



## OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

WASHINGTON, D.C. 20460

December 16, 2025

Joseph Wolfe  
joseph.wolfe@nufarm.com  
NUFARM, INC.

Subject: Labeling Amendment - Correction of maximum single application rate  
Registration Review Label Amendment – Incorporating Mitigation Measures  
from the Registration Review Interim Decision for PANTHER HERBICIDE  
Product Name: PANTHER HERBICIDE  
Admin Number: 71368-102  
EPA Receipt Date: 06/11/2021; 08/18/2025  
Action Case Number: 00479520 (decision # 576454); 00666166

Dear Joseph Wolfe:

The amended labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable. This approval does not affect any terms or conditions that were previously imposed on this registration. You continue to be subject to existing terms or conditions on your registration and any deadlines connected with them.

The Agency, in accordance with FIFRA, as amended, has completed reviewing all the information submitted with your application to support the Registration Review of the above referenced product in connection with the Flumioxazin Interim Decision. The Agency has concluded that your submission is acceptable.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. *The next label printing of this product must use this labeling unless subsequent changes have been approved.* You must submit one (1) copy of the final printed labeling before you release this product for shipment with the new labeling. In accordance with 40 CFR § 152.130(c), you may distribute or sell this product under the previously approved labeling for 12 months from the date of this letter. After 12 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR § 152.3.

Should you wish to add/retain a reference to your company's website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by EPA. If the website is false or misleading, the product will be considered to be misbranded and sale or distribution of the product is unlawful under FIFRA section 12(a)(1)(E). 40 CFR § 156.10(a)(5) lists examples of statements the EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the EPA find or if it is brought to our attention that a website contains statements or claims substantially differing from statements or claims made in connection with obtaining a FIFRA section 3 registration, the website will be referred to the EPA's Office of Enforcement and Compliance Assurance.

Your release for shipment of this product constitutes acceptance of these terms. If these terms are not complied with, this registration will be subject to cancellation in accordance with FIFRA section 6.

If you have questions, please contact Jeffrey Chang via email at [chang.jeffrey@epa.gov](mailto:chang.jeffrey@epa.gov).

Sincerely,

*Kable Bo Davis*

Kable Bo Davis, Senior Advisor  
FHB, RD  
Office of Pesticide Programs

ACCEPTED

12/16/2025

Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under  
EPA Reg. No.

71368-102

FLUMIOXAZIN GROUP 14 HERBICIDE

# PANTHER® HERBICIDE

[A] [P][p]art of the] [Roundup Ready PLUS® Crop Management Solutions]

ABNS: TUSCANY® HERBICIDE; FLUMI 51 WDG; FLUMI 51 WDG HERBICIDE

For Control and/or Suppression of Certain Weeds in Alfalfa, Almond, Artichoke, Asparagus, [Vegetable, Brassica, Head and Stem, Group 5-16 [\*]], Bushberry Subgroup 13-07B, Cabbage and Chinese Cabbage (Tight Headed Varieties Only), Prickly Pear[\*], Caneberry, Celery, Citrus, [Clover[\*]], Cotton, Vegetable, Cucurbit, Group 9, Dry Beans, Field Corn, Field Peas, Flax[\*], Vegetable, Fruiting, Group 8-10 (Including Okra), Garlic, Grape, Hops [\*], Lentils[\*], Mint, Nut Trees (Including Pistachio), Onion (Dry Bulb), Olive, Peanut[\*], Pome Fruit, Pomegranate, Potato, Soybean[\*], Stone Fruit, Strawberry, Sugarcane [\*], Cane [\*], Sunflower Subgroup 20B[\*] (Including Safflower)[\*], Sweet Potato, Wheat[\*], Non-Bearing Fruit and Nut Trees, Fallow Land and to Maintain Bare Ground on Non-Crop Areas of Farms, Orchards and Vineyards.

[\* - Crops footnoted in descriptor above with \* are not for use in California.]

ACTIVE INGREDIENT:

\*Flumioxazin..... 51.0%

OTHER INGREDIENTS: ..... 49.0%

TOTAL: ..... 100.0%

\*(2-[7-Fluoro-3,4-dihydro-3-oxo-4-(2-propynyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione)  
This product is a water dispersible granule containing 51% active ingredient.

## KEEP OUT OF REACH OF CHILDREN CAUTION – PRECAUCION

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

SEE [BACK PANEL] [NEXT PAGE] [INSIDE LABEL] [INSIDE BOOKLET] [BELOW] FOR ADDITIONAL PRECAUTIONARY STATEMENTS [AND] [DIRECTIONS FOR USE]

For Chemical Spill, Leak, Fire, or Exposure, Call CHEMTREC (800) 424-9300  
For Medical Emergencies Only, Call (877) 325-1840

FIRST AID	
IF INHALED	<ul style="list-style-type: none"><li>Move person to fresh air.</li><li>If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li><li>Call a poison control center or doctor for further treatment advice.</li></ul>
IF ON SKIN OR CLOTHING	<ul style="list-style-type: none"><li>Take off contaminated clothing.</li><li>Rinse skin immediately with plenty of water for 15 to 20 minutes.</li><li>Call a poison control center or doctor for treatment advice.</li></ul>
IF IN EYES	<ul style="list-style-type: none"><li>Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.</li><li>Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>Call a poison control center or doctor for treatment advice.</li></ul>
IF SWALLOWED	<ul style="list-style-type: none"><li>Call a poison control center or doctor immediately for treatment advice.</li><li>Have person sip a glass of water if able to swallow.</li><li><b>DO NOT</b> induce vomiting unless told to do so by the poison control center or doctor.</li><li><b>DO NOT</b> give anything by mouth to an unconscious person.</li></ul>
<b>HOTLINE NUMBER:</b> Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-877-325-1840 for emergency medical treatment information.	

EPA Reg. No. 71368-102

EPA Est. No. \_\_\_\_\_

Net Weight: \_\_\_\_\_ Lb ( \_\_\_\_\_ Kg)

Manufactured for  
Nufarm, Inc.  
11901 S. Austin Avenue  
Alsip, IL 60803



[Grow a Better Tomorrow]  
[Nufarm Grow a Better Tomorrow]

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

Harmful if inhaled or absorbed through the skin. Causes moderate eye irritation. Avoid breathing dust and spray mist. Avoid contact with skin, eyes or clothing. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

**PERSONAL PROTECTIVE EQUIPMENT (PPE):**

**Applicators and other handlers must wear:**

- long-sleeved shirt and long pants
- chemical-resistant gloves made of any waterproof material
- shoes and socks

**For aerial application to sugarcane[\*], mixer/loaders must also wear:**

- coveralls
- chemical resistant apron
- chemical resistant boots

**For aerial application to artichoke; field peas; flax[\*]; lentils[\*]; safflower[\*]; sunflower[\*] and wheat[\*], mixer/loaders must also wear:**

- filtering face piece respirator (N95, R95 or P95)

**For ground boom application to cactus (prickly pear)[\*]; olive and pomegranate, mixer/loaders must also wear:**

- filtering face piece respirator (N95, R95 or P95)

**[\* - Not for Use in California]**

**User Safety Requirements**

Follow manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**USER SAFETY RECOMMENDATIONS**

**Users Should:**

- Remove clothing/PPE 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**

This product is toxic to non-target plants and aquatic invertebrates. **DO NOT** apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift or runoff may be hazardous to non-target plants and aquatic organisms in neighboring areas. **DO NOT** apply where runoff is likely to occur. **DO NOT** apply when weather conditions favor drift from treated areas. **DO NOT** contaminate water when disposing of equipment washwaters or rinsate.

This pesticide is toxic to plants and use strictly in accordance with the drift and run-off precautions on this label in order to minimize off-site exposures.

Under some conditions this product may have a potential to run-off to surface water or adjacent land. Where possible, use methods which reduce soil erosion, including no till, limited till and contour plowing; these methods also reduce pesticide run-off. Use of vegetation filter strips along rivers, creeks, streams, wetlands or on the downhill side of fields where run-off could occur will minimize water run-off and is recommended.

**Note to EPA reviewer: if this product is shipped in containers greater than 50 lbs, the following environmental hazard statement will be added to the label:**

[**DO NOT** discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. **DO NOT** discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.]

**DIRECTIONS FOR USE**

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

Read the entire label before using this product. Use strictly in accordance with label precautionary statements and directions, and with applicable state and federal regulations.

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

**AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard (WPS), 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 statement of this label about personal protective equipment (PPE) and restricted-entry interval (REI). The requirements in this box only apply to users of this product that are covered by the WPS.

**DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 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, including plants, soil or water is: coveralls, chemical resistant gloves made of waterproof material, shoes plus socks.

## NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are not within the scope of the WPS for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural crops on farms, forests, nurseries, or greenhouses. Keep all unprotected persons out of operating areas, or vicinity where there may be drift.

**DO NOT** enter or allow others to enter treated areas until sprays have dried.

## RISKS OF USING THIS PRODUCT

The Buyer and User (referred to collectively herein as "Buyer") of this product must be aware that there are inherent unintended risks associated with the use of this product which are impossible to eliminate. These risks include, but are not limited to, injury to plants and crops to which this product is applied, lack of control of the target pests or weeds, resistance of the target pest or weeds to this product, injury caused by drift, and injury to rotational crops caused by carryover in the soil. Such risks of crop injury, non-performance, resistance or other unintended consequences are unavoidable and may result because of such factors as weather, soil conditions, disease, moisture conditions, irrigation practices, condition of the crop at the time of application, presence of other materials either applied in the tank mix with this product or prior to application of this product, cultural practices or the manner of use or application, (or a combination of such factors) all of which are factors beyond the control of Nufarm. The Buyer must be aware that these inherent unintended risks may reduce the harvested yield of the crop in all or a portion of the treated acreage, or otherwise affect the crop such that additional care, treatment and expense are required to take the crop to harvest. If the Buyer chooses not to accept these risks, **THEN THIS PRODUCT IS NOT TO BE APPLIED**. By applying this product Buyer acknowledges and accepts these inherent unintended risks **AND TO THE FULLEST EXTENT ALLOWED BY LAW, AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER**.

Nufarm shall not be responsible for losses or damages (including, but not limited to, loss of yield, increased expenses of farming the crop or such incidental, consequential or special damages that may be claimed) resulting from use of this product in any manner not set forth on the label. Buyer assumes all risks associated with the use of this product in any manner or under conditions not specifically directed or approved on the label.

See also **WARRANTY DISCLAIMER** and **LIMITATION OF LIABILITY** sections of the label for additional information.

## WEED RESISTANCE MANAGEMENT

For resistance management, Panther Herbicide contains a Group 14 herbicide –flumioxazin. Any weed population may contain or develop plants naturally resistant to Panther Herbicide and other Group 14 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Appropriate resistance-management strategies must be followed.

When herbicides that affect the same biological site of action are used repeatedly over several years to control the same weed species in the same field, naturally-occurring resistant biotypes may survive a correctly applied herbicide treatment, propagate, and become dominant in that field. Adequate control of these resistant weed biotypes cannot be expected. If weed control is unsatisfactory, it may be necessary to retreat the problem area using a product affecting a different site of action.

To delay herbicide resistance, take one or more of the following steps:

- Rotate the use of Panther Herbicide or other Group 14 herbicides within a growing season sequence or among growing seasons with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.
- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use and crop rotation, and that considers tillage (or other mechanical control methods), cultural (e.g., higher crop seeding rates; precision fertilizer application method and timing to favor the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.
- Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method including hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.
- If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy or herbicide with a different mode of action, if available.
- Contact your local extension specialist or certified crop advisors for additional pesticide resistance-management and/or integrated weed-management directions for specific crops and weed biotypes.
- [For further information or to report suspected resistance, contact [Nufarm contact] at [one of][any of] the following] [[[[X]-XXX-XXX-XXXX] [[.][or]] 1-800-345-3330 [[.][or]] [Nufarm e-mail address].]

It is advisable to keep accurate records of pesticides applied to individual fields to help obtain information on the spread and dispersal of resistant biotypes. Contact your local sales representative, crop advisor, or extension agent to find out if suspected resistant weeds to this MOA have been found in your region. **DO NOT** assume that each listed weed is being controlled by this mechanisms of action. Co-formulated active ingredients are intended to broaden the spectrum of weeds that are controlled. Some weeds may be controlled by only one of the active ingredient in this product.

Suspected herbicide-resistant weeds may be identified by these indicators:

- Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;
- A spreading patch of non-controlled plants of a particular weed species; and
- Surviving plants mixed with controlled individuals of the same species.

## **INTEGRATED PEST MANAGEMENT**

Nufarm advises the use of Integrated Pest Management (IPM) programs to control pests. This product may be used as part of an Integrated Pest Management (IPM) program which can include biological, cultural, and genetic practices aimed at preventing economic pest damage. Application of this product must be based on IPM principles and practices including field scouting or other detection methods, correct target pest identification, population monitoring, and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop or site systems in your area.

## **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 application advisor, to the extent allowed by applicable law.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

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**DIRECTIONS FOR USE IN ESTABLISHED ARTICHOKE**

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**DIRECTIONS FOR USE IN CACTUS (PRICKLY PEAR) <sup>[\*]</sup>**

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**[DIRECTIONS FOR USE IN ESTABLISHED CLOVER<sup>[\*]</sup>]**

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Timing to Dry Beans[*] .....	x
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Timing to Field Peas .....	x
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**DIRECTIONS FOR USE IN FLAX[\*]**

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**DIRECTIONS FOR USE IN FRUITING VEGETABLES (INCLUDING OKRA)[\*]**

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**DIRECTIONS FOR USE IN LENTILS[\*]**

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Restrictions and Limitations .....	x
Timing to Lentils .....	x

**DIRECTIONS FOR USE IN MINT (Peppermint and Spearmint)**

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Precautions .....	x
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Timing to Weeds .....	x

Weeds Controlled by Residual Activity of This Product ..... Table

**DIRECTIONS FOR USE IN ONION (DRY BULB)**

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**DIRECTIONS FOR USE IN PEANUT[\*]**

Restrictions and Limitations .....	x
[Precautions .....	x]
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Restrictions and Limitations .....	x
Timing to Potatoes .....	x
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#### **DIRECTIONS FOR USE IN SOYBEAN[\*]**

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#### **DIRECTIONS FOR USE IN STRAWBERRY**

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#### **DIRECTIONS FOR USE IN SUGARCANE[\*]**

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#### **DIRECTIONS FOR USE IN SUNFLOWER[\*] AND SAFFLOWER[\*]**

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#### **DIRECTIONS FOR USE IN SWEET POTATO**

Restrictions and Limitations .....	x
Timing to Sweet Potatoes .....	x
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#### **DIRECTIONS FOR USE IN WHEAT[\*]**

Restrictions and Limitations .....	x
Pre-plant applications, Pre-emergence Weed Control.....	x
Restrictions and Limitations .....	x
Burndown Use Directions - For Preplant Applications in Wheat .....	x
[Post-Plant, Pre-emergence Weed Control.....	x]
Restrictions and Limitations .....	x
Use Directions, Post-plant, Pre-emergence Weed Control .....	x
Harvest Aid.....	x
Restrictions and Limitations .....	x
Use Directions - Harvest Aid.....	x
Timing to Wheat .....	x

#### **DIRECTIONS FOR USE IN ALMOND, BUSHBERRY, CANEBERRY, CITRUS FRUIT, GRAPES, NUT TREES (INCLUDING PISTACHIO), OLIVE, POME FRUIT, POMEGRANATE, STONE FRUIT AND NON-BEARING FRUIT TREES**

Restrictions and Limitations .....	x
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Precautions .....	x
Preemergence Application .....	x
Postemergence Application .....	x
Carrier Volume and Spray Pressure .....	x
Banded Application .....	x
Use Precautions for Bushberries .....	x
Use Precautions for Grapes .....	x
Use Precautions for Citrus Fruit, Nut Trees (Including Pistachio), Olive, Pome Fruit, Pomegranate and Stone Fruit .....	x
Use Precautions for Non-Bearing Fruit Trees .....	x
Use Precautions for Almond and Stone Fruit in defined Areas of Merced, San Joaquin and Stanislaus Counties of California .....	x
Additional Residual Weed Control .....	x
Weeds Controlled by Postemergence Activity of Tank Mixes of This Product .....	Table

**DIRECTIONS FOR USE TO MAINTAIN BARE GROUND ON NON-CROP AREAS OF FARMS, ORCHARDS OR VINEYARDS**

Restrictions and Limitations .....	x
Preemergence Application .....	x
Postemergence Application .....	x
Tank Mix Combinations to Maintain Bare Ground Non-Crop Areas .....	Table

**STORAGE AND DISPOSAL.....** x

[\* - Not for Use in California]

## PRODUCT INFORMATION

- This product provides residual control of susceptible weeds.
- This product provides additional burndown activity when used as part of a burndown program.
- This product can be applied as part of a fall burndown program for control of susceptible winter annuals.
- This product can be applied with a hooded or shielded sprayer, as well as part of a layby application, in selected crops for postemergence weed control as well as residual control of susceptible weeds.
- This product can be used on farms, orchards and vineyards for non-selective vegetation control to maintain bare ground non-crop areas that must be kept weed free.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

**This label makes no claims concerning control of other weed species.**

### Mandatory Spray Drift

#### Aerial Applications

- **DO NOT** release spray at a height greater than 10 ft above the vegetative canopy, unless a greater application height is necessary for pilot safety.
- For all applications, applicators are required to use a medium or coarser spray droplet size (ASABE S572.1).
- The boom length must not exceed 65% of the wingspan for airplanes or 75% of the rotor blade diameter for helicopters.
- Applicators must use 1/2 swath displacement upwind at the downwind edge of the field.
- Nozzles must be oriented so the spray is directed toward the back of the aircraft.
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

#### Ground Applications

- Apply with the nozzle height recommended by the manufacturer, but no more than 3 feet above the ground or crop canopy.
- For all applications, applicators are required to use a medium or coarser spray droplet size (ASABE S572.1).
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

#### Boom-less Ground Applications:

- Applicators are required to use a medium or coarser droplet size (ASABE S572.1) for all applications.
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

### Spray Drift Advisories

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT.  
BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

#### **IMPORTANCE OF DROPLET SIZE**

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

#### **Controlling Droplet Size - Ground Boom**

- Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

#### **Controlling Droplet Size - Aircraft**

Adjust Nozzles - Follow nozzle manufacturers recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

#### **BOOM HEIGHT - Ground Boom**

Use the lowest boom height that is compatible with the spray nozzles that will provide uniform coverage. For ground equipment, the boom should remain level with the crop and have minimal bounce.

