on alfalfa foliage. Refer to the insecticide label for further information. It is suggested that prior to using any of these insecticide/herbicide tank mixtures, that a small area of the field be treated first and observations for crop injury be made prior to treating the whole field.

Applications must be made at a timing which falls within the guidelines of the ARC-CLETHODIM 2# label relative to weed sizes and application equipment. For these applications it is necessary to use application equipment designed for herbicide applications.

**TANK MIX APPLICATION OF ARC-CLETHODIM 2# AND INSECTICIDES FOR THE CONTROL OF GRASS WEEDS AND INSECTS IN MINT**

ARC-CLETHODIM 2# can be tank mixed with the following insecticides for use in mint: ORTHENE®. The ARC-CLETHODIM 2# rate should be 6 to 8 fl. oz./A for annual grass control in baby mint, minimum of 8 fl. oz./A for annual grass control in established mint and 8 to 16 fl. oz./A for perennial grass control. Crop oil concentrate should be added at the rate of 1.0 to 2.0 pts./A.

Certain insecticides may cause temporary phytotoxic symptoms on mint foliage. Refer to the insecticide label for further information. It is suggested that prior to using any insecticide/herbicide tank mixtures, that a small area of the field be treated first and observations for crop injury be made prior to treating the whole field.

Applications must be made at a timing which falls within the guidelines of the ARC-CLETHODIM 2# label relative to weed sizes and application equipment. For these

applications, it is necessary to use application equipment designed for herbicide applications.

**RECOMMENDATIONS FOR ROUNDUP READY VOLUNTEER CORN CONTROL IN ROUNDUP READY SOYBEANS WITH ARC-CLETHODIM 2# TANK MIX**

Product	Grass Species	Weed Stages	Rate (fl. oz./A)	Adjuvant Rate <sup>(1)</sup>
ARC-CLETHODIM 2# + GLY STAR® Plus or ROUNDUP Ultra® (or glyphosate formulations labeled for RR soybean) <sup>(3)</sup>	RR Volunteer Corn	Up to 12 inches	4 <sup>(1)</sup> to 6 <sup>(2)</sup>	AMS 2.5 lbs./A
		Up to 24 inches	6 to 8 + Up to 2 qts./A (See the GlyStar Plus, Roundup Ultra, or other glyphosate labels for use rates).	

<sup>(1)</sup> At the 4 fl. oz./A rate of ARC-CLETHODIM 2#, the adjuvant recommendation is 1 pt./A crop oil concentrate plus AMS at 2.5 lbs./A.

<sup>(2)</sup> Use the high rate under heavy grass pressure and/or when grasses are at or near maximum height.

<sup>(3)</sup> For glyphosate formulations that do not contain a built-in adjuvant system, the adjuvant recommendation is 1 pt./A crop oil concentrate plus AMS at 2.5 lbs./A or NIS at 0.25% v/v plus AMS at 2.5 lbs./A.

**THE MOST RESTRICTIVE LABELING OF ANY PRODUCT USED IN A TANK MIX MUST BE FOLLOWED.**

- Apply only to actively growing grass and broadleaf weeds at recommended height or growth stage listed on each label.
- Apply under favorable soil moisture and humidity which exist a few days after rainfall or within several days after irrigation.
- Tank mix applications may sometimes result in reduced grass control. If regrowth occurs, or an additional flush of new grass emerges, make a second application of ARC-CLETHODIM 2#, as specified in the respective size and rate tables.
- Do not tank mix ARC-CLETHODIM 2# when broadleaf weeds are tall and/or dense enough to prevent proper grass coverage.
- This tank mix may be applied postemergence to ROUNDUP READY soybeans up through the full flowering stage. Do not apply less than 60 days before harvest.
- Avoid contact with foliage, green stems, or fruit crops, or any desirable plants and trees, other than soybeans with the ROUNDUP READY gene as severe injury or destruction will result.
- Do not allow the ARC-CLETHODIM 2# 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 was 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 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.

**DIRECTIONS FOR USE IN FALLOW LAND**

ARC-CLETHODIM 2# may be used to control annual and perennial grasses in land that has been left fallow the previous year and other non-producing agricultural areas. Apply ARC-CLETHODIM 2# at 6 to 8 fl. oz./A for annual grasses and 8 to 16 fl. oz./A for perennial grasses. When both grass and broadleaf weeds are the target pest, ARC-CLETHODIM 2# may be tank mixed with 2,4-D ester, Albaugh DICAMBA SG or BANVEL® SGF for broad spectrum control. When both annual and perennial grasses occur in the same field, use a minimum of 8 fl. oz./A ARC-CLETHODIM 2# rate.