#### **RELEASE HEIGHT - Aircraft**

Higher release heights increase the potential for spray drift. When applying aerially to crops, **DO NOT** release spray at a height greater than 10 ft above the crop canopy, unless a greater application height is necessary for pilot safety.

#### **SHIELDED SPRAYERS**

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

#### **TEMPERATURE AND HUMIDITY**

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

#### **TEMPERATURE INVERSIONS**

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

## **WIND**

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.

Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

### **Boom-less Ground Applications:**

Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

### **Handheld Technology Applications:**

Take precautions to minimize spray drift.

## **ENVIRONMENTAL CONDITIONS AND BIOLOGICAL PERFORMANCE**

### **Preemergence Application (Conventional Tillage)**

**Important:** Crop injury may occur from applications made to poorly drained soils and/or applications made under cool, wet conditions. Risk of crop injury can be minimized by using on well drained soils, planting at least 1.5 inches deep, using high quality seed and completely covering seeds with soil prior to preemergence applications. Treated soil that is splashed onto newly emerged crops may result in temporary crop injury.

Moisture is necessary to activate this product in soil for residual weed control. Dry weather following applications of this product may reduce effectiveness. However, when adequate moisture is received after dry conditions, this product will control susceptible germinating weeds. This product may not control weeds that germinate after application but before an activating rainfall/irrigation or weeds that germinate through cracks resulting from dry soil.

When adequate moisture is not received after an application of this product, weed control may be improved by irrigation with at least 1/4 inch of water. If emerged weeds are controlled by cultivation, residual weed control will be reduced.

### **Burndown Application**

For best results, apply this product as part of a burndown program to actively growing weeds. Applying this product under conditions that **DO NOT** promote active weed growth will reduce herbicide effectiveness. **DO NOT** apply this product when weeds are under stress due to drought, excessive water, extremes in temperature, disease or low humidity. Weeds under stress tend to become less susceptible to herbicidal action. This product is most effective when applied under warm sunny conditions.

Reduced residual weed control may occur when burndown applications are made to fields where heavy crop and/or weed residue exist.

### **Postemergence Application**

Only apply this product to healthy crops labeled for postemergence use. **DO NOT** apply this product to crops that have been weakened by disease, drought, flooding, excessive fertilization, soil salts, previously applied pesticides, nematodes, insects or winter injury.

### **Rainfastness**

This product is rainfast one hour after application. Postemergent efficacy may be reduced if rain is expected within one hour of application.

### **Soil Characteristics**

Application of this product to soils with high organic matter and/or high clay content may require higher dosages than soils with low organic matter and/or low clay content. Application to cloddy seedbeds can result in reduced weed control.

## **HERBICIDE RATE**

### **Residual Weed Control (Including Preemergence Applications or Applications as Part of a Fall or Spring Burndown and Fallow Seedbed Program)**

Based upon soil characteristics (organic matter content and texture), the most difficult to control weed species being targeted, and the crop being grown, select the proper dosage of this product from the rate range tables contained in this label.

## **CARRIER VOLUME AND SPRAY PRESSURE**

(Ground Equipment only. See Information for Aerial Equipment under "AERIAL APPLICATION".)

### **Preemergence Application (Conventional Tillage)**

To ensure uniform coverage, use 10 to 30 gallons of spray solution per acre for conventional tillage applications. Nozzle selection must meet manufacturer's gallonage and pressure specifications for preemergence herbicide application.

### **Burndown Application (Prior to Crop Emergence)**

To ensure thorough coverage in burndown applications, use 15 to 60 gallons spray solution per acre. Use 20 to 60 gallons per acre if dense vegetation or heavy crop residue is present. Nozzle selection must meet manufacturer's gallonage and pressure specifications for postemergence herbicide application. **DO NOT** use flood jet nozzles.

### **Postemergence Application (Emerged Crop)**

Check use directions for specific crops in which this product can be applied postemergence. To ensure thorough coverage in burndown applications, use a minimum of 15 gallons spray solution per acre. Use a minimum of 20 gallons per acre if dense vegetation or heavy crop residue is present. Nozzle selection must meet manufacturer's gallonage and pressure specifications for postemergence herbicide application.

## **ADDITIVES**

### **Burndown Application (Prior to Crop Emergence)**

Postemergence control of weeds from tank mixes of this product will require the addition of an agronomically approved adjuvant to the spray mixture. Either a crop oil concentrate or methylated seed oil which contains at least 15% emulsifiers and 80% oil or a non-ionic surfactant at 0.25%v/v, may be used when applying this product as part of a burndown program. Some tank mix partners are formulated with sufficient adjuvants and **DO NOT** require the addition of a crop oil concentrate, methylated seed oil or non-ionic surfactant when tank mixed with this product. The addition of a crop oil concentrate or methylated seed oil may increase the burndown activity on certain weeds including cutleaf eveningprimrose and Carolina geranium. Verify mixing compatibility qualities by a jar test.

A spray grade nitrogen source (either ammonium sulfate at 2 to 2.5 lbs per acre or a 28 to 32% nitrogen solution at 1 to 2 quarts per acre) may be added to the spray mixture along with either a crop oil concentrate, methylated seed oil or non-ionic surfactant to enhance weed control. The addition of a nitrogen source does not replace the need for a crop oil concentrate, a methylated seed oil or a non-ionic surfactant.

#### **JAR TEST TO DETERMINE COMPATIBILITY OF ADJUVANTS AND THIS PRODUCT**

When using this product and an adjuvant, including in stale seed bed, layby, hooded/shielded or reduced tillage situations, perform a jar test before mixing commercial quantities of this product, when using this product for the first time, when using new adjuvants or when a new water source is being used.

1. Add 1 pint of the water to a quart jar. Use the water from the same source and temperature as which will be used in the spray tank mixing operation.
2. Add 1 gram of this product to the quart jar for every 3 oz of this product per acre being applied (4 grams if 12 oz per acre is the desired rate of this product), gently mix until product goes into suspension.
3. Add 60 milliliters (4 Tablespoons or 2 fluid oz) of the crop oil or methylated seed oil to the quart jar or 1 milliliter of non-ionic surfactant if it is being used in place of oil, gently mix.
4. If nitrogen is being used, add 16 milliliters (1 Tablespoon, or 0.5 ounce) of the 28 to 32% nitrogen source to the quart jar. If ammonium sulfate is being used, add 19 g AMS to the quart jar in place of the 28 to 32% nitrogen.
5. Place cap on jar, invert 10 times, let stand for 15 minutes, evaluate.
6. An ideal tank mix combination will be uniform and free of suspended particles. If any of the following conditions are observed, question the choice of adjuvant:
  - a) Layer of oil or globules on the mixture's surface.
  - b) Flocculation: fine particles in suspension or as a layer on the bottom of the jar.
  - c) Clabbering: Thickening texture (coagulated) like gelatin.

#### **MIXING INSTRUCTIONS**

1. Fill clean spray tank 1/2 to 2/3 of desired level with clean water.
2. If a drift retardant is to be used, add 10 lbs of spray grade ammonium sulfate per 100 gallons of spray solution.
3. To ensure a uniform spray mixture, pre-slurry the required amount of this product with water prior to addition to the spray tank. Use a minimum of 1 gallon of water per 10 oz of this product.
4. While agitating, slowly add the pre-slurry of this product to the spray tank. Agitation creates a rippling or rolling action on the water surface.
5. If tank mixing this product with other labeled herbicides, add water soluble bags first, followed by dry formulations, flowables, emulsifiable concentrates and then solutions. Prepare no more spray mixture than is required for the immediate spray operation.
6. Add any required adjuvants.
7. Fill spray tank to desired level with water. **Continue agitation until all spray solution has been applied.**
8. Mix only the amount of spray solution that can be applied the day of mixing. Apply this product within 6 hours of mixing.

#### **SPRAYER PREPARATION**

Before application of this product, start with clean, well maintained application equipment. The spray tank, as well as all hoses and booms, must be cleaned to ensure no residue from the previous spraying operation remains in the sprayer. Some pesticides, including but not limited to, the sulfonylurea and phenoxy herbicides, (i.e., Classic® and 2,4-D respectively) are active at very small amounts and can cause crop injury when applied to susceptible crops. The spray equipment must be cleaned according to the manufacturer's directions for the last product used before the equipment is used to apply this product. If two or more products were tank mixed prior to application of this product, the most restrictive cleanup procedure must be followed.

#### **SPRAYER CLEANUP**

Spray equipment, including mixing vessels and nurse tanks, must be cleaned each day following application of this product. After this product is applied, the following steps must be used to clean the spray equipment:

1. Completely drain the spray tank, rinse the sprayer thoroughly, including the inside and outside of the tank and all in-line screens.
2. Fill the spray tank with clean water and flush all hoses, booms, screens and nozzles.
3. Top off tank, add 1 gallon of 3% household ammonia (or equivalent) for every 100 gallons of water, circulate through sprayer for 5 minutes, and then flush all hoses, booms, screens and nozzles for a minimum of 15 minutes. If diaphragms are being used on the spray boom, loosen diaphragms before flushing the spray system, allowing cleaning solution to spray through the open diaphragm. If spray lines have any end caps, they must be loosened before flushing the system, allowing cleaning solution to spray through the loosened caps. To enhance removal of this product from the spray system, add a tank cleaner, for example "Valent Tank Cleaner" from Valent U.S.A. Corporation, in place of ammonia and allow the cleaning solution to remain in the pressurized spray system (spray tank, hoses and boom) overnight before flushing the system for a minimum of 15 minutes.
4. Drain tank completely.
5. Add enough clean water to the spray tank to allow all hoses, booms, screens and nozzles to be flushed for 2 minutes.
6. Remove all nozzles and screens and rinse them in clean water.

Spray equipment, including all tanks, hoses, booms, screens and nozzles, must be thoroughly cleaned before it is used to apply postemergence pesticides. Equipment with residue of this product remaining in the system may result in crop injury to the subsequently treated crop.

#### **APPLICATION EQUIPMENT**

Application equipment must be clean and in good repair. Nozzles must be uniformly spaced on boom and frequently checked for accuracy.

#### **BROADCAST APPLICATION**

Apply this product and tank mixes of this product, with ground equipment using standard commercial sprayers equipped with flat fan or flood nozzles (preemergence applications only) designed to deliver the desired spray pressure and spray volume.

#### **PRECAUTIONS**

- **Carrier Volume and Spray Pressure:** When used as part of a burndown weed control program, apply this product in 7 to 10 gallons of water per acre. Application at less than 7 gallons per acre may provide inadequate control. When used for preemergence weed control, apply this product in 5 to 10 gallons of water per acre. The higher gallonage applications afford more consistent weed control. **DO NOT** exceed the

nozzle manufacturer's specified pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

• **Nozzle Selection and Orientation:** Formation of very small drops may be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible and by avoiding excessive spray pressure. Use nozzles that produce flat or hollow cone spray patterns. Use non-drip type nozzles, including diaphragm type nozzles, to avoid unwanted discharge of spray solution. The nozzles must be directed toward the rear of the aircraft, at an angle between 0 and 15° downward. **DO NOT** place nozzles on the outer 25% of the wings or rotors.

• **Adjuvants and Drift Control Additives:** Refer to tank mix partner's label for adjuvant directions. Drift control additives may be used. When a drift control additive is used, read and carefully observe the cautionary statements and all other information appearing on the additive label.

## **CHEMIGATION**

Follow all label instructions for crops regarding rates, timing of application, special instructions and precautions.

Apply this product only through center pivot systems. End guns must be turned off due to uneven application. **DO NOT** apply this product through any other type of irrigation system.

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

The system must be properly calibrated (with water only) to ensure that the amount of this product applied corresponds to the labeled rate.

Apply this product in 1/2 to 3/4 inches of water during the first sprinkler set. 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. Once chemigation has begun, the run must be completed to ensure no product is left in the system.

If you have any questions about calibration contact your State Extension Service Specialist, equipment manufacturers or other experts.

### **Special Precautions for Chemigation**

1. **DO NOT** connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
2. A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person, shall shut the system down and make necessary adjustments in the event the need arises.
3. The system must be free of leaks and clogged nozzles.
4. The pesticide must be supplied continuously for the duration of the aqueous application. An uneven application may cause injury to the crop or poor weed control.
5. Agitation must be maintained in the nurse tank.
6. The sprinkler chemigation system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.
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 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, or in the case where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
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, including a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with the 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.

### **Chemigation Systems Connected to Public Water Systems**

1. Public water system means a system for the provision to the public of piped water for human consumption, if such a 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.
2. Chemigation systems connected to the public water system must contain a functional, reduced pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, discharge the water from the public water system into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. All chemigation systems connected to the public water system must also follow restrictions listed in the preceding section titled "**Special Precautions for Chemigation**".

## **APPLICATION WITH DRY BULK FERTILIZERS**

Dry bulk fertilizer may be impregnated or coated with this product. Application of dry bulk fertilizer with this product provides weed control equal to, or slightly below, the same rate of this product applied in liquid carriers, due to better coverage with application via spray equipment. Follow label instructions for this product regarding rates, special instructions, cautions and special precautions. Apply 400 to 700 lbs. of the fertilizer/herbicide mixture per acre to obtain adequate soil coverage. Apply the mixture to the soil with properly calibrated equipment immediately after blending. Uniform application of the herbicide/fertilizer mixture is essential to prevent possible crop injury and to obtain uniform weed control.

**DO NOT** use ammonium nitrate and/or limestone as the sole source of fertilizer, as this product may not adhere to these materials.

Compliance with all federal and state regulations relating to blending pesticide mixtures with dry bulk fertilizer, registrations, labeling and application are the responsibility of the individual and/or company offering the fertilizer and mixtures of this product for sale.

This product must be premixed with water to form a slurry prior to impregnation on dry bulk fertilizer. For best results, use a minimum of 1 pint of water for each 2 oz of this product. Use a minimum of 6 pints of slurry of this product to impregnate 2000 lbs of the fertilizer for uniform coverage of the fertilizer. Closed drum, belt, ribbon or other commonly used dry bulk blenders may be used. The amount of this product required can be calculated with the following formula:

Oz of this Product per Ton of Fertilizer	=	Oz of this Product per Acre	X	2,000	÷	Lb of Fertilizer per Acre
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Thoroughly clean dry fertilizer blending equipment after this product has been placed in the system to avoid injury to sensitive crops that may be treated with fertilizers blended after the equipment has been used for this product. Rinse the sides of the blender and the herbicide tank with water. Then impregnate the rinsate onto a load of dry fertilizer intended for an approved crop. Use a maximum rate of 1 gallon of rinsate per ton of fertilizer. Follow with 1 to 2 loads of unimpregnated fertilizer in the blender before switching herbicides.

#### ROTATIONAL RESTRICTIONS

The following rotational crops may be planted after applying this product at the listed rate. Planting earlier than the specified rotational interval may result in crop injury.

**DO NOT plant any crop, except corn (field), cotton, peanut, soybean, sugarcane and sweet potato earlier than 30 days after applying this product.**

PANTHER HERBICIDE RATES	CROPS	ROTATION INTERVALS
1 oz/A (0.032 lb Al)	Cotton (no-till or strip-till only)	14 days <sup>1</sup>
1.5 to 2 oz/A (0.023 to 0.063 lb Al/A)	Cotton (no-till or strip-till only)	21 days <sup>1</sup>
2 oz/A (0.063 lb Al/A) or less	Peanut, Soybean, Sugarcane and Sweet Potato	immediately
	Field Corn (minimum and no-till)	7 days
	Cotton and Field Corn (conventional tillage), Rice, Sorghum, Sunflower, Tobacco and Wheat	30 days <sup>1</sup>
	Barley, Dry and Snap Beans, Flax, Peas, Rye, Safflower and Sweet Corn	3 months
	Alfalfa, Canola, Clover, Oats, Potato, Sugar Beet and all other crops not listed <sup>2</sup>	4 months if soil is tilled prior to planting 8 months if no tillage is performed
	Lentil	6 months
Up to 3 oz/A (0.093 lb Al/A)	Peanut, Soybean, Sugarcane and Sweet Potato	immediately
	Field Corn (minimum and no-till)	14 days
	Field Corn (conventional tillage) and Sorghum	30 days <sup>1</sup>
	Cotton, Rice, Sunflower, Tobacco, and Wheat	2 months <sup>1</sup>
	Barley, Dry and Snap Beans, Flax, Pea, Rye, Safflower and Sweet Corn	4 months
	Alfalfa, Clover, Oats, Potato, Sugar Beet	5 months if soil is tilled prior to planting 10 months if no tillage is performed
	Canola and all other crops not listed <sup>2</sup>	6 months if soil is tilled prior to planting 12 months if no tillage is performed
	Lentil	7 months
	Raised beds only: Head and Stem Brassica except Cabbage	2 months (if the top 4 inches of the beds have been removed)
Up to 4 oz/A (0.125 lb Al/A)	Sugarcane	immediately
	Cotton, Field Corn, Peanut, Rice, Sorghum, Soybean, Sunflower, Tobacco and Wheat	4 months
	Alfalfa, Canola, Clover, Potato, Sugar Beet and all other crops not listed <sup>2</sup>	6 months if soil is tilled prior to planting 12 months if no tillage is performed
	Raised beds only: Cabbage, melon, pepper and tomato <sup>[3]</sup>	2 months (if the top 4 inches of the beds have been removed)
6 to 12 oz/A (0.187 to 0.375 lb Al/A)	Cotton, Field Corn, Peanut, Rice, Sorghum, Soybean, Sunflower, Tobacco, and Wheat	9 months
	Alfalfa, Canola, Clover, Sugar Beet, and all other crops not listed <sup>2</sup>	12 months if soil is tilled prior to planting 18 months if no tillage is performed
	Trees can be transplanted 2 months after an application of this product <sup>4</sup>	

<sup>1</sup> At least one inch of rainfall/irrigation must occur between application and planting or crop injury may occur.

<sup>2</sup> Successful soil bioassay must be performed prior to planting these crops.

<sup>[3]</sup> **Arizona, California and Hawaii only:** For fallowed application on transplanted cabbage, melon, pepper and tomato beds use instructions see applicable directions in this label or follow supplemental labeling provided by Nufarm]

<sup>4</sup> Transplanted avocado, bushberries (including blueberry), caneberries, citrus fruit, fig, grape, nut trees, olive, pome fruit, pomegranate and stone fruit can be planted 2 months after an application of this product at 2 to 12 oz/A (0.063 to 0.375 lb/A).

**Table - Broadleaf Weeds Controlled by Residual Activity of This Product****BROADLEAF WEED SPECIES**

<b>SECTION A</b>		<b>ORGANIC MATTER</b>	<b>SOIL TYPE</b>	<b>PANTHER HERBICIDE RATE</b>
<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>			
Carpetweed	<i>Mollugo verticillata</i>	Up to 5%	All Soil Types	2 oz/A (0.063 lb AI/A)
Chickweeds, Common	<i>Stellaria media</i>			
Mouseear	<i>Cerastium vulgatum</i>			
Dandelion	<i>Taraxacum officinale</i>			
Eclipta	<i>Eclipta prostrata</i>			
Evening Primrose, Cutleaf	<i>Oenothera laciniata</i>			
Field Pennycress	<i>Thlaspi arvense</i>			
Florida Pusley	<i>Richardia scabra</i>			
Henbit	<i>Lamium amplexicaule</i>			
Lambsquarters, Common	<i>Chenopodium album</i>			
Little Mallow	<i>Malva parviflora</i>			
Marestail/Horseweed	<i>Conyza canadensis</i>			
Mayweed/False Chamomile	<i>Matricaria maritima</i>			
Nightshades, Black	<i>Solanum nigrum</i>			
Eastern Black	<i>Solanum ptycanthum</i>			
Hairy	<i>Solanum sarrachoides</i>			
Pigweeds, Redroot	<i>Amaranthus retroflexus</i>			
Smooth	<i>Amaranthus hybridus</i>			
Spiny Amaranth	<i>Amaranthus spinosus</i>			
Tumble	<i>Amaranthus albus</i>			
Prickly Lettuce	<i>Lactuca serriola</i>			
Prickly Sida (Teaweed)	<i>Sida spinosa</i>			
Puncturevine	<i>Tribulus terrestris</i>			
Purslane, Common	<i>Portulaca oleracea</i>			
Radish, Wild	<i>Raphanus raphanistrum</i>			
Redmaids	<i>Calandrinia ciliata</i> var. <i>menziessii</i>			
Shepherd's-purse	<i>Capsella bursa-pastoris</i>			
Smallflower Morningglory	<i>Jacquemontia tamnifolia</i>			
Sowthistle, Prickly	<i>Sonchus asper</i>			
Spotted Spurge	<i>Euphorbia maculata</i>			
Venice Mallow	<i>Hibiscus trionum</i>			

**Table - Broadleaf Weeds Controlled by Residual Activity of This Product (continued)**

<b>SECTION B</b>				
All weeds listed in Section A plus:				
<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>	<b>ORGANIC MATTER</b>	<b>SOIL TYPE</b>	<b>PANTHER HERBICIDE RATE<sup>2</sup></b>
Coffee Senna	<i>Cassia occidentalis</i>	Up to 3%	All Soil Types	2 oz/A (0.063 lb Al/A) Cotton, Chickpeas, Potato[*] and Dry Bean[*]
Common Ragweed <sup>1</sup>	<i>Ambrosia artemisiifolia</i>			
False Chamomile	<i>Tripleurospermum maritima</i>			
Florida Beggarweed	<i>Desmodium tortuosum</i>			
Golden Crownbeard	<i>Verbesina encelioides</i>			
Hairy Indigo	<i>Indigofera hirsuta</i>			
Hemp Sesbania	<i>Sesbania exaltata</i>			2.5 oz/A (0.079 lb Al/A) Field Corn and Soybean[*]
Jimsonweed	<i>Datura stramonium</i>			
Kochia	<i>Kochia scoparia</i>			
London Rocket	<i>Sisymbrium irio</i>			3 oz/A (0.095 lb Al/A) Peanut[*] and all other labeled crops
Morning glories <sup>3</sup>				
Entireleaf	<i>Ipomoea hederacea</i> var. <i>integriuscula</i>	3 to 5%	Coarse and Medium Soils (sandy loam, loamy sand, loamy, silt- loam, silt, sandy clay, sandy clay loam)	
Ivyleaf	<i>Ipomoea hederacea</i>			
Red/Scarlet	<i>Ipomoea coccinea</i>			
Tall	<i>Ipomoea purpurea</i>			
Mustard, Wild	<i>Brassica kaber</i>			
Palmer Amaranth	<i>Amaranthus palmeri</i>		Fine Soils: (silty clay, silty clay, loam, clay, clay loam)	
Spurred Anoda	<i>Anoda cristata</i>			
Tropic Croton	<i>Croton glandulosus</i>			
Waterhemp <sup>1</sup>				
Common	<i>Amaranthus rudis</i>			
Tall	<i>Amaranthus tuberculatus</i>			
Wild Poinsettia	<i>Euphorbia heterophylla</i>			
Yellow Rocket	<i>Barbarea vulgaris</i>			

<sup>1</sup> A postemergence herbicide with Lactofen (including Cobra® EPA Reg# 59639-34; Phoenix™ EPA Reg # 59639-118) or glyphosate (soybeans containing the glyphosate gene resistant trait only) may be needed following a preemergence application of this product to adequately control common ragweed or waterhemp in soybean fields with heavy pressure.

<sup>2</sup> Due to differences in crop canopy timing between peanuts[\*] and soybeans[\*], use 3 oz (0.095 lb Al/A) per acre of this product in peanuts[\*], regardless of soil type and organic matter content, except in the states of North Carolina, Oklahoma and Virginia where a maximum of 2 oz (0.063 lb Al) per acre can be applied in peanuts[\*]. This product will provide residual control of these weeds at 2 oz (0.063 lb Al) per acre when applied under a cotton canopy.

<sup>3</sup> Morningglory species are not adequately controlled on fine soils or soils with greater than 3% organic matter.

[\* - Not for Use in California.]

Table - Weeds Suppressed by Residual Activity of This Product

BROADLEAF WEED SPECIES		ORGANIC MATTER	OZ PER ACRE
COMMON NAME	SCIENTIFIC NAME		
Bristly Starbur	<i>Acanthospermum hispidum</i>	Up to 5%	2.0 to 3.0 (0.063 to 0.093 lb Al/A)
Copperleaf, Hophornbeam	<i>Acalypha ostryifolia</i>		
Ragweed, Giant	<i>Ambrosia trifida</i>		
Russian Thistle	<i>Salsola iberica</i>		
Smartweeds,			
Ladysthumb	<i>Polygonum persicaria</i>		
Pennsylvania	<i>Polygonum pensylvanicum</i>		
Smellmelon	<i>Cucumis melo</i>		
Velvetleaf	<i>Abutilon theophrasti</i>		
Wild Buckwheat	<i>Polygonum convolvulus</i>		
Wormwood, Biennial	<i>Artemisia biennis</i>		
GRASS WEED SPECIES		Up to 5%	1.5 to 3 (0.023 to 0.093 lb Al/A)
Barnyardgrass	<i>Echinochloa crus-galli</i>		
Bluegrass, Annual	<i>Poa annua</i>		
Crabgrass, Large	<i>Digitaria sanguinalis</i>		
Foxtail, Giant	<i>Setaria faberi</i>		
Goosegrass	<i>Eleusine indica</i>		
Lovegrass, California	<i>Eragrostis diffusa</i>		
Panicums,			
Fall	<i>Panicum dichotomiflorum</i>		
Texas	<i>Panicum texanum</i>		
Ryegrass, Italian	<i>Lolium multiflorum</i>		
Signalgrass, Broadleaf	<i>Brachiaria platyphylla</i>		
Cheat	<i>Bromus secalinus</i>		
Downy Brome <sup>[1]</sup>	<i>Bromus tectorum</i>		

<sup>[1]</sup> Not for use in California.]

## DIRECTIONS FOR USE IN FALL AND SPRING PREPLANT BURNDOWN AND FALLOW SEEDBED PROGRAMS IN FIELD CORN, PEANUT AND SOYBEAN

### (Preemergence to Crop)

[For Use in the States of Arizona, California and Hawaii Only]

#### RESTRICTIONS AND LIMITATIONS

- **DO NOT** apply to frozen or snow-covered soil.
- **DO NOT** perform any tillage operation after application or residual weed control will be reduced.
- Observe all rotational intervals prior to planting as listed in the "ROTATIONAL RESTRICTIONS" table.
- **DO NOT** apply more than the Maximum single application rate of 3 oz (0.094 lb Al).
- **DO NOT** apply more than the Maximum yearly application rate of 3 oz (0.094 lb Al).
- **DO NOT** apply more than the Maximum number of applications per year of 4.
- **DO NOT** apply sooner than the Minimum retreatment interval of 7 days.

#### FALL BURNDOWN AND FALLOW SEEDBED PROGRAMS

This product [, at 2 to 4 oz per acre (0.031 to 0.125 lb Al/A)] can be used in the fall to provide residual weed control in fields that will be planted the following spring with field corn, peanut or soybean [(refer to **Rotational Restrictions** table for rates and rotational intervals prior to planting)]. Weeds controlled by residual activity are listed in Table **Broadleaf Weeds Controlled by Residual Activity of This Product** (sections A and B), **Broadleaf Weeds Controlled by Residual Activity of This Product**; Table - **Weeds Controlled by Fall and Spring Preplant Burndown Programs**; and Table - **Weeds Controlled by Residual Activity of This Product**. If weeds have emerged at the time of application, use this product in combination with a labeled burndown herbicide. [Application must be made no earlier than October 15 in Region 2 or November 15 in Region 1 or when soil temperature falls below 50°F at a 2 inch depth to maintain residual weed control into the spring (April 1 in Region 1 and May 1 in Region 2) or up until planting, whichever comes first.] This product can be used in a fall burndown or fallow seedbed program [outside of Regions 1 and 2], however the length of residual control may be variable.

Abnormally warm or wet winters will reduce the length of weed control observed in the spring.

#### Fall Application Regions:

Region 1: Alabama, Arkansas, Georgia, Kentucky, Mississippi, Oklahoma, Tennessee and Virginia

Region 2: Delaware, Kansas, Illinois, Indiana, Iowa, Maryland, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Pennsylvania, South Dakota, West Virginia and Wisconsin]

Weeds controlled by postemergence or residual activity are listed in **Table - Weeds Controlled by Fall and Spring Preplant Burndown Programs**.

Preplant burndown treatment tank mixes and rates are:

Herbicide	Rate
<b>Program 1<sup>1</sup></b>	
Panther Plus	2 to 3 oz/A (0.063 to 0.093 lb Al/A)
Glyphosate Plus	0.5 to 1.0 lb ai/A (equivalent to 1 to 2 pt/A of Credit®, EPA Reg # 71368-20)
2,4-D LVE (2,4-D for use on preplant soybeans only) Plus	0.5 to 1.0 lb ai/A (equivalent to 1 to 2 pt/A of 2,4-D 4 LVE)
NIS + AMS	0.5% v/v + 17 lbs/100 gals of water

or

Herbicide	Rate
<b>Program 2<sup>1</sup></b>	
Panther Plus	2 to 3 oz/A (0.063 to 0.093 lb Al/A)
Glyphosate Plus	0.5 to 1.0 lb ai/A (equivalent to 1 to 2 pt/A of Credit®, EPA Reg # 71368-20)
COC <sup>2</sup> or NIS + AMS	1pt/A or 0.5% v/v + 17 lbs/100 gals of water

or

Herbicide	Rate
<b>Program 3<sup>1</sup></b>	
Panther Plus	2 to 3 oz/A (0.063 to 0.093 lb Al/A)
2,4-D LVE (2,4-D for use on preplant soybeans only) Plus	0.5 to 1.0 lb ai/A (equivalent to 1 to 2 pt/A of 2,4-D 4 LVE)
COC	1 pt/A

<sup>1</sup> Dicamba at 0.188 lb Al per acre (6 fl oz per acre of or Diablo, EPA Reg # 228-379) can be added to Programs 1, 2 & 3 to assist in the control of emerged broadleaves. Refer to dicamba label for rotational restrictions.

<sup>2</sup> Crop oil concentrate has been found to increase glyphosate burndown of emerged cutleaf evening primrose and Carolina geranium.

Table - Weeds Controlled by Fall and Spring Preplant Burndown Programs

WEEDS CONTROLLED <sup>1</sup>		POSTEMERGENCE			RESIDUAL
		Program 1	Program 2	Program 3	
COMMON NAME	SCIENTIFIC NAME	Weeds 3 inches or less			
Chamomile, False	<i>Matricaria maritime</i>	Yes	Yes	No	Yes
Cheatgrass	<i>Bromus tectorum</i>	Yes	Yes	No	Yes
Chickweed, Common	<i>Stellaria media</i>	Yes	Yes	No	Yes
Chickweed, Mouseear	<i>Cerastium vulgatum</i>	Yes	Yes	No	Yes
Cockle, White <sup>[5]</sup>	<i>Silene latifolia</i>	No	Yes	Yes	Yes
Dandelion	<i>Taraxacum officinale</i>	Yes	No	Yes <sup>2</sup>	Yes
Deadnettle, Purple	<i>Lamium purpureum</i>	Yes	Yes	Yes	Yes
Groundsel, Cressleaf	<i>Senecio glabellus</i>	Yes	Yes	-	Yes
Henbit	<i>Lamium amplexicaule</i>	Yes	Yes	Yes	Yes
Kochia	<i>Kochia scoparia</i>	Yes	Yes	Yes	Yes
Marestail/Horseweed	<i>Conyza canadensis</i>	Yes	Yes <sup>3</sup>	Yes	Yes
Mallow, Common	<i>Malva neglecta</i>	Yes	Yes	No	Yes
Prickly Lettuce	<i>Lactuca serriola</i>	Yes	Yes	Yes	Yes
Wormwood, Biennial	<i>Artemisia biennis</i>	Yes	Yes	Yes	Yes
		Weeds 12 inches or less			
Canola, Volunteer	<i>Brassica napus</i>	Yes	Yes	Yes	Yes
Carolina Geranium	<i>Geranium carolinianum</i>	Yes	Yes	Yes	-
Evening primrose, Cutleaf <sup>4</sup>	<i>Oenothera laciniata</i>	Yes	Yes	Yes	Yes
Flixweed	<i>Descurainia sophia</i>	Yes	Yes	Yes	Yes
Mustard, Tansy	<i>Descurainia pinnata</i>	Yes	Yes	Yes	Yes
Mustard, Wild	<i>Brassica kaber</i>	Yes	Yes	Yes	Yes
Shepherd's-purse	<i>Capsella bursa-pastoris</i>	Yes	Yes	Yes	Yes

<sup>1</sup> Refer to glyphosate and/or 2,4-D labels for additional weeds controlled and rotational restrictions.

<sup>2</sup> Use 1 lb AI per acre of 2,4-D LVE (equivalent to 2 pints per acre of 2,4-D 4 LVE) for control of emerged dandelion.

<sup>3</sup> Program 2 will not control emerged glyphosate resistant marestail/horseweed.

<sup>4</sup> Use Program 1 to control cutleaf evening primrose that are nearing 12 inches in height or are past the rosette stage.