**GENERAL INFORMATION**

- Use a minimum spray volume of 5 gals./A for aerial applications and 15 gals./A for ground applications. Apply 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.
- Annual grasses that emerge after the ARC-CLETHODIM 2# application will not be controlled, and a second application may be necessary.
- The control of perennial grasses may require more than 1 application in non-tilled areas.
- Do not plant any crop for 30 days after application unless clethodim is registered for use in that crop.
- Do not apply to grasses that have tillered, formed seedheads or exceeded recommended growth stage.
- Do not use flood jet nozzles.
- Do not apply to drought stressed grasses.
- Do not mow area for 2 weeks prior to or after the ARC-CLETHODIM 2# application.

**ARC-CLETHODIM 2# IN TANK MIXES TO CONTROL ANNUAL AND PERENNIAL GRASSES IN FALLOW LAND**

PRODUCT	APPLICATION RATE/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(2)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
ARC-CLETHODIM 2# + 2,4-D Ester or Albaugh DICAMBA SG or BANVEL SGF	6 to 8 fl. oz.	8 to 16 fl. oz.	1%	
	0.5 lb./A			
	See the Albaugh DICAMBA SG or BANVEL SGF label for rates			

<sup>(1)</sup> Refer to ARC-CLETHODIM 2# label for weed height and species control. Review Albaugh DICAMBA SG, BANVEL SGF and 2,4-D labels for crop restrictions, use rates and weeds controlled.

<sup>(2)</sup> 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.

**ARC-CLETHODIM 2# FOR THE CONTROL AND/OR SUPPRESSION OF TALL FESCUE IN NATIVE PRAIRIE WARM-SEASON GRASS RESTORATION PROJECTS**

PRODUCT	PRODUCT RATE	GRASS WEEDS CONTROLLED/SUPPRESSED		WEED STAGE
		Common Name	Scientific Name	
ARC-CLETHODIM 2#	10 to 12 fl. oz./A	Tall Fescue	<i>Festuca arundinacea</i>	4 to 6 inches tall (40 to 60% green-up)

Adjuvant: ARC-CLETHODIM 2# must be applied with crop oil concentrate at 1 qt./A, plus a spray grade ammonium sulfate at 2.5 to 4 lbs./A. **Recommended Mixing Order:** Thoroughly mix spray grade ammonium sulfate in water, add ARC-CLETHODIM 2#, 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. Apply in the spring, at 40 to 60% green-up, prior to emergence of warm-season grasses. Do not mow area for 2 weeks after the ARC-CLETHODIM 2# application. Apply in a minimum of 15 to 20 gals. of water per acre at a spray pressure of 40 to 60 PSI at the nozzle. Apply using flat fan or hollow cone nozzles. Do not use flood nozzles. Apply only to fields that have warm-season grasses established for 2 years. Applications of ARC-CLETHODIM 2# to emerged warm-season grasses may cause injury. Do not apply 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 in that crop.

NOTE: ARC-CLETHODIM 2# applications are most effective if applied when average nighttime temperatures are consistently greater than or equal to 47 degrees Fahrenheit.

**ARC-CLETHODIM 2# FOR THE SUPPRESSION OF TALL FESCUE SEED-HEADS IN NON-PRODUCING AGRICULTURAL AREAS**

Product	Product Rate	Suppression	Application Timing
ARC-CLETHODIM 2#	1 ½ to 2 fl. oz./A	Tall Fescue Seed-Heads ( <i>Festuca arundinacea</i> )	50 to 90% Tall Fescue green-up
ADJUVANT: ARC-CLETHODIM 2# must be applied with crop oil concentrate at 1 qt./A, plus a spray grade ammonium sulfate at 2.5 to 4 lb./A. <b>Recommended Mixing Order:</b> Thoroughly mix spray grade ammonium sulfate in water, add ARC-CLETHODIM 2#, then add crop oil concentrate.			

**SPECIAL APPLICATION INSTRUCTIONS/PRECAUTIONS**

Apply at 50 to 90% tall fescue green-up.  
 Use the higher ARC-CLETHODIM 2# rate if less tall fescue green matter is present.  
 Do not mow area for two weeks after the ARC-CLETHODIM 2# application.  
 Apply in a minimum of 15 to 20 gals. of water per acre at a spray pressure of 40 to 60 psi at the nozzle. Apply 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 in that crop.