Use Programs 2 or 3 to control cutleaf evening primrose that are 12 inches or less and in the rosette stage.

<sup>5</sup> Not for use in California.]

#### SPRING BURNDOWN PROGRAMS

This product may be used in combination with labeled preplant burndown herbicides to assist in the postemergence burndown of emerged weeds and provide residual weed control prior to crop emergence. Weeds controlled by residual activity are listed in Table **Broadleaf Weeds Controlled by Residual Activity of This Product**.

No-till planters that incorporate the soil during planting may result in decreased weed control in the row. Apply this product after planting peanuts and soybeans when these types of planters are used (within 3 days after planting soybeans, within 2 days after planting peanuts and before the crop emerges). This product cannot be applied after planting field corn.

This product can be used [at 1 to 3 oz per acre (0.031 to 0.093 lb AI/A)] with labeled preplant burndown herbicides to enhance the speed of burndown and increase weed spectrum.

This product can be used [at 1 to 3 oz per acre (0.031 to 0.093 lb AI/A) [1 to 2 oz per acre (0.031 to 0.063 lb AI/A)] in field corn, peanut and soybean burndown programs. See "DIRECTIONS FOR USE IN FIELD CORN", "DIRECTIONS FOR USE IN PEANUT", "DIRECTIONS FOR USE IN SOYBEAN" for more information.

**DIRECTIONS FOR USE IN FALL AND SPRING BURNDOWN  
PROGRAMS IN COTTON AND SUGARCANE  
[For Use in the States of Arizona, California and Hawaii Only]**

**RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply to frozen or snow covered soil.
- This product can be used [at 1 to 2 oz per acre (0.031 to 0.063 lb AI/A)] with labeled burndown herbicides to enhance the speed of burndown and increase weed spectrum.
- A minimum of 30 days must pass, and 1 inch of rainfall/irrigation must occur, between application of this product and planting of conventionally tilled cotton.
- A minimum of 14 days must pass, and 1 inch of rainfall/irrigation must occur, between application of this product and planting of no-till or strip-till cotton when a rate of this product at 1 ounce per acre (0.031 lb AI/A) is used and 21 days when a rate of this product at 1.5 to 2 oz per acre (0.023 to 0.063 lb AI/A) is used. The field must contain the stubble from the previous crop.
- This product can be applied as part of a burndown application to sugarcane until cane emergence.
- Observe all rotational intervals prior to planting as listed in the "ROTATIONAL RESTRICTIONS" table.
- Refer to most restrictive label for minimum interval between application and planting.
- **DO NOT** apply more than the Maximum single application rate for cotton of 3 oz (0.094 lb AI).
- **DO NOT** apply more than the Maximum yearly application rate for cotton of 3 oz (0.094 lb AI).
- **DO NOT** apply more than the Maximum number of applications for cotton of 4 per year.
- **DO NOT** apply sooner than the Minimum retreatment interval of 14 days.

**PRECAUTION**

- Any tillage operation after application or residual weed control will be reduced.

**FALL BURNDOWN PROGRAMS**

This product [at 2 to 4 oz per acre (0.063 to 0.125 lb AI/A).] can be used in the fall to provide residual weed control in fields that will be planted the following spring with cotton or sugarcane [(refer to Rotational Restrictions table for rates and rotational intervals prior to planting)]. Weeds controlled by residual activity are listed in Table **Broadleaf Weeds Controlled by Residual Activity of This Product** and Table - **Weeds Controlled by Residual Activity of This Product**. If weeds have emerged at the time of application, use this product in combination with a labeled burndown herbicide. [Application must be made no earlier than October 15 in Region 2 or November 15 in Region 1 or when soil temperature falls below 50°F at a 2 inch depth to maintain residual weed control into the spring (April 1 in Region 1 and May 1 in Region 2) or up until planting, whichever comes first.] [This product can be used in a fall burndown or fallow seedbed program outside of Regions 1 and 2.]

Abnormally warm or wet winters will reduce the length of weed control observed in the spring.

**SPRING BURNDOWN PROGRAMS**

This product [at 1 to 2 oz (0.031 to 0.063 lb AI) per acre] can be used in combination with labeled preplant burndown herbicides to assist in the postemergence burndown of emerged weeds and provide residual weed control prior to crop emergence in fields that will be planted with cotton or sugarcane. Weeds controlled by residual activity are listed in Table **Broadleaf Weeds Controlled by Residual Activity of This Product**.

No-till planters that incorporate the soil during planting may result in decreased weed control in the row.

**DIRECTIONS FOR USE IN FALL AND SPRING BURNDOWN PROGRAMS IN RICE,  
SORGHUM, SUNFLOWERS, TOBACCO AND WHEAT**

**(Preplant to Crop)**

**[For Use in the States of Arizona, California and Hawaii Only]**

**RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply to frozen or snow covered soil.
- **DO NOT** perform any tillage operation after application or residual weed control will be reduced. This product can be used [at 1 to 2 oz per acre (0.031 to 0.063 lb AI/A)] with labeled burndown herbicides to enhance the speed of burndown and increase weed spectrum. A minimum of 30 days must pass, and 1 inch of rainfall/irrigation must occur, between application of this product and planting of rice, sorghum, sugarcane, sunflowers, tobacco or wheat. Refer to most restrictive label for minimum interval between application and planting. Observe all rotational intervals prior to planting as listed in the "ROTATIONAL RESTRICTIONS" table.
- **DO NOT** apply more than 2 oz of this product (0.063 lb AI/A) per acre during a single application.
- **DO NOT** apply more than 3 oz of this product (0.094 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.

**FALL BURNDOWN PROGRAMS**

This product can be used in combination with labeled burndown programs to control emerged weeds and provide residual weed control in fields that will be planted the following spring [(refer to Rotational Restrictions table for rates and rotational intervals prior to planting)]. [Application must be made no earlier than October 15 in Region 2 or November 15 in region 1 or when soil temperature falls below 50°F at a two inch depth to maintain residual weed control into the spring.]

Abnormally warm winters may reduce the length of weed control observed in the spring.

## SPRING BURNDOWN PROGRAMS

This product can be used in combination with labeled burndown programs to control emerged weeds and provide residual weed control prior to crop emergence. Weeds controlled by residual activity are listed in Table - **Broadleaf Weeds Controlled by Residual Activity of This Product - Section A**. Crops that will be planted following application must be in compliance with the rotational interval listed in the "Rotational Restriction" table above.

No-till planters that incorporate the soil during planting may result in decreased weed control in the row.

## DIRECTIONS FOR USE IN FALL BURNDOWN PROGRAMS IN FIELDS TO BE PLANTED TO BARLEY, FIELD PEA, FLAX, LENTIL, SAFFLOWER, SUNFLOWER AND SPRING WHEAT

### (Preplant to Crop)

[For Use in the States of Arizona, California and Hawaii Only]

## FALL BURNDOWN PROGRAMS

This product can be used [at 2 to 4 oz (0.063-0.125 lb AI) per acre] with labeled burndown herbicides to enhance the speed of burndown, increase weed spectrum and provide residual weed control of the weeds listed in Table - **Weeds Controlled by Fall and Spring Preplant Burndown Programs** until the following spring. Rotational intervals must be followed for crop to be planted in the spring following the fall application of this product. Refer to most restrictive label for minimum interval between application and planting.

## RESTRICTIONS AND LIMITATIONS

- **DO NOT** apply to frozen or snow covered soil.
- **DO NOT** perform any tillage operation after application or residual weed control will be reduced.
- This product can be mixed with 2,4-D and/or glyphosate formulations labeled for burndown programs (preplant to crop) in accordance with the most restrictive label limitations and precautions. Labeled application rates must not be exceeded. **DO NOT** mix this product with any product containing a label prohibition against such mixing.
- Observe all rotational intervals prior to planting as listed in the "ROTATIONAL RESTRICTIONS" table.
- **DO NOT** apply more than 3 oz of this product (0.094 lb AI) per acre during a single application.
- **DO NOT** apply more than 3 oz of this product (0.094 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.

## DIRECTIONS FOR USE IN FALLOW LAND

[For Use in the States of Arizona, California and Hawaii Only]

This product may be used as a preemergence fallow treatment. Weeds controlled by residual activity are listed in Table - **Broadleaf Weeds Controlled by Residual Activity of This Product**. This product [, at 2 to 4 oz per acre (0.063 to 0.125 lb AI/A),] can be used in the fall to provide residual weed control in fallow fields [(refer to Rotational Restrictions table for rates and rotational intervals prior to planting)]. If weeds have emerged at the time of application, use this product in combination with a labeled fallow herbicide. [Application must be made no earlier than October 15 in Region 2 or November 15 in Region 1 or when soil temperature falls below 50°F at a 2 inch depth to maintain residual weed control into the spring (April 1 in Region 1 and May 1 in Region 2).] Abnormally warm or wet winters will reduce the length of weed control observed in the spring.

This product [, at 1 to 4 oz per acre (0.031 to 0.125 lb AI/A),] can be used in spring in combination with labeled burndown herbicides to control emerged weeds and provide residual weed control.

## DIRECTIONS FOR USE IN ESTABLISHED ALFALFA

## RESTRICTIONS AND LIMITATIONS

- **DO NOT** apply more than 4 oz of this product (0.125 lb AI) per acre during a single application.
- **DO NOT** apply more than 8 oz of this product (0.25 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** apply sooner than the Minimum retreatment interval of 60 days..
- **DO NOT** apply to alfalfa with greater than 6 inches of growth. Application will result in burning of treated leaves and stems. Users must understand and accept this risk before using this product on alfalfa.
- **DO NOT** apply within 25 days of harvest or grazing.
- **DO NOT** use on alfalfa grown for seed unless approved by a State authority to support a Special Local Need (SLN) under FIFRA section 24(c).
- Only apply with an adjuvant or tank mix with products formulated as an emulsifiable concentrate "EC" when targeting control of emerged weeds (expect and accept crop burn and/or stunting if this product is used with an adjuvant, a tank mix partner formulated as an emulsifiable concentrate (EC) or a tank mix partner formulated with an adjuvant.)
- Application with paraquat can be used to burndown winter annuals prior to winter dormant period.
- **DO NOT** use on intended mixed alfalfa-grass stands.

## TIMING TO ALFALFA

This product may be applied to established alfalfa with a maximum amount of growth of 6 inches or less for the preemergence control of the weeds listed in Table - **Weeds Controlled by Residual Activity of This Product**. Established alfalfa is defined as alfalfa planted in the fall or spring which has gone through a first cutting/mowing. Application to alfalfa with greater than 6 inches of growth may result in unacceptable crop injury.

For control of winter annual weeds: the best timing for preemergence control is in the fall immediately after the last cutting or shearing-off has occurred.

For control of summer annual weeds: the best timing for preemergence control is in the spring prior to alfalfa growth and before 6 inches of growth.

## **TIMING TO WEEDS**

### **Preemergence – Preemergence To Weeds**

Apply this product before alfalfa growth exceeds 6 inches in height for the preemergence control of weeds listed in Table - **Weeds Controlled by Residual Activity of This Product**. Apply as soon as possible after cutting and removing alfalfa to minimize injury to alfalfa growth.

### **Postemergence Dodder<sup>[1]</sup> Suppression**

Apply this product at 4 oz (0.125 lb AI) per acre with an adjuvant for postemergence suppression of dodder. Tank mixes with imazethapyr will increase control.

<sup>[1]</sup> Not for use in California.]

## **DIRECTIONS FOR USE IN ESTABLISHED ARTICHOKE**

### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply more than 4 oz of this product (0.125 lb AI) per acre during a single application on annual or perennial artichoke varieties after new planting.
- **DO NOT** apply more than 6 oz of this product (0.188 lb AI) per acre during a single application on perennial artichoke varieties after cutback.
- **DO NOT** apply more than 6 oz of this product (0.188 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** apply when artichokes have begun to emerge (cracking).
- **DO NOT** apply sooner than the Minimum retreatment interval of 7 days.
- Application to artichoke foliage may result in unacceptable crop injury.

## **TIMING TO ARTICHOKE**

**Annual Varieties:** This product may be applied to artichoke beds prior to transplanting. Application of this product must be made to the beds no later than 2 days prior to transplanting. Irrigation or rainfall after transplanting is necessary to activate this product. Irrigate this product before transplanting. Heavy irrigation or rainfall may result in crop injury. The injury is usually transitory and the plants will quickly grow out of the crop damage. Take care to minimize soil disturbance during transplanting, as preemergence weed control will decrease as soil disturbance increases.

**Perennial Varieties:** This product may be applied to artichokes after planting of crown pieces or "cut back" of mature plants. Applications of this product must be made within 2 days after planting or cut back and prior to artichoke emergence. Application after the artichokes have begun to crack, or are emerged, will result in crop injury. **DO NOT** apply when artichokes have begun to emerge (cracking).

## **TIMING TO WEEDS**

### **Pre-plant (annual)/Preemergence (perennial) to Artichokes - Preemergence to Weeds**

Apply this product pre-plant to annual artichokes for preemergence control of the weeds. For perennial artichokes apply before cracking for preemergence control the weeds. Apply prior to weed emergence. A post-emergence herbicide may be necessary to control emerged weeds. This product may be applied to annual or perennial artichokes as specified above for preemergence control of weeds listed in Table - **Weeds Controlled by Residual Activity of This Product**.

## **DIRECTIONS FOR USE IN ESTABLISHED ASPARAGUS**

### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply more than 6 oz of this product (0.188 lb AI) per acre during a single application.
- **DO NOT** apply more than 6 oz of this product (0.188 lb AI) per acre during a single growing season.
- **DO NOT** make more than 4 applications per year.
- Apply only to dormant asparagus no less than 14 days before spears emerge. Application to non-dormant asparagus may result in unacceptable crop injury.
- **DO NOT** apply sooner than the Minimum retreatment interval of 7 days.
- **[DO NOT** work soil within 60 days prior to application in the spring. Soil can be worked after spear harvest in preparation for applications of this product prior to fern emergence. Treated soil that is splashed onto the ferns may result in spotting.]

## **TIMING TO ASPARAGUS – Dormant**

This product may be applied to dormant asparagus for preemergence control of the weeds listed in Table - **Weeds Controlled by Preemergence Application of This Product**. Application to non-dormant asparagus will result in unacceptable crop injury. Apply no less than two weeks prior to spear emergence and must be sprinkler or rainfall incorporated with 0.5 to 0.75 inches of water or some scoring may result.

## **TIMING TO ASPARAGUS - Post Harvest**

Apply this product after the final harvest of the season, but prior to fern emergence, for preemergence control of the weeds listed in Table - **Weeds Controlled by Preemergence Application of This Product**. Application after fern emergence will result in unacceptable crop injury. Apply no less than two weeks prior to fern emergence and must be sprinkler or rainfall incorporated with 0.5 to 0.75 inches of water. Add a burndown tank mix partner for the control of emerged weeds labeled for asparagus in accordance with the most restrictive labeled limitations and precautions.

## **TIMING TO WEEDS**

### **Burndown - Dormant Asparagus, Postemergence to Weeds**

This product may be used for residual weed control, as well as to assist in postemergence burndown of many annual and perennial weeds where asparagus is dormant. For control of emerged weeds, tank mix this product with paraquat. Refer to paraquat label for specified rate and application parameters. To ensure thorough coverage, use a minimum of 15 gallons of spray solution per acre. Tank mixes of this product applied to assist in the control of emerged weeds must be applied with a non-ionic surfactant at 0.25% v/v. A spray grade nitrogen source (either ammonium sulfate at 2 to 2.5 lbs per acre or 28 to 32% nitrogen solution at 1 to 2 quarts per acre) may be added to increase herbicidal activity.

### **Burndown - After Last Harvest of Season, Postemergence to Weeds**

Use this product for residual weed control and to assist in postemergence burndown for many annual and perennial weeds where asparagus harvest has been completed for the year. For control of emerged weeds, use a labeled tank mix partner with activity on the emerged weeds.

### **Preemergence - Dormant Asparagus or After Last Harvest of Season, Preemergence to Weeds**

Apply this product to dormant asparagus for the preemergence control of weeds listed in Table - **Weeds Controlled by Preemergence Application of This Product**.

## **[DIRECTIONS FOR USE IN BRASSICA HEAD AND STEM VEGETABLE [<sup>1</sup>]]**

### **Brassica Head and Stem Vegetable Crop Group 5-16 Includes:**

Broccoli; Brussels Sprouts; Cabbage; Cabbage, Chinese, napa; Cauliflower; cultivars, varieties, and/or hybrids of these.

[<sup>1</sup> Not for use in California.]

## **[FOR DISTRIBUTION AND USE ONLY WHERE THIRD PARTY INDEMNIFICATION IS IN EFFECT]**

### **RESTRICTIONS**

- **DO NOT** apply after crops are transplanted.
- **DO NOT** apply more than 3 oz of this product (0.094 lb AI) per acre during a single application. For Cabbage **DO NOT** apply more than 4 oz of this product (0.125 lb AI) per acre during a single application.
- **DO NOT** apply more than 6 oz of this product (0.188 lb AI) per acre per year. For Cabbage **DO NOT** apply more than 8 oz of this product (0.25 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** apply sooner than the Minimum retreatment interval of 7 days.

### **PRECAUTIONS**

- This product can only be applied in row middles between raised plastic mulched beds that are at least 4 inches higher than the treated row middle and the mulched bed must have a minimum of a 24-inch bed width.
- Spray must remain between raised beds and contact no more than the bottom 1 inch of the side of the raised bed.
- All applications must be made with shielded or hooded equipment.
- Efficacy will be reduced if This product is applied to areas of standing water within the row middles.
- Injury can occur if soil particles treated with This product contact the crop.
- Irrigate treated field after application and prior to transplanting with minimum of 1/4 inch of water if rainfall does not occur between application and transplanting.

### **TIMING TO CROP**

This product may be applied at 3 oz (0.094 lb AI) per acre (except cabbage may be applied at 4 oz/A (0.125 lb AI) as a shielded or hooded application to row middles after plastic is laid up to transplanting or seeding. Transplanting or seeding can take place any time after spray has dried. Spray must be applied to the row middle and contact no more than approximately the bottom 1 inch of the side of the raised bed. If the top of the mulch beds (where plants are to be transplanted) is contacted, severe injury can occur due to foliage contact with treated plastic.

### **WEED CONTROL AND TANK MIXING**

This product provides preemergence residual control of the weeds listed in Table - **Weeds Controlled by Residual Activity of This Product**, as well as to assist in the postemergence control of emerged weeds. A registered preemergence grass herbicide may be added for control of additional grassy weeds. For control of emerged weeds, tank mix this product with paraquat, Aim, glyphosate or other registered burndown herbicide. Refer to tank mix partner label for specified rates and application parameters.]

## **DIRECTIONS FOR USE ON CABBAGE AND CHINESE CABBAGE (TIGHT HEADED VARIETIES ONLY) ROW MIDDLE**

[FOR DISTRIBUTION AND USE ONLY WHERE THIRD PARTY INDEMNIFICATION IS IN EFFECT]

### **DIRECTIONS FOR USE IN ROW MIDDLE**

#### **RESTRICTIONS AND LIMITATIONS**

- This product can only be applied in row middles between raised plastic mulched beds that are at least **4 inches higher** than the treated rowmiddle and the mulched bed must have a **minimum of a 24-inch bed width**.
- Spray must remain between raised beds and contact no more than the bottom 1 inch of the side of the raised bed.

- **DO NOT** apply after crops are transplanted.
- **DO NOT** apply more than 4 oz (0.125 lb AI) of this product per acre during a single application.
- **DO NOT** apply more than 8 oz of this product per year.
- All applications must be made with shielded or hooded equipment.
- Injury can occur if soil particles treated with this product contact the crop.
- A rainfall after application but prior to transplanting is required.
- Retreatment interval is 14 days.
- **DO NOT** make more than 4 applications per year.

#### RATE

Up to 4 oz (0.125 lb AI) of this product per acre.

#### TIMING TO CROP

This product may be applied at 4 oz (0.125 lb AI) per acre as a shielded or hooded application to row middles after plastic is laid up to transplanting. Spray must be directed to the row middle and contact no more than the bottom 1 inch of the side of the raised bed. If the top of the mulch beds (where plants are to be transplanted) is contacted, severe injury can occur due to foliage contact with treated plastic.

#### WEED CONTROL AND TANK MIXING

This product provides preemergence residual control of the weeds listed in Table - **Weeds Controlled by Residual Activity of This Product**, as well as to assist in the postemergence control of emerged weeds. A registered preemergence grass herbicide may be added for control of additional grassy weeds. For control of emerged weeds, tank mix this product with paraquat, Aim™, glyphosate, or other registered burndown herbicide. Refer to tank mix partner label for recommended rates.

### DIRECTIONS FOR USE ON CACTUS<sup>[1]</sup> (PRICKLY PEAR)

**[<sup>1</sup> Not for use in California.]**

#### RESTRICTIONS AND LIMITATIONS

- **DO NOT** apply more than 12 oz of this product (0.38 lb AI) per acre during a single application.
- **DO NOT** apply more than 12 oz of this product (0.38 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** apply sooner than the Retreatment interval of 14 days.
- Use a maximum rate of 6 oz (0.188 lb AI) per acre of this product per application on any soil that has a sand plus gravel content over 80% if plants are less than 3 years of age. (Two applications of 6 oz (0.188 lb AI) per acre per year can still be made as long as there have been 60 days between applications).
- **DO NOT** apply to farm alleys or roads where traffic may result in treated dust settling onto crops or other desirable vegetation.
- Raise mower height during all mowing to reduce dust. Dust created by mowing can drift onto desirable vegetation resulting in injury.
- **DO NOT** mow treated areas. Dust created by mowing may drift onto desirable vegetation resulting in injury.
- Follow the most restrictive label limitations and precautions of the tank mix product(s) being used.
- Avoid direct or indirect spray contact to foliage.
- **DO NOT** apply within 60 days prior to harvest.
- **DO NOT** apply to plants established less than one year.

Apply this product as a uniform broadcast application to the plantation floor or as a uniform band directed at the base of the cactus. The preferred application timing for this product is in the fall to maximize the potential for rainfall to activate and set the herbicide. **DO NOT** apply over the top of crop or allow spray to come in contact with crop as a result of application or drift.

#### Preemergence Application

Apply 6 to 12 oz (0.188 to 0.38 lb AI per acre) of this product per broadcast acre as a preemergence application. Applications of this product must be made prior to weed emergence for control of weeds listed in Table - **Weeds Controlled by Preemergence Application of This Product**. Make preemergence (to weed emergence) applications of this product to a weed-free soil surface. Preemergence applications of this product must be completed prior to weed emergence. Moisture is necessary to activate this product on soil for residual weed control. Dry weather following application of this product may reduce effectiveness. However, when adequate moisture is received after dry conditions, this product will control susceptible germinating weeds.

#### [Postemergence Application

Apply 6 to 12 oz (0.188 to 0.38 lb AI per acre) of this product per broadcast acre plus an adjuvant (0.25% v/v non-ionic surfactant or 1 quart per acre crop oil concentrate). The addition of an adjuvant enhances the activity of this product on emerged weeds. Thorough spray coverage is necessary to maximize the postemergence activity of this product.

Refer to Table - **Broadleaf Weeds Controlled by Residual Activity of This Product** for weeds controlled by the residual activity of this product. Tank mix this product with a labeled burndown herbicide for control of the emerged weeds.

Residual weed control will be reduced if vegetation prevents this product from reaching the soil surface. If vegetation is heavy, it is directed to use a burndown herbicide with this product and make sequential applications of this product prior to the emergence of new weeds.]

#### **Carrier Volume and Spray Pressure**

To ensure thorough coverage in burndown applications, use a minimum of 15 gallons of spray solution per acre.

Use higher gallonage if dense vegetation or heavy crop residue is present.

Nozzle selection must meet manufacturer's gallonage and pressure specifications.

#### **Banded Application**

Rates listed in Table - **Weeds Controlled by Postemergence Activity of This Product Tank Mixes**, refer to a broadcast application covering the entire acre. Refer to the Band Application table in Use Information Section to calculate amount needed per acre when making a banded application.

### **DIRECTIONS FOR USE IN CELERY**

**[For Use in the States of [California], Michigan and Wisconsin Only]**

#### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply more than 3 oz of this product (0.094 lb AI) per acre during a pre-transplant application.
- **DO NOT** apply more than 3 oz of this product (0.094 lb AI) per acre during a post-transplant application.
- **DO NOT** apply more than 3 oz of this product (0.094 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.
- [In the state of California, use as pre-transplant application only.]
- **DO NOT** use with an adjuvant.
- Post transplant applications must be made between 3 to 7 days following transplanting.
- **DO NOT** apply as part of a tank mix.

#### **TIMING TO CELERY**

Apply this product at 3 oz (0.094 lb AI) per acre prior to transplanting, or between 3 and 7 days following transplanting, for preemergence control of the weeds listed in Table - **Broadleaf Weeds Controlled by Residual Activity of This Product**.

#### **TIMING TO WEEDS**

Use this product prior to weed emergence for residual control.

**This product, when applied according to label use directions, will control the weeds listed in Table - Broadleaf Weeds Controlled by Residual Activity of This Product. This label makes no claims concerning control of other weed species.**

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

### **DIRECTIONS FOR USE FOR IN CHICKPEA (GARBANZO BEAN)**

**[For Use Only in Arizona, California, Hawaii, Idaho, Oregon and Washington]**

#### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply more than 2 oz of this product (0.063 lb AI) per acre during a single application.
- **DO NOT** apply more than 2 oz of this product (0.063 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** apply sooner than the Retreatment interval of 14 days.

**Many weather related factors, including high wind, splashing or heavy rains or cool conditions at or near crop emergence, may result in dry bean injury in fields treated with this product. On occasion this has resulted in a delay in maturity. User assume these risks before using this product.**

#### **TIMING TO CHICKPEA (GARBANZO BEAN)**

This product may be applied to dry beans within 2 days after planting for the preemergence suppression of the weeds listed in Table - **Weeds Suppressed by Residual Activity of This Product**. If the rate is reduced to 1.5 oz (0.047 lb) then the Table - **Weeds Suppressed by Residual Activity of This Product at 1.5 oz (0.047 lb AI) per Acre** should be used. Tank mix this product with other labeled herbicides for broad spectrum weed control.

#### **TIMING TO WEEDS**

This product may be applied to garbanzo beans prior to planting or preemergence (after planting). Preemergence application of this product must be made within 2 days after planting and prior to garbanzo bean emergence. Application after the garbanzo beans have begun to crack, or are emerged, will result in severe crop injury. **DO NOT** apply when garbanzo beans have begun to crack.

Preplant incorporation (PPI) applications may result in reduced weed control.

#### **ADDITIONAL RESIDUAL GRASS CONTROL**

This product can be tank mixed with pendimethalin for additional grass control.

## [DIRECTIONS FOR USE IN ESTABLISHED CLOVER[\*]]

[For Use in the States of Idaho, Oregon and Washington Only]

[\*Not for Use in California]

### RESTRICTIONS AND LIMITATIONS

- **DO NOT** apply more than 4 oz of this product (0.125 lb AI) per acre during a single application.
- **DO NOT** apply more than 4 oz of this product (0.125 lb AI) per acre during a single year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** apply within 25 days of harvest or grazing.
- **DO NOT** apply sooner than the Retreatment interval of 14 days.

### PRECAUTIONS

- Application to clover with greater than 6 inches of growth may result in unacceptable crop injury.
- **DO NOT** apply to clover with greater than 6 inches of growth. Application will result in burning of treated leaves and stems. Users must understand and accept this risk before using this product on clover.
- Only apply with an adjuvant or tank mix with products formulated as an emulsifiable concentrate "EC" when targeting control of emerged weeds (expect and accept crop may be burned and/or stunting when applying tank mixes of this product with an adjuvant), or injury may result.
- Application with paraquat can be used to burndown winter annuals prior to winter dormant period.
- **DO NOT** use on intended mixed clover-grass stands, or injury may result.

### TIMING TO CLOVER

This product may be applied to established clover with a maximum amount of growth of 6 inches or less for the preemergence control of the weeds listed in **Table - Weeds Controlled by Residual Activity of This Product**. Established Clover is defined as clover planted in the fall or spring which has gone through a first cutting/mowing.

For control of winter annual weeds: the best timing for preemergence control is in the fall immediately after the last cutting or sheepping-off has occurred.

For control of summer annual weeds: the best timing for preemergence control is in the spring prior to clover growth and before 6 inches of growth.

### TIMING TO WEEDS

#### Preemergence – Preemergence to Weeds

Apply this product before clover growth exceeds 6 inches in height for the preemergence control of weeds listed in **Table - Weeds Controlled by Residual Activity of This Product**. Apply as soon as possible after cutting and removing clover to minimize injury to clover growth.

#### Postemergence Dodder Suppression

Apply this product at 4 oz per acre (0.125 lb AI) with an adjuvant for postemergence suppression of dodder. Tank mixes with Pursuit Herbicide or Raptor Herbicide will increase control.]

## DIRECTIONS FOR USE IN COTTON

[For Use in the States of Arizona, California and Hawaii Only]

### RESTRICTIONS AND LIMITATIONS

- **DO NOT** apply more than 2 oz of this product (0.063 lb AI) per acre during a single application.
- **DO NOT** apply more than 4 oz of this product (0.125 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.
- Retreatment interval is 30 days.
- **DO NOT** apply within 60 days of harvest.

### ENVIRONMENTAL CONDITIONS AND BIOLOGICAL PERFORMANCE

#### Hooded, Shielded and Layby Application

For best results, apply this product to actively growing weeds within the growth stages indicated in this label. Applying this product under conditions that **DO NOT** promote active weed growth will reduce herbicide effectiveness. **DO NOT** apply this product when the crop or weeds are under stress due to drought, excessive water, extremes in temperature, disease or low humidity. Weeds under stress tend to become less susceptible to herbicidal action. This product is most effective when applied under sunny conditions at temperatures above 65°F.

This product is rainfast one hour after application. Postemergent efficacy may be reduced if rain is expected within one hour of application. Rainfall within one hour of application will not adversely affect residual activity.

### HERBICIDE RATE

#### Hooded, Shielded and Layby Application

For postemergence weed control, apply this product through a hooded or shielded sprayer or at layby, at 2 oz (0.063 lb AI) per acre, in combinations with MSMA or at 1 to 2 oz per acre (0.032-0.063 lb AI) in combination with glyphosate, to assist in the control of weeds listed in **Table - Emerged Broadleaf Weeds Controlled by Hooded, Shielded and Layby Application of Tank Mixes of This Product With Glyphosate or MSMA in Cotton**. Residual weed control can also be obtained through hooded, shielded and layby application of this product. Weeds that are controlled through residual activity of this product are listed in **Table - Broadleaf Weeds Controlled by Residual Activity of This Product**. Weeds that are suppressed by residual activity of this product are listed in **Table - Weeds Suppressed by Residual Activity of This Product**.

Table - Emerged Broadleaf Weeds Controlled by Hooded, Shielded and Layby Application of Tank Mixes of This Product With Glyphosate or MSMA in Cotton

BROADLEAF WEED SPECIES		WEED HEIGHT (inches) 2 oz/A
COMMON NAME	SCIENTIFIC NAME	
Bindweed, Field <sup>1</sup>	<i>Convolvulus arvensis</i>	4
Carpetweed	<i>Mollugo verticillata</i>	4
Chickweed, Common	<i>Stellaria media</i>	4
Cocklebur, Common	<i>Xanthium strumarium</i>	4
Florida Beggarweed	<i>Desmodium tortuosum</i>	2
Hemp Sesbania	<i>Sesbania exaltata</i>	6
Jimsonweed	<i>Datura stramonium</i>	4
Lambsquarters, Common	<i>Chenopodium album</i>	4
Morning Glories,		
Entireleaf	<i>Ipomoea hederacea</i> var. <i>integriuscula</i>	4
Ivyleaf	<i>Ipomoea hederacea</i>	4
Pitted	<i>Ipomoea lacunose</i>	4
Red	<i>Ipomoea coccinea</i>	4
Tall	<i>Ipomoea purpurea</i>	2
Mustard, Wild	<i>Brassica kaber</i>	6
Nightshades,		
Black	<i>Solanum nigrum</i>	4
Eastern Black	<i>Solanum ptycanthum</i>	4
Hairy	<i>Solanum sarachoides</i>	4
Pigweeds,		
Palmer Amaranth	<i>Amaranthus palmeri</i>	4
Redroot	<i>Amaranthus retroflexus</i>	4
Smooth	<i>Amaranthus hybridus</i>	4
Plantain, Broadleaf	<i>Plantago major</i>	6
Prickly Sida (Teaweed)	<i>Sida spinosa</i>	4
Purslane, Common	<i>Portulaca oleracea</i>	2
Ragweeds,		
Common	<i>Ambrosia artemisiifolia</i>	2
Giant	<i>Ambrosia trifida</i>	4
Rice Flatsedge	<i>Cyperus iria</i>	2
Sicklepod	<i>Senna obtusifolia</i>	4
Smartweeds,		
Ladysthumb	<i>Polygonum persicaria</i>	4
Pale	<i>Polygonum lapathifolium</i>	4
Pennsylvania	<i>Polygonum pensylvanicum</i>	4
Spotted Spurge	<i>Euphorbia maculata</i>	4
Velvetleaf	<i>Abutilon theophrasti</i>	4
Venice Mallow	<i>Hibiscus trionum</i>	2
Waterhemp,		
Common	<i>Amaranthus rudis</i>	2
Tall	<i>Amaranthus tuberculatus</i>	2

<sup>1</sup> Tank mixes of this product will control the above ground portion of field bindweed. Repeated applications will be needed to control regrowth.

#### CARRIER VOLUME AND SPRAY PRESSURE

##### Hooded, Shielded and Layby Application

To ensure thorough coverage in hooded, shielded and layby applications, use 15 to 30 gallons spray solution per treated acre. Use 20 to 30 gallons per treated acre under heavy weed pressure. Nozzle selection must meet manufacturer's gallonage and pressure specifications for application method being used. **DO NOT** use "Flood Jet" nozzles, as they tend to increase the chance of crop injury.

#### ADDITIVES

##### Hooded, Shielded and Layby Application

Weed control from hooded, shielded or layby application of this product in cotton requires the addition of an agronomically approved non-ionic surfactant to the spray mixture. Non-ionic surfactant must contain at least 80% active ingredient. Verify mixing compatibility qualities by a jar

test. The use of crop oil concentrates, methylated seed oils, organo-silicant surfactants or products containing these ingredients may result in severe crop injury.