**DIRECTIONS FOR USE IN ORNAMENTALS**

For ornamental plant uses, ARC-CLETHODIM 2# can be used to control labeled grass weeds in greenhouses, lathhouses, shadehouses, and around outdoor ornamentals, including nurseries, parks, roadside plantings, and structure landscapes.

**IMPORTANT**

ARC-CLETHODIM 2# successfully controls weeds in newly transplanted and established non-grassy ornamentals. Plant tolerance to ARC-CLETHODIM 2# 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 herbicide can be used safely on a few plants prior to widespread application. Neither the seller nor the manufacturer of ARC-CLETHODIM 2# have investigated the safety factor to ornamental plants not listed on the label.

The following plants have shown a tolerance for ARC-CLETHODIM 2# applications:

**ORNAMENTAL TREES**

COMMON NAME	SCIENTIFIC NAME
ALDER, RED	<i>Alnus rubra</i>
ASH	<i>Fraxinus</i> spp.
BASSWOOD	<i>Tilia</i> spp.
BIRCH, EUROPEAN WHITE	<i>Betula pendula</i>
BIRCH, RIVER	<i>Betula nigra</i>
BIRCH, WHITE	<i>Betula papyrifera</i>

CRABAPPLE, FLOWERING	<i>Malus halliana</i>
DOGWOOD, FLOWERING	<i>Cornus florida</i>
GOLDON CHAIN TREE	<i>Laburnum anagyroides</i>
MAPLES	<i>Acer spp.</i>
MULBERRY, WHITE	<i>Morus alba</i>
OAKS	<i>Quercus spp.</i>
OLIVE, WILD	<i>Elaeagnus angustifolia</i>
REDBUD, EASTERN	<i>Cercis canadensis</i>
SWEETGUM	<i>Liquidambar styraciflua</i>

### GARDEN FLOWERS AND PLANTS

COMMON NAME	SCIENTIFIC NAME
AGERATUM	<i>Ageratum spp.</i>
ALYSSUM*, SWEET	<i>Lobularia maritima</i>
ASPARAGUS FERN	<i>Asparagus setaceus</i>
BLEEDING HEART	<i>Dicentra spectabilis</i>
CAST IRON PLANT	<i>Aspidistra elatior</i>
CHRYSANTHEMUM	<i>Chrysanthemum spp.</i>
CINQUEFOIL	<i>Potentilla spp.</i>
COLEUS	<i>Coleus spp.</i>
CORALBELLS	<i>Heuchera sanguinea</i>
CRANESBILL	<i>Geranium spp.</i>
DAHLIA	<i>Dahlia spp.</i>
DAISY, AFRICAN	<i>Arctotis stoechadifolin</i>
DAYLILY	<i>Hemerocallis spp.</i>
DUSTY MILLER	<i>Centaurea cineraria</i>
EUONYMUS	<i>Euonymus spp.</i>
GAZANIA	<i>Gazania spp.</i>
GERANIUM, HOUSE	<i>Pelargonium hortorum</i>
HEATHER, FALSE	<i>Cuphea hyssopifolia</i>
HOSTA	<i>Hosta fortunei</i>
IRIS	<i>Iris spp.</i>
JASMINE TOBACCO	<i>Nicotiana glauca</i>
LOOSESTRIFE	<i>Lythrum salicaria</i>
MARIGOLD	<i>Tagetes spp.</i>
PARTRIDGEBERRY	<i>Mitchella repens</i>
PETUNIA*	<i>Petunia hybrida</i>
PHLOX	<i>Phlox spp.</i>
PINKS	<i>Dianthus spp.</i>
PORTULACA	<i>Portulaca grandiflora</i>
SALVIA	<i>Salvia spp.</i>
SAXIFRAGE	<i>Saxifraga spp.</i>
SEDUM	<i>Sedum spp.</i>
SELLOUM	<i>Philodendron selloum</i>
SNAPDRAGON*	<i>Antirrhinum majus</i>

SWEET FLAG	<i>Lacorus</i> spp.
TICKSEED	<i>Coreopsis grandiflora</i>
TOUCH-ME-NOT	<i>Impatiens</i> spp.
VERBENA	<i>Verbena</i> spp.
VIOLET	<i>Viola</i> spp.
YARROW, COMMON	<i>Achillea millefolium</i>
ZINNIA	<i>Zinnia elegans</i>