#### APPLICATION EQUIPMENT

Apply tank mixes of this product, with ground equipment using standard commercial sprayers equipped with nozzles designed to deliver the desired spray pressure and spray volume. Application equipment must be clean and in good repair. Nozzles must meet manufacturer's specifications for spray pattern and placement on spray boom and must be checked frequently for accuracy.

#### TIMING TO COTTON

##### Hooded and Shielded Application

Tank mixes of this product may be applied with a hooded or shielded sprayer after cotton has reached a minimum of 6 inches in height. All nozzles must be under the hood or behind the shield to ensure no spray solution comes in contact with the cotton. **Care must be taken to ensure the spray solution or drift does not come in contact with the cotton or severe crop injury can occur.**

##### Layby Application

Layby application of tank mixes of this product may be made once cotton has reached a minimum of 16 inches in height. Cotton that is smaller than 16 inches in height may be injured by applications of this product. Application of this product must be directed to the lower 2 inches of the cotton stem to avoid crop injury.

#### TIMING TO WEEDS

Tank mix applications of this product must be made to weeds within the height range given in Table - **Emerged Broadleaf Weeds Controlled by Hooded, Shielded and Layby Application of Tank Mixes of This Product With Glyphosate or MSMA in Cotton.**

#### TANK MIXES

This product must be tank mixed with one of the herbicides listed in Table - **Tank Mixes with This Product for Hooded, Shielded and/or Layby Use in Cotton** for postemergence control of the weeds listed in Table - **Emerged Broadleaf Weeds Controlled by Hooded, Shielded and Layby Application of Tank Mixes of This Product With Glyphosate or MSMA in Cotton.**

Table - Tank Mixes for Hooded, Shielded and/or Layby Use in Cotton

TANK MIX PARTNER	TARGET WEEDS	HOODED AND SHIELDED	LAYBY
Glyphosate	Perennial Grasses and Broadleaves	X	X <sup>1</sup>
MSMA	Annual Grasses Yellow Nutsedge	X	X

<sup>1</sup>For use only in cotton with the glyphosate tolerant gene trait.

#### DIRECTIONS FOR USE IN CUCURBIT VEGETABLES<sup>[1]</sup>

[<sup>1</sup> Not for use in California.]

**Cucurbit Vegetables Crop Group 9 Includes:** chayote (fruit); Chinese Waxgourd (Chinese preserving melon); citron melon; cucumber; gherkin; gourd, edible (includes hyotan, cucuzza, hechima, Chinese okra); *Momordica* spp. (includes balsam apple, balsam pear, bittermelon, Chinese cucumber); muskmelon (includes cantaloupe); pumpkin; squash, summer; squash, winter (includes butternut squash, calabaza, hubbard squash, acorn squash, spaghetti squash); watermelon

Many weather related factors, including high wind or heavy rains or cool conditions at or near crop transplanting, may result in crop injury in fields treated with this product. On occasion this has resulted in a delay in maturity. User must assume these risks before using this product.

Read tank mix product label for rate and weeds controlled. Always read and follow label directions for all tank mix products before using. The most restrictive labeling of any tank mix product must be followed. When this product is applied according to label use directions, will control the weeds listed in Table - Weeds Controlled by Residual Activity of This Product. This label makes no claims concerning control of other weed species.

#### RESTRICTIONS AND LIMITATIONS

- **DO NOT** apply more than 4 oz of this product (0.125 lb AI) per acre during a single application.
- **DO NOT** apply more than 8 oz of this product (0.25 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** apply sooner than the Retreatment interval of 14 days.

[FOR DISTRIBUTION AND USE ONLY WHERE THIRD PARTY INDEMNIFICATION IS IN EFFECT]

#### ROW MIDDLES

#### RESTRICTIONS AND LIMITATIONS

- **DO NOT** use with an adjuvant.
- Grow plants on raised plastic mulched beds that are higher than the treated row middle.
- Spray must be directed to the row middle, away from the crop bed and with minimal contact with plastic, including the sides of the bed. If top of mulch beds (where plants are to be transplanted) is contacted, severe injury can occur due to foliage contact with treated plastic. In this scenario, a rainfall event of 1/2 inch (natural or irrigation) must occur prior to transplanting to reduce residues of this product.
- Drift of treated soil particles onto plants may cause contact injury.
- Irrigate treated field after application and prior to transplanting with minimum of 1/4 inch of water if rainfall does not occur between application and transplanting.
- All applications must be made with hooded or shielded equipment.

#### **TIMING TO CUCURBIT VEGETABLES**

Apply this product at 4 oz (0.125 lb AI) per acre as a hooded or shielded application to row middles up to 14 days prior to transplanting or seeding for preemergence control of the weeds listed in Table - **Weeds Controlled by Residual Activity of This Product**, as well as to assist in the postemergence control of emerged weeds. A second application of this product at 4 oz (0.125 lb AI) per acre may be applied up to 21 days after transplanting or emergence if needed. **DO NOT** apply during or after bloom.

#### **TIMING TO WEEDS**

This product may be used for residual weed control, as well as to assist in postemergence burndown of many annual and perennial weeds in row middles. A registered preemergence grass herbicide may be added for control of additional grassy weeds. For assisting in the control of emerged weeds, tank mix this product with paraquat, Aim™ or other registered burndown herbicide. **DO NOT** tank mix with glyphosate after transplanting. Refer to tank mix partner's label for specified rate and application parameters.

#### **FALLOWBED USE ON TRANSPLANTED MELON BEDS** [including muskmelon (includes cantaloupe); watermelon] [For Use in the States of Arizona, California and Hawaii Only]

TUSCANY SC HERBICIDE RATES	ADJUVANT	GPA	TRANSPLANTING INTERVAL
4 oz/A (0.125 lb AI)	Required by burndown tank mix partner	Ground — 20 to 40	2 Months

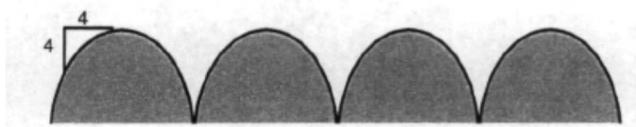
**Application Method:** Apply with a burndown herbicide labeled for the control of emerged weeds. When using this product alone satisfactory control of emerged weeds will not be attained.

#### **USE RESTRICTIONS FOR PREEMERGENCE FALLOWBED WEED CONTROL PRIOR TO TRANSPLANTING**

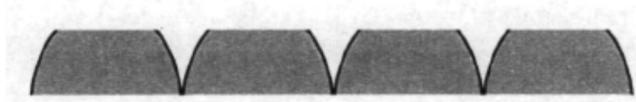
- **DO NOT** apply more than 4 oz of this product (0.125 lb AI) per acre during a single application.
- **DO NOT** apply more than 4 oz of this product (0.125 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.
- Always read and follow all label directions when using any pesticide alone or in tank mix combinations.
- The top 4 inches of the bed, from a horizontal and vertical perspective, where the crop will be transplanted, must be removed prior to transplanting.
- Use only healthy transplants.
- **DO NOT** use on direct seeded crops.
- This use pattern makes no claim for in-season weed control after the beds have been disturbed.
- **DO NOT** apply when weather conditions favor spray drift.
- **DO NOT** apply sooner than the Retreatment interval of 14 days.

#### **PRECAUTIONS:**

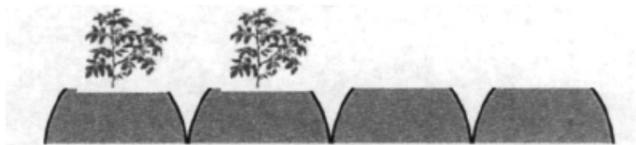
- Many weather related factors, including high wind or heavy rains or cool conditions at or near crop transplanting, may result in crop injury in fields treated with this product. On occasion this has resulted in a delay in maturity. User must assume these risks before using this product.



Beds are formed and this product is applied with a burndown herbicide.



A minimum of 2 months after application of this product, the tops of the beds are removed and the soil from the tops of the beds is placed in the area between the beds.



Crops are transplanted into beds.

## DIRECTIONS FOR USE IN DRY BEANS

Dried cultivars of bean (*Lupinus*); bean (*Phaseolus*) (includes field bean, kidney bean, lima bean (dry), navy bean, pinto bean, tepary bean); bean (*Vigna*) (includes adzuki bean, blackeyed pea, catjang, cowpea, crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean); broad bean (dry); chickpea; guar; lablab bean and lentil

### WEED SUPPRESSION [Weed Suppression section not to be shown on production label]

#### RESTRICTIONS AND LIMITATIONS

- **DO NOT** apply more than 2 oz of this product (0.063 lb AI) per acre during a single application.
- **DO NOT** apply more than 2 oz of this product (0.063 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** apply sooner than the Retreatment interval of 14 days.

**[Arizona, California, Colorado, Hawaii, Idaho, Montana, Nebraska, Oregon and Washington only:** For weed suppression in dry beans see **DIRECTIONS FOR USE FOR WEED SUPPRESSION IN DRY BEANS** use instructions.]

**[Arizona, California, Hawaii, Idaho, Montana, Oregon and Washington only:** For weed suppression in garbanzo beans see **DIRECTIONS FOR USE FOR CHICKPEA (GARBANZO BEAN)** use instructions.]

**Many weather related factors, including high wind, splashing or heavy rains or cool conditions at or near crop emergence, may result in dry bean injury in fields treated with this product. On occasion this has resulted in a delay in maturity. User must assume these risks before using this product.**

#### TIMING TO DRY BEAN

This product may be applied to dry beans within 2 days after planting for the preemergence suppression of the weeds listed in Table - **Broadleaf Weeds Controlled by Residual Activity of This Product** or Table - **Weeds Suppressed by Residual Activity of This Product**. Tank mix this product with other labeled herbicides for broad spectrum weed control.

#### TIMING TO WEEDS

This product may be applied to dry beans prior to planting or preemergence (after planting). Preemergence application of this product must be made within 2 days after planting and prior to dry bean emergence. Application after the dry beans have begun to crack, or are emerged, will result in severe crop injury. To avoid severe crop injury, **DO NOT** apply to dry beans after beans begin to crack or have emerged.

Preplant incorporation (PPI) applications may result in reduced weed control.

#### ADDITIONAL RESIDUAL GRASS CONTROL<sup>[1]</sup>

This product can be tank mixed with pendimethalin for additional grass control.

<sup>[1]</sup> Not for use in California.]

## **HARVEST AID**

### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply more than 3 oz of this product (0.094 lbs Al) per acre during a single application.
- **DO NOT** apply more than 3 oz of this product (0.094 lbs Al) per acre per year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** harvest within 5 days of application.
- **DO NOT** apply sooner than the Retreatment interval of 14 days.

Desiccation from this product requires the addition of an agronomically approved adjuvant to the spray mixture. Use a methylated seed oil which contains at least 15% emulsifiers and 80% oil at 2% v/v. A spray grade nitrogen source (either ammonium sulfate at 2 to 2.5 lbs per acre or a 28 to 32% nitrogen solution at 1 to 2 quarts per acre) may be added to the spray mixture along with either a crop oil concentrate or methylated seed oil to enhance desiccation. The addition of a nitrogen source does not replace the need for a crop oil concentrate or a methylated seed oil. Tank mixing this product with glyphosate or paraquat will increase control of emerged weeds and aid in harvest. Add a burndown tank mix partner for the control of emerged weeds labeled for dry bean in accordance with the most restrictive labeled limitations and precautions.

### **TIMING TO DRY BEANS**

Apply when crop is mature and at least 80% of the pods are yellowing and mostly ripe with no more than 40% (bush type beans) or 30% (vine type beans) of the leaves still green in color. Dry beans can be harvested 5 days after application. To ensure thorough coverage use 15 to 30 gallons spray solution per acre. Nozzle selection must meet manufacturer's gallonage and pressure specifications for postemergence application.

### **DIRECTIONS FOR USE FOR WEED SUPPRESSION IN DRY BEANS<sup>[1]</sup>**

**[For Use Only in Arizona, California, Colorado, Hawaii, Idaho, Montana, Nebraska, Oregon and Washington]**

<sup>[1]</sup> Not for use in California.]

Dried cultivars of bean (*Lupinus*); bean (*Phaseolus*) (includes field bean, kidney bean, lima bean (dry), navy bean, pinto bean, tepary bean); bean (*Vigna*) (includes adzuki bean, blackeyed pea, catjang, cowpea, crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean); broad bean (dry); chickpea; guar; lablab bean and lentil

### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply more than 1.5 oz of this product (0.047 lbs Al) per acre during a single application.
- **DO NOT** apply more than 1.5 oz of this product (0.047 lbs Al) per acre per year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** apply sooner than the Retreatment interval of 14 days.

Many weather related factors, including high wind, splashing or heavy rains or cool conditions at or near crop emergence, may result in dry bean injury in fields treated with this product. On occasion this has resulted in a delay in maturity. User must assume these risks before using this product.

### **TIMING TO DRY BEAN**

This product may be applied to dry beans within 2 days after planting for the preemergence suppression of the weeds listed in Table - **Weeds Suppressed by Residual Activity of This Product at 1.5 Oz per Acre** (0.079 lbs Al). Tank mix this product with other labeled herbicides for broad spectrum weed control.

### **TIMING TO WEEDS**

This product may be applied to dry beans prior to planting or preemergence (after planting). Preemergence application of this product must be made within 2 days after planting and prior to dry bean emergence. To avoid severe crop injury, **DO NOT** apply to dry beans after beans begin to crack or have emerged.

Preplant incorporation (PPI) applications may result in reduced weed control.

### **ADDITIONAL RESIDUAL GRASS CONTROL**

This product can be tank mixed with pendimethalin for additional grass control.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

When this product is applied according to label use directions, will suppress the weeds listed in Table - **Weeds Suppressed by Residual Activity of This Product at 1.5 Oz (0.047 lb. Al) per Acre**. This label makes no claims concerning other weed species.

**Table - Broadleaf Weeds Controlled by Residual Activity of This Product at 1.5 Oz (0.047 lb. Al) per Acre**

<b>BROADLEAF WEED SPECIES</b>		<b>ORGANIC MATTER</b>	<b>PANTHER HERBICIDE RATE</b>
<b>SECTION A</b>	<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>	
Nightshades,	Lambsquarters, Common	<i>Chenopodium album</i>	Up to 5% 1.5 oz/A (0.047 lb. Al)
	Mustard, Wild	<i>Brassica kaber</i>	
	Black	<i>Solanum nigrum</i>	
	Eastern Black	<i>Solanum ptycanthum</i>	
	Hairy	<i>Solanum sarrachoides</i>	
	Palmer Amaranth	<i>Amaranthus palmeri</i>	
	Pigweeds,		
	Redroot	<i>Amaranthus retroflexus</i>	
	Smooth	<i>Amaranthus hybridus</i>	
	Spiny Amaranth	<i>Amaranthus spinosus</i>	
	Tumble	<i>Amaranthus albus</i>	
	Prickly Lettuce (China Lettuce)	<i>Lactuca serriola</i>	
	Prickly Sida (Teaweed)	<i>Sida spinosa</i>	
	Radish, Wild	<i>Tribulus terrestris</i>	

### **DIRECTIONS FOR USE IN FIELD CORN**

**[For Use in the States of Arizona, California and Hawaii Only]**

#### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply more than 3 oz of this product (0.094 lb Al) per acre during a single application.
- **DO NOT** apply more than [2 oz] [3 oz] of this product [(0.063 lb Al)] [(0.094 lb Al)] per acre per year.
- **DO NOT** make more than 4 applications per year.
- Use only on no-till or minimum tillage fields where last year's crop residue has not been incorporated into the soil.
- Corn must be planted between 14 and 30 days after application unless the application is made as part of a Fall burndown program.
- Corn can be planted 7 days after an application of 2 oz [(0.063 lb Al) per acre if a minimum of 25% of the soil surface is covered with the residue of the preceding crop and a minimum of 1/4 inch of rainfall has occurred between application and planting.
- **DO NOT** irrigate between emergence and 2-leaf corn
- **DO NOT** use on popcorn, sweet corn or corn grown for seed.
- **DO NOT** apply sooner than the Retreatment interval of 14 days.

#### **TIMING TO FIELD CORN**

- Apply this product, at 2 to 3 oz (0.063-0.092 lb Al) per acre, between 7 and 30 days prior to planting field corn, for the preemergence control of the weeds listed in Table - **Broadleaf Weeds Controlled by Residual Activity of This Product**.
- Apply this product at 2 oz (0.063 lb Al) per acre between 7 and 30 days prior to planting field corn if a minimum of 25% of the soil surface is covered with the residue of the preceding crop and a minimum of 1/4 inch of rainfall has occurred between application and planting.
- Apply this product at 3 oz (0.094 lb Al) per acre between 14 and 30 days prior to planting field corn.

#### **Burndown Use Directions - For Preplant Applications in Field Corn**

This product, applied as part of a burndown program, may be used for residual weed control, as well as to assist in postemergence burndown of many weeds where field corn will be planted directly into the residue of the previous year. See Directions for Use in Fall and Spring Preplant Burndown and Fallow Seedbed Programs in Field Corn, Peanut and Soybean for rates and timing of applications. For control of emerged weeds, this product must be applied with an appropriate burndown tank mix partner listed in Table - **Tank Mix Partners for Burndown and/or Residual Control of Weeds in Field Corn**. To ensure thorough coverage, use a minimum of 15 gallons of spray solution per acre. Refer to tank mix partner's label for specified application pressure and adjuvant systems.

#### **INCREASING SPEED OF GLYPHOSATE BURNDOWN ACTIVITY**

This product, at 1 ounce per acre, may be tank mixed with glyphosate to increase the speed of burndown activity compared to glyphosate applied alone. Residual weed control will not be provided at rates lower than 2 oz per acre; however, suppression of the weeds in Table - **Weeds Suppressed by Residual Activity of This Product** may occur at rates of this product as low as 1 ounce per acre. Applications of this product at 1 ounce per acre must be made a minimum of 14 days prior to planting field corn.

#### **TANK MIXES**

This product may be tank mixed with the herbicides listed in Table - **Tank Mix Partners for Burndown and/or Residual Control of Weeds in Field Corn** for pre-plant burndown applications. Refer to tank mix partner's label for adjuvant directions.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

**Table - Tank Mix Partners for Burndown and/or Residual Control of Weeds in Field Corn**

<b>TANK MIX PARTNERS<sup>1</sup></b>	
2,4-D LVE	Metribuzin
Atrazine	Paraquat
Dicamba/ 2,4-D	Flumetsulam
Dicamba	Rimsulfuron/Thisulfuron
Tribenuron methyl	Simazine
Glyphosate	Tribenuron
Flumetsulam/Clopyralid	

<sup>1</sup> Refer to tank mix product labels for specific directions.

#### **TANK MIX RESTRICTIONS**

Tank mixes with flufenacet (Axiom or Domain), metolachlor or s-metolachlor (Dual Magnum or Dual II Magnum), dimethenamid or dimethenamid-p (Frontier or Outlook), alachlor (Lasso), or acetochlor (Surpass or Harness) may result in injury to field corn when application is followed by prolonged periods of cool wet weather. **DO NOT** use them with this product unless significant injury is acceptable, or, unless supplemental labeling, provided by Nufarm, is followed.

#### **DIRECTIONS FOR USE IN FIELD PEAS**

**[For use in Idaho, Montana, Oregon and Washington only.]**

#### **WEED CONTROL**

##### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply more than 2 oz of this product (0.063 lb AI) per acre during a single application.
- **DO NOT** apply more than 2 oz of this product (0.063 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** apply sooner than the Retreatment interval of 14 days

Many weather related factors, including high wind, splashing or heavy rains or cool conditions at or near crop emergence, may result in pea injury in fields treated with this product. On occasion this has resulted in a delay in maturity. Assume these risks before using this product.

#### **TIMING TO FIELD PEAS**

This product may be applied to field peas within 2 days after planting for the preemergence control of the weeds listed in Table - **Broadleaf Weeds Controlled by Residual Activity of This Product** or Table - **Weeds Suppressed by Residual Activity of This Product**. Tank mix this product with other labeled herbicides for broadspectrum weed control.

#### **TIMING TO WEEDS**

This product may be applied to field peas prior to planting or preemergence (after planting). Preemergence application of this product must be made within 2 days after planting and prior to field pea emergence. To avoid severe crop injury, **DO NOT** apply to field peas after peas begin to crack or have emerged. Preplant incorporation (PPI) applications may result in reduced weed control.

#### **ADDITIONAL RESIDUAL GRASS CONTROL**

This product can be tank mixed with pendimethalin for additional grass control.

#### **HARVEST AID**

##### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply more than 3 oz of this product (0.094 lb AI) per acre during a single application.
- **DO NOT** apply more than 3 oz of this product (0.094 lb AI) per acre per year.
- **DO NOT** harvest within 5 days of application.
- **DO NOT** apply sooner than the Retreatment interval of 14 days

Desiccation from this product requires the addition of an agronomically approved adjuvant to the spray mixture. Use a methylated seed oil which contains at least 15% emulsifiers and 80% oil at 1 quart per acre. A spray grade nitrogen source (either ammonium sulfate at 2 to 2.5 lbs per acre or a 28 to 32% nitrogen solution at 1 to 2 quarts per acre) may be added to the spray mixture along with methylated seed oil to enhance desiccation. The addition of a nitrogen source does not replace the need for methylated seed oil. Tank mixing this product with glyphosate will increase control of emerged weeds and aid in harvest.

## **TIMING TO FIELD PEAS**

Apply this product, at 1.5 to 2 oz (0.023-0.063 lb AI) per acre, when crop is physiologically mature and a minimum of 80% of the pods are yellow to tan in color and 20% are yellow in color. If field peas are treated too early, a reduction in seed quality may occur. **DO NOT** spray this product on any area of the field with a significant amount of plants with green color. Peas can be harvested 5 days after application.

To ensure thorough coverage, use 15 to 30 gallons of spray solution per acre and select nozzle type using manufacturer's gallonage and pressure specification for postemergence application.

## **DIRECTIONS FOR USE IN FLAX[\*]**

[\* - Not for Use in California]

### **HARVEST AID**

#### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply more than 3 oz of this product (0.094 lb AI) per acre during a single application.
- **DO NOT** apply more than 3 oz of this product (0.094 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** harvest within 5 days of application.
- Retreatment interval is 14 days.

Desiccation from this product requires the addition of an agronomically approved adjuvant to the spray mixture. Use a methylated seed oil which contains at least 15% emulsifiers and 80% oil at 1 quart per acre. A spray grade nitrogen source (either ammonium sulfate at 2 to 2.5 lbs per acre a 28 to 32% nitrogen solution at 1 to 2 quarts per acre) may be added to the spray mixture along with methylated seed oil to enhance desiccation. The addition of a nitrogen source does not replace the need for methylated seed oil.

## **TIMING TO FLAX**

Apply this product, at 1.5 to 2 oz (0.016-0.063 lb AI) per acre, when crop is physiologically mature and at least 75% of the bolls are brown in color. Flax can be harvested 5 days after application. To ensure thorough coverage, use 15 to 30 gallons of spray solution per acre and select nozzle type using manufacturer's gallonage and pressure specifications for postemergence application.

## **DIRECTIONS FOR USE IN FRUITING VEGETABLES[<sup>1</sup>]**

[<sup>1</sup> - Not for use in California.]

#### **Fruiting Vegetable Crop Group 8-10 Includes:**

African eggplant; Bush Tomato; Bell Pepper; Cocona; Currant Tomato; Eggplant, Garden Huckleberry; Goji Berry; Groundcherry, Martynia; Naranjilla; Okra, Pea Eggplant; Pepino; Nonbell Pepper; Roselle; Scarlet Eggplant; Sunberry; Tomatillo; Tomato; Tree Tomato; cultivars, varieties and/or hybrids of these.

Many weather related factors, including high wind or heavy rains or cool conditions at or near crop transplanting, may result in crop injury in fields treated with this product. On occasion this has resulted in a delay in maturity. User must assume these risks before using this product.

#### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply more than 4 oz of this product (0.125 lb AI) per acre during a single application.
- **DO NOT** apply more than 8 oz of this product (0.25 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** apply sooner than the Retreatment interval of 14 days

## **ROW MIDDLES**

**[FOR DISTRIBUTION AND USE ONLY WHERE THIRD PARTY INDEMNIFICATION IS IN EFFECT]**

### **PRECAUTIONS**

- Grow plants on raised or plastic mulched beds that are higher than the treated row middle.
- Spray must be directed to the row middle, away from the crop bed and with minimal contact with plastic, including the sides of the bed. If top of mulch beds (where plants are to be transplanted) is contacted, severe injury can occur due to foliage contact with treated plastic. In this scenario, a rainfall event of 1/2 inch (natural or irrigation) must occur prior to transplanting to reduce residues of this product.
- Injury can occur if soil particles treated with this product contact the crop.
- Irrigate treated field after application and prior to transplanting with minimum of 1/4 inch of water if rainfall does not occur between application and transplanting.
- All applications must be made with hooded or shielded equipment.

## **TIMING TO FRUITING VEGETABLES**

Apply this product at 4 oz per acre as a hooded or shielded application to row middles up to 14 days prior to transplanting or seeding for preemergence control of the weeds listed in Table - **Broadleaf Weeds Controlled by Residual Activity of This Product**, as well as to assist in the postemergence control of emerged weeds. A second application of this product at 4 oz per acre may be applied up to 21 days after transplanting or emergence if needed. **DO NOT** apply during or after bloom.

## TIMING TO WEEDS

This product may be used for residual weed control, as well as to assist in postemergence burndown of many annual and perennial weeds in row middles. A registered preemergence grass herbicide may be added for control of additional grassy weeds. For assisting in the control of emerged weeds, tank mix this product with paraquat, Aim™ or other registered burndown herbicide. **DO NOT** tank mix with glyphosate after transplanting or crop emergence. Refer to tank mix partner's label for specified rate and application parameters.

## FALLOWBED USE ON TRANSPLANTED PEPPER AND TOMATO BEDS

[For use in Arizona, California and Hawaii only]

PANTHER HERBICIDE RATES	ADJUVANT	GPA	TRANSPLANTING INTERVAL
4 oz/A (0.125 lb Al)	Required by burndown tank mix partner	Ground – 20 to 40	2 Months

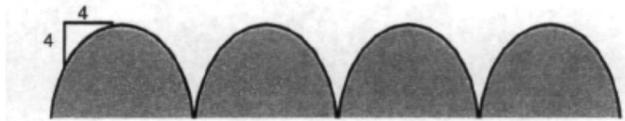
**Application Method:** Apply with a burndown herbicide labeled for the control of emerged weeds.  
When this product is used alone it will not provide satisfactory control of emerged weeds.

## USE RESTRICTIONS FOR PREEMERGENCE FALLOWBED WEED CONTROL PRIOR TO TRANSPLANTING

- **DO NOT** apply more than 4 oz of this product (0.125 lb Al) per acre during a single application.
- **DO NOT** apply more than 4 oz of this product (0.125 lb Al) per acre per year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** apply sooner than the Retreatment interval of 14 days
- Always read and follow all label directions when using any pesticide alone or in tank mix combinations.
- Irrigate treated field after application and prior to transplanting with minimum of 1/4 inch of water if rainfall does not occur between application and transplanting.
- The top 4 inches of the bed, from a horizontal and vertical perspective, where the crop will be transplanted, must be removed prior to transplanting.
- Use only healthy transplants. **DO NOT** use on direct seeded crops.
- [On flat beds (tomato only), the soil must be incorporated to a depth of at least 4 inches, twice, prior to transplanting. Failure to incorporate may result in stand reduction and/or crop injury.]
- This use pattern makes no claim for in-season weed control after the beds have been disturbed.
- **DO NOT** apply when weather conditions favor spray drift.

## PRECAUTIONS:

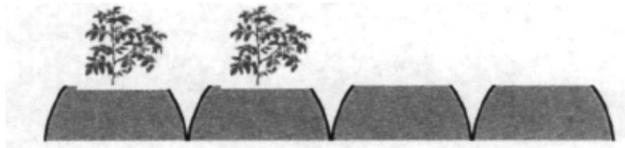
- Many weather related factors, including high wind or heavy rains or cool conditions at or near crop transplanting, may result in crop injury in fields treated with this product. On occasion this has resulted in a delay in maturity. User must assume these risks before using this product.



Beds are formed and this product is applied with a burndown herbicide.



A minimum of 2 months after application of this product, the tops of the beds are removed and the soil from the tops of the beds is placed in the area between the beds.



Crops are transplanted into beds.

## DIRECTIONS FOR USE IN GARLIC

### RESTRICTIONS AND LIMITATIONS

- **DO NOT** apply more than 6 oz of this product (0.188 lb Al) per acre during a single application.
- **DO NOT** apply more than 6 oz of this product (0.188 lb Al) per year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** apply sooner than the Retreatment interval of 14 days

#### **TIMING TO GARLIC**

This product may be applied, at 6 oz per acre, to garlic prior to garlic emergence. Apply within 3 days after planting garlic.

#### **TIMING TO WEEDS**

##### **Preemergence - Preemergence To Weeds**

Apply this product to weed free garlic for preemergence control of the weeds listed in Table - **Weeds Controlled by Preemergence Application of This Product**.

#### **DIRECTIONS FOR USE IN HOPS[\*]**

[\* - Not for Use in California or New York]

##### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply more than 6 oz of this product (0.188 lb AI) per acre during a single application.
- **DO NOT** apply more than 6 oz of this product (0.188 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** allow spray to contact green stem (Unless used for sucker control), foliage, flowers or cones or unacceptable injury may occur.
- **DO NOT** apply within 30 days of harvest.
- **DO NOT** use with an adjuvant.
- **DO NOT** apply sooner than the Retreatment interval of 14 days

This product can be used in hops for preemergence weed control as well as sucker control.

#### **TIMING TO HOPS FOR SUCKER CONTROL**

Apply this product at 6 oz (0.188 lb AI) per acre as a directed application after hops have reached a minimum of 6 feet in height for sucker control. Apply to the lower 2 feet of the hops.

#### **TIMING TO HOPS FOR PREEMERGENCE WEED CONTROL**

Apply this product at 6 oz (0.188 lb AI) per acre as a 1 to 1.5 foot band to each side of the hop row, to dormant hops November thru February to ensure time for rain incorporation and activation. If weeds are emerged at the time of application, tank mix this product with a labeled burndown herbicide including paraquat or glyphosate to assist with control of emerged weeds. **DO NOT** mow or rake over treated areas, as dust created by mowing may drift onto sensitive crops or vegetation resulting in injury.

#### **TIMING TO WEEDS**

Applications of this product must be made prior to weed emergence for control of weeds listed in Table - **Weeds Controlled by Preemergence Application of This Product**.

**This product, when applied according to label use directions, will control the weeds listed in Table - Weeds Controlled by Preemergence Application of This Product. This label makes no claims concerning control of other weed species.**

**It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.**

#### **DIRECTIONS FOR USE IN LENTILS[\*]**

[\* Not for Use in California]

##### **HARVEST AID**

##### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply more than 3 oz of this product (0.094 lb AI) per acre during a single application.
- **DO NOT** apply more than 3 oz of this product (0.094 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** harvest within 5 days of application.
- **DO NOT** apply sooner than the Retreatment interval of 14 days

Desiccation from this product requires the addition of an agronomically approved adjuvant to the spray mixture. Use a methylated seed oil which contains at least 15% emulsifiers and 80% oil at 1 quart per acre. A spray grade nitrogen source (either ammonium sulfate at 2 to 2.5 lbs per acre or a 28 to 32% nitrogen solution at 1 to 2 quarts per acre) may be added to the spray mixture along with methylated seed oil to enhance desiccation. The addition of a nitrogen source does not replace the need for methylated seed oil. Tank mixing this product with glyphosate or paraquat will increase control of emerged weeds and aid in harvest.

## **TIMING TO LENTILS**

Apply this product, at 1.5 to 2 oz (0.048-0.063) per acre, when crop is physiologically mature and a minimum of 80% of the pods are yellow to tan in color and 20% are yellow in color. If lentils are treated too early, a reduction in seed quality may occur. **DO NOT** spray this product on any area of the field with a significant amount of plants with green color. Lentils can be harvested 5 days after application.

To ensure thorough coverage, use 15 to 30 gallons of spray solution per acre and select nozzle type using manufacturer's gallonage and pressure specifications for postemergence application.

## **DIRECTIONS FOR USE IN MINT (Peppermint and Spearmint)**

### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply more than 4 oz of this product (0.125 lb AI) per acre during a single application.
- **DO NOT** apply more than 8 oz of this product (0.25 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** make a sequential application of this product within 60 days of the first application of this product.
- Apply only to dormant mint. Application to non-dormant mint may result in unacceptable crop injury.
- **DO NOT** apply within 80 days of harvest.
- **DO NOT** apply sooner than the Retreatment interval of 14 days

### **PRECAUTIONS**

#### **To avoid crop injury**

- **DO NOT** apply to stands established longer than 3 years.
- **DO NOT** apply a Fall application if roots and rhizomes are weak, thin or damaged.
- **DO NOT** apply this product on mint in Southern Union County (south of Ladd Canyon) or Baker County in Oregon.
- **DO NOT** apply to row or baby mint, use only on established meadow mint.
- **DO NOT** apply to mint that has been weakened by diseases, insects (example mint root borer), nematodes, drought, soil salts, high soil pH, previous pesticides, winter injury or double cutting, as severe injury may occur. Apply only to healthy vigorous mint with undamaged rhizomes.
- **DO NOT** apply before November 25 or after March 1.

**Many weather related factors, including high wind, splashing or heavy rains or cool conditions at or near mint emergence, may result in mint injury in fields treated with this product. User assume these risks before using this product.**

Tank mixes with labeled rates of paraquat are directed to control emerged weeds and increase crop safety

## **TIMING TO MINT**

As a spray, this product may be applied only to established, dormant mint for preemergence control of the weeds listed in Table - **Weeds Controlled by Residual Activity of This Product**, as well as to assist in the postemergence control of emerged weeds. Application to non-dormant mint or to baby (row) mint (time from planting of mint roots through the first cutting), may result in unacceptable crop injury. As a bulk fertilizer application, this product may be applied at least 80 days prior to harvest. Leaves must be dry at the time of applications or severe injury may occur.