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

**GROUND COVERS**

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

**SHRUBS**

COMMON NAME	SCIENTIFIC NAME
ABELIA	<i>Abelia</i> spp.
ANISE, PURPLE	<i>Illicium floridanum</i>
AUCUBA	<i>Aucuba</i> spp.
AZALEA*	<i>Rhododendron</i> spp.
BAMBOO	<i>Bambusa</i> spp.
BARBERRY, JAPANESE	<i>Berberis thunbergii</i>
BARBERRY, MAGELLAN	<i>Berberis buxifolia</i>
BAYBERRY	<i>Myrica pensylvanica</i>
BOTTLEBRUSH	<i>Callistemon citrinus</i>
BOXWOOD, COMMON	<i>Buxus sempervirens</i>
CAMELLIA	<i>Camellia japonica</i>
CANDYTUFT	<i>Iberis sempervirens</i>
CLEYERA	<i>Cleyera japonica</i>
CORALBERRY	<i>Ardisia crenata</i>
CRAPE MYRTLE	<i>Lagerstroemia indica</i>
COYOTE BRUSH	<i>Baccharis pilularis</i>
FIG, CREEPING	<i>Ficus pumila</i>
GARDENIA	<i>Gardenia</i> spp.
HOLLY	<i>Ilex</i> spp.
HONEYSUCKLE	<i>Lonicera</i> spp.
INDIAN HAWTHORN	<i>Raphiolepis indica</i>
JASMINE	<i>Jasminum</i> spp.
JASMINE, ASIATIC	<i>Trachelospermum asiaticum</i>

JASMINE, CONFEDERATE	<i>Trachelospermum jasminoides</i>
JUNIPER	<i>Juniperus</i> spp.
LANTANA	<i>Lantana</i> spp.
NANDINA*	<i>Nandinia domestica</i>
OLEANDER, COMMON	<i>Nerium oleander</i>
OREGON GRAPE	<i>Mahonia aquifolium</i>
PHOTINIA	<i>Photinia</i> spp.
PITTOSPORUM	<i>Pittosporum</i> spp.
PODOCARPUS	<i>Podocarpus</i> spp.
PRIVET	<i>Ligustrum</i> spp.
PYRACANTHA	<i>Pyracantha</i> spp.
RHODODENDRON	<i>Rhododendron</i> spp.
ROSE	<i>Rosa</i> spp.
SPIREA	<i>Spiraea bumalda</i>
TEA OLIVE	<i>Osmanthus fragrans</i>
VIBURNUM	<i>Viburnum tinus</i>
WISTERIA	<i>Wisteria</i> spp.
YELLOW SAGE/SHRUB VERBENA/LANTANA	<i>Lantana camara</i>

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

**RECOMMENDATIONS FOR ANNUAL GRASSES IN ORNAMENTALS**

- Apply only to actively growing grasses at recommended weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Use the high rate under heavy grass pressure and/or when grasses are at maximum height.

GRASS SPECIES	SCIENTIFIC NAME	WEED* HEIGHT INCHES	RATE FL. OZ./ACRE <sup>(1)</sup>	HIGH RATE <sup>(2)</sup>
Barnyardgrass	<i>Echinochloa crus-galli</i>	2 to 8	8	16
Broadleaf Signalgrass	<i>Brachiaria platyphylla</i>	2 to 6	8	16
Brome				
California	<i>Bromus carinatus</i>	2 to 6	8	16
Cheatgrass	<i>Bromus secalinus</i>	2 to 6	8	16
Downy	<i>Bromus tectorum</i>	2 to 6	8	16
Ripgut	<i>Bromus diandrus</i>	2 to 6	8	16
Canarygrass	<i>Phalaris canariensis</i>	1 to 4	8	16
Crabgrass				
Hairy	<i>Digitaria adscendens</i>	2 to 6**	8	16
Large	<i>Digitaria sanguinalis</i>	2 to 6**	8	16
Smooth	<i>Digitaria ischaemum</i>	2 to 6**	8	16
Southern	<i>Digitaria ciliaris</i>	2 to 6**	8	16
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	2 to 6**	8	16
Fall Panicum	<i>Panicum dichotomiflorum</i>	2 to 8	8	16
Field Sandbur	<i>Cenchrus incertus</i>	2 to 6	8	16
Foxtail				



Giant Green Yellow	<i>Setaria faberi</i> <i>Setaria viridis</i> <i>Setaria glauca</i>	2 to 12 2 to 8 2 to 8	8 8 8	16 16 16
Goosegrass	<i>Eleusine indica</i>	2 to 6**	8	16
Itchgrass	<i>Rottboellia cochinchinensis</i>	2 to 6	8	16
Junglerice	<i>Echinochloa colona</i>	2 to 6	8	16
Lovegrass (Stinkgrass)	<i>Eragrostis cilianensis</i>	2 to 6	8	16
Rabbitsfootgrass	<i>Polypogon monspeliensis</i>	1 to 4	8	16
Red Rice	<i>Oryza sativa</i>	1 to 3	8	16
Ryegrass Hardy Italian	<i>Lolium remotum</i> <i>Lolium multiflorum</i>	2 to 6 2 to 6	8 8	16 16
Seedling Johnsongrass	<i>Sorghum halepense</i>	4 to 10	8	16
Shattercane	<i>Sorghum bicolor</i>	6 to 18	8	16
Southwestern Cupgrass	<i>Eriochloa gracilis</i>	2 to 6	8	16
Sprangletop Amazon Bearded Mexican Red	<i>Leptochloa panicoides</i> <i>Leptochloa fascicularis</i> <i>Leptochloa uninervia</i> <i>Leptochloa filiformis</i>	2 to 6 2 to 6 2 to 6 2 to 6	8 8 8 8	16 16 16 16
Texas Panicum	<i>Panicum texanum</i>	2 to 6	8	16
Volunteer Cereals Barley Oats Rye Wheat	<i>Hordeum vulgare</i> <i>Avena sativa</i> <i>Secale cereale</i> <i>Triticum aestivum</i>	2 to 6 2 to 6 2 to 6 2 to 6	8 8 8 8	16 16 16 16
Volunteer Corn	<i>Zea mays</i>	4 to 12	8	16
Volunteer Corn	<i>Zea mays</i>	12 to 24	8	16
Volunteer Grain Sorghum	<i>Sorghum bicolor</i>	8 to 12	8	16
Wild Oats	<i>Avena fatua</i>	2 to 6	8	16
Wild Proso Millet	<i>Panicum miliaceum</i>	2 to 10	8	16
Witchgrass	<i>Panicum capillare</i>	2 to 8	8	16
Woolly Cupgrass	<i>Eriochloa villosa</i>	2 to 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 non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v).

**RECOMMENDATIONS FOR ANNUAL BLUEGRASS CONTROL WITH ARC-CLETHODIM 2# IN ORNAMENTALS**

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

Apply under favorable soil moisture and humidity that 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.  
 Add non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v).

### RECOMMENDATIONS FOR PERENNIAL GRASSES

- Apply only to actively growing grasses at recommended weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Use the high rate under heavy grass pressure and/or when grasses are at maximum height.

GRASS SPECIES/SCIENTIFIC NAME	WEED HEIGHT (inches)	RATE (FL. OZ. ACRE) <sup>(1)</sup>	HIGH RATE <sup>(2)</sup>
Bermudagrass ( <i>Cynodon dactylon</i> ) 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 ( <i>Elymus repens</i> ) First Application	4 to 8	8	16
Repeat Application(s) (if regrowth occurs)	4 to 8	8	16
Rhizome Johnsongrass ( <i>Sorghum halepense</i> ) First Application	12 to 24 6 to 18	8 6	16 8
Repeat Application(s) (if regrowth occurs)			
Wirestem Muhly ( <i>Muhlenbergia frondosa</i> ) First Application	4 to 8	8	16
Repeat Application(s) (if regrowth occurs)	4 to 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 non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v).

### STORAGE AND DISPOSAL

#### PROHIBITIONS

Do not contaminate water, food or feed by storage, disposal or cleaning of equipment. Open dumping is prohibited.

**PESTICIDE STORAGE:** Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Store in cool, dry place. Do not store diluted spray.

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

#### DISPOSAL STATEMENTS:

**Nonrefillable container:** Do not reuse this container to hold materials other than pesticides or dilute pesticides (rinsate). After emptying and cleaning, it may be allowable to temporarily hold rinsate or

other pesticide-related materials in the container. Contact your state regulatory agency to determine allowable practices in your state. Once cleaned, some agricultural plastic pesticide containers can be taken to a container collection site or picked up for recycling. To find the nearest site, contact your chemical dealer or manufacturer, or contact The Agricultural Container Recycling Council (ACRC) at [www.acrecycle.org](http://www.acrecycle.org).

Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

**For packages up to 5 gallons. 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  $\frac{1}{4}$  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 times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**For packages greater than 5 gallons and less than 56 gallons: Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container  $\frac{1}{4}$  full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**For packages greater than 56 gallons:** To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

**For refillable containers:** Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

#### **CONDITION OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather, presence of other materials or other influencing factors in the use of the product, which are beyond the control of ARCANA LLC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold ARCANA LLC and Seller harmless for any claims relating to such factors.

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