## **TIMING TO WEEDS**

### **Burndown - Dormant Mint, Postemergence To Weeds**

This product may be used for residual weed control, as well as to assist in postemergence burndown of many annual and perennial weeds where established mint is dormant. For control of emerged weeds, tank mix this product with paraquat. Refer to paraquat label for specified rate and application parameters. To ensure thorough coverage, use a minimum of 15 gallons of spray solution per acre. Tank mixes of this product applied to assist in the control of emerged weeds must be applied with a non-ionic surfactant at 0.25% v/v. A spray grade nitrogen source (either ammonium sulfate at 2 to 2.5 lb per acre, or 28 to 32% nitrogen solution at 1 to 2 quarts per acre) maybe added to increase herbicidal activity.

### **Preemergence - Dormant Mint, Preemergence To Weeds**

Apply this product to dormant mint for the preemergence control of weeds listed in Table - **Weeds Controlled by Residual Activity of This Product**. Fall applications of this product, followed by a sequential application in the Spring, have resulted in better Summer annual weed control than a single Fall or single Spring application.

Fall application is most effective for Fall germinating weeds for example, groundsel. Fields plowed or harrowed after an application of this product will result in less effective preemergence activity. In furrow irrigated fields, corrugating that is done after an application of this product will expose untreated soil and break the herbicide barrier resulting in poor weed control.

Table - Weeds Controlled by Residual Activity of This Product

BROADLEAF WEED SPECIES	SCIENTIFIC NAME	ORGANIC MATTER	SOIL TYPE	[PANTHER] HERBICIDE RATE
<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>			
Bristly Starbur	<i>Acanthospermum hispidum</i>	Up to 5%	All Soil Types	4 oz/A (0.125 lb AI)
Carpetweed	<i>Mollugo verticillata</i>			
Chickweeds,				
Common	<i>Stellaria media</i>			
Mouseear	<i>Cerastium vulgatum</i>			
Coffee Senna	<i>Cassia occidentalis</i>			
Copperleaf, Hophornbeam	<i>Acalypha ostryifolia</i>			
Dandelion	<i>Taraxacum officinale</i>			
Dodder (suppression only) <sup>1,[2]</sup>	<i>Cuscuta</i> spp.			
Eclipta	<i>Eclipta prostrata</i>			
Evening primrose, Cutleaf	<i>Oenothera laciniata</i>			
False Chamomile	<i>Tripleurospermum maritima</i>			
Fiddleneck, Coast <sup>[2]</sup>	<i>Amsinckia menziesii</i>			
Field Pennyress <sup>[2]</sup>	<i>Thlaspi arvense</i>			
Fleabane, Hairy <sup>[2]</sup>	<i>Conyza bonariensis</i>			
Flixweed	<i>Descurainia sophia</i>			
Florida Beggarweed	<i>Desmodium tortuosum</i>			
Florida Pusley	<i>Richardia scabra</i>			
Golden Crownbeard	<i>Verbesina encelioides</i>			
Groundsel, Common	<i>Senecio vulgaris</i>			
Hairy Indigo	<i>Indigofera hirsute</i>			
Hemp Sesbania	<i>Sesbania exaltata</i>			
Henbit	<i>Lamium amplexicaule</i>			
Jimsonweed	<i>Datura stramonium</i>			
Kochia	<i>Kochia scoparia</i>			
Lambsquarters, Common	<i>Chenopodium album</i>			
Little Mallow	<i>Malva parviflora</i>			
London Rocket	<i>Sisymbrium irio</i>			
Marestail/Horseweed	<i>Conyza canadensis</i>			
Mayweed/False Chamomile	<i>Matricaria maritima</i>			
Morning Glories,				
Entireleaf	<i>Ipomoea hederacea</i> var. <i>integriuscula</i>			
Ivyleaf	<i>Ipomoea hederacea</i>			
Red/Scarlet	<i>Ipomoea coccinea</i>			
Smallflower	<i>Jacquemontia tamnifolia</i>			
Tall	<i>Ipomoea purpurea</i>			
Mustard,				
Tansy	<i>Descurainia pinnata</i>			
Tumble	<i>Sisymbrium altissimum</i>			
Wild	<i>Brassica kaber</i>			
Nettle, Burning	<i>Urtica urens</i>			
Nightshades,				
Black	<i>Solanum nigrum</i>			
Eastern Black	<i>Solanum ptycanthum</i>			
Hairy	<i>Solanum sarachoides</i>			
Pigweeds,				
Palmer Amaranth	<i>Amaranthus palmeri</i>			
Redroot	<i>Amaranthus retroflexus</i>			
Smooth	<i>Amaranthus hybridus</i>			
Spiny Amaranth	<i>Amaranthus spinosus</i>			
Tumble	<i>Amaranthus albus</i>			
Prickly Lettuce (China Lettuce)	<i>Lactuca serriola</i>			
Prickly Sida (Teaweed)	<i>Sida spinosa</i>			
Puncturevine	<i>Tribulus terrestris</i>			

Purslane,				
Common	<i>Portulaca oleracea</i>			
Horse	<i>Trianthema portulacastrum</i>			
Radish, Wild	<i>Raphanus raphanistrum</i>			
Ragweed, Common	<i>Ambrosia artemisiifolia</i>			
Redmaids	<i>Calandrinia ciliata</i> var. <i>menziesii</i>			
Russian Thistle	<i>Salsola iberica</i>			
Shepherd's-purse	<i>Capsella bursa-pastoris</i>			
Smartweeds,				
Ladysthumb	<i>Polygonum persicaria</i>			
Pennsylvania	<i>Polygonum pensylvanicum</i>			
Smellmelon <sup>[2]</sup>	<i>Cucumis melo</i>			
Sowthistle, Prickly <sup>[2]</sup>	<i>Sonchus asper</i>			
Spotted Spurge	<i>Euphorbia maculata</i>			
Spurred Anoda	<i>Anoda cristata</i>			
Tropic Croton	<i>Croton glandulosus</i>			
Velvetleaf	<i>Abutilon theophrasti</i>			
Venice Mallow	<i>Hibiscus trionum</i>			
Waterhemp,				
Common	<i>Amaranthus rudis</i>			
Tall	<i>Amaranthus tuberculatus</i>			
White Cockle <sup>[2]</sup>	<i>Silene latifolia</i>			
Wild Poinsettia	<i>Euphorbia heterophylla</i>			
Wormwood, Biennial	<i>Artemisia biennis</i>			
Yellow Rocket	<i>Barbarea vulgaris</i>			
<b>GRASS WEED SPECIES</b>				
Barnyardgrass	<i>Echinochloa crus-galli</i>			
Bluegrass, Annual	<i>Poa annua</i>			
Crabgrass, Large	<i>Digitaria sanguinalis</i>			
Foxtail, Giant	<i>Setaria faberi</i>			
Goosegrass	<i>Eleusine indica</i>			
Lovegrass, California	<i>Eragrostis diffusa</i>			
Panicums,				
Fall	<i>Panicum dichotomiflorum</i>			
Texas	<i>Panicum texanum</i>			
Ryegrass, Italian	<i>Lolium multiflorum</i>			
Signalgrass, Broadleaf	<i>Bracharia platyphylla</i>			

<sup>1</sup>This product at 4 oz (0.125 lb AI) per acre will provide postemergence dodder suppression when applied in combination with Pursuit Herbicide or Raptor Herbicide at labeled rates. The use of Pursuit Herbicide and Raptor Herbicide require the use of a NIS, which will result in burn and stunting of alfalfa. Growers must expect and accept this prior to using this tank mix.

<sup>[2]</sup> Not for use in California.]

#### **DIRECTIONS FOR USE IN ONION (DRY BULB)** [For Use in the States of Michigan, New York North Dakota Only and Wisconsin Only]

[For chemigation applications on potato follow **CHEMIGATION – ONION (DRY BULB)** section below.]

#### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply more than 2 oz of this product (0.063 lb AI) per acre during a single application.
- **DO NOT** apply more than 3 oz of this product (0.094 lb AI) per acre per year.
- **DO NOT** make more than 6 applications per year.
- **DO NOT** apply sooner than the Retreatment interval of 14 days
- **DO NOT** apply more than 1 ounce of this product per year on soils that contain greater than 90% sand plus gravel
- **DO NOT** apply with any type of adjuvant.
- **DO NOT** apply within 45 days of harvest.

## **PRECAUTION**

- **DO NOT** apply as part of a tank mix, other than with Prowl® H2O (EPA Reg No. 241-418, pendimethalin), or unacceptable injury may result.
- **DO NOT** tank mix other formulations of pendimethalin with this product for use in onions.

**Use of this product may result in necrotic spotting of onion leaves that come in contact with the spray. User must assume this potential crop response before using this product.**

### **[Microrate Application]**

Sequential applications of this product may be applied to onions (dry bulb), between the 2-leaf and 6-leaf stage, at rates of 0.5 to 1 ounce (0.016-0.032) per acre, on a 7 day interval.]

### **TIMING TO ONIONS (Dry Bulb)**

Apply this product to transplanted onions (dry bulb) between the 2-leaf and 6-leaf stage and on direct seed onions (dry bulb) between the 3-leaf and 6-leaf stage.

### **TIMING TO WEEDS**

#### **Preemergence - Emerged Onions (dry bulb), Preemergence To Weeds**

Apply this product to weed free onions (dry bulb) for preemergence control of the weeds listed in Table - **Broadleaf Weeds Controlled by Residual Activity of This Product, Section A.**

### **[CHEMIGATION – ONION (DRY BULB)**

This product may be applied through sprinkler irrigation systems in onions (dry bulb). Follow all label instructions for these crops regarding rates, timing of application, special instructions and precautions.

Apply this product only through center pivot systems. End guns must be turned off due to uneven application. **DO NOT** apply this product through any other type of irrigation system.

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

The system must be properly calibrated (with water only) to ensure that the amount of this product applied corresponds to the specified rate.

Apply this product in 1/2 to 3/4 inches of water during the first sprinkler set. 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. Once chemigation has begun, the run must be completed to ensure no product is left in the system.

If you have any questions about calibration, contact your State Extension Service Specialist, equipment manufacturers or other experts.

#### **Special Precautions for Chemigation**

1. **DO NOT** connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
2. A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person, shall shut the system down and make necessary adjustments in the event the need arises.
3. The system must be free of leaks and clogged nozzles.
4. The pesticide must be supplied continuously for the duration of the aqueous application. An uneven application may cause injury to the crop or poor weed control.
5. Agitation must be maintained in the nurse tank.
6. The sprinkler chemigation 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 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, or in the case where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
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, for example a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with the 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.

#### **Chemigation Systems Connected to Public Water Systems**

1. Public water system means a system for the provision to the public of piped water for human consumption, if such a 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.
2. Chemigation systems connected to the public water system must contain a functional, reduced pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, discharge the water from the public water system into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

3. All chemigation systems connected to the public water system must also follow restrictions listed in the preceding section titled "**Special Precautions for Chemigation**".]

## **DIRECTIONS FOR USE IN PEANUT[\*]**

[\* - Not for Use in California]

### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply more than 3 oz of this product (0.094 lb AI) per acre per application..
- **DO NOT** apply more than 3 oz of this product (0.094 lb AI) per acre per year.
- Retreatment interval is immediate.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** irrigate when peanuts are cracking.
- **DO NOT** graze treated fields or feed treated hay to livestock.

### **PRECAUTION**

• [DO NOT apply more than 2 oz (0.063 lb AI) per acre in the states of North Carolina, Oklahoma or Virginia where climatic conditions may result in unacceptable injury to peanuts [or under conditions specified below under **PREEMERGENCE APPLICATION IN PEANUT**].

**Many weather related factors, including high wind, splashing or heavy rains or cool conditions at or near peanut emergence, may result in peanut injury in fields treated with this product. On occasion this has resulted in a delay in maturity or even a slight decrease in yield.**

### **WIND MANAGEMENT**

In areas where shallow cultivation is used between rows to reduce wind-borne sand damage to peanuts, weed control from this product may be reduced.

### **TIMING TO PEANUTS**

This product may be applied to peanuts prior to planting or preemergence (after planting). Preemergence applications of this product must be made within 2 days after planting and prior to peanut emergence. Application after the peanuts have begun to crack, or are emerged, will result in severe crop injury. DO NOT apply when peanuts have begun to crack. Select rate of this product from Table - Broadleaf Weeds Controlled by Residual Activity of This Product, according to anticipated weed spectrum.

### **TIMING TO WEEDS**

#### **Burndown - Preemergence to Peanuts, Postemergence to Weeds**

This product, applied as part of a burndown program, may be used for residual weed control, as well as to assist in postemergence burndown of many annual and perennial weeds where peanuts will be planted directly into a stale seedbed, cover crop or in previous crop residues. Apply this product before planting, during planting or after planting, but before the crop emerges. For control of emerged weeds, tank mix this product with glyphosate. Refer to glyphosate label for directed rate and application pressure. To ensure thorough coverage, use a minimum of 15 gallons of spray solution per acre. Tank mixes of this product applied to assist in the control of emerged weeds must be applied with an adjuvant, including a non-ionic surfactant at 0.25% v/v or a crop oil concentrate or a methylated seed oil at 1 to 2 pints per acre. A spray grade nitrogen source (either ammonium sulfate at 2 to 2.5 lbs per acre or 28 to 32% nitrogen solution at 1 to 2 quarts per acre) may be added to increase herbicidal activity. Preemergence (conventional tillage) applications of this product must be applied prior to weed emergence.

#### **[PREEMERGENCE APPLICATION IN PEANUT (North Carolina, Oklahoma and Virginia Only)]**

This product, at 3 oz (0.094 lb AI) per acre, can be applied within 2 days of planting to control common ragweed, tropic croton and entireleaf, ivyleaf and tall/scarlet morning glories.

Cool temperatures near emergence (2 consecutive nighttime lows in the 50's F) in combination with heavy rainfall may result in severe crop injury. Only use this product, at 3 oz (0.094 lb AI) per acre in these states when other alternatives are not available for adequate control of the weeds listed above and the user acknowledges the risks associated with this use rate under the adverse environmental conditions listed above.]

### **ADDITIONAL RESIDUAL GRASS CONTROL: SEQUENTIAL**

This product may be applied sequentially following a preplant incorporated application of trifluralin (states of New Mexico, Oklahoma and Texas only), metolachlor or pendimethalin.

### **ADDITIONAL RESIDUAL GRASS CONTROL: TANK MIXED**

This product can be tank mixed with alachlor, metolachlor for additional grass and broadleaf weed control. This product can also be tank mixed with pendimethalin in states where they are labeled, provided overhead irrigation guidelines on the pendimethalin labels are followed.

## **DIRECTIONS FOR USE IN POTATO**

**[Arizona, California, Colorado, Delaware, Florida, Hawaii, Idaho, Maryland, Minnesota, Montana, Nebraska, Nevada, New Jersey, New Mexico, North Carolina, North Dakota, Oregon, South Carolina, South Dakota, Texas, Utah, Virginia, Washington, Washington DC and Wyoming only.]**

[For chemigation applications on potato follow **CHEMIGATION – POTATO** section below.]

## RESTRICTIONS AND LIMITATIONS

- **DO NOT** apply more than 1.5 oz of this product (0.047 lb AI) per acre during a single application.
- **DO NOT** apply more than 1.5 oz of this product (0.047 lb AI) per acre per year.
- **DO NOT** apply more than 4 applications per year.
- **DO NOT** apply to Rill (Furrow) irrigated potatoes.
- **DO NOT** apply sooner than the Retreatment interval of 14 days.

**Many weather related factors, including high wind, splashing or heavy rains or cool conditions at or near potato emergence, may result in potato injury in fields treated with this product. On occasion this has resulted in a delay in maturity. User must assume these risks before using this product.**

## TIMING TO POTATOES

This product may be applied to potatoes after hilling for the preemergence suppression of the weeds listed in Table - **Weeds Suppressed by Residual Activity of This Product at 1.5 Oz (0.047 lb AI) per Acre**. Tank mix this product with other labeled herbicides for broad spectrum weed control. A minimum of 2 inches of settled soil must cover the vegetative portion of the potato plant at the time of application of this product. Application to potatoes with less than 2 inches of soil covering the vegetative portion of the potato may result in crop injury. In areas with historically higher amounts of rainfall during the time of preemergence herbicide applications, including the Red River Valley, Minnesota and North Dakota, the requirement for 2 inches of settled soil is critical to avoid crop injury. Mechanical incorporation of this product will result in decreased weed control. In areas with sprinkler irrigation, incorporate this product with 0.5 to 0.75 inches of irrigation, after application and before any sprouts are within 2 inches of the settled soil surface if a rainfall event has not yet occurred.

## TIMING TO WEEDS

### Preemergence - Soil Covered Potatoes, Preemergence to Weeds

Apply this product to soil covered potatoes for the preemergence suppression of the weeds listed in Table - **Weeds Suppressed by Residual Activity of This Product at 1.5 Oz (0.047 lb AI) per Acre**. Harrowing, cultivation or corrugating after this product application will reduce weed control.

## CHEMIGATION - POTATO

This product may be applied through sprinkler system in potatoes. Follow all label directions for crop regarding rates, timing of application, special instructions and precautions.

Apply this product only through center pivot systems. End guns must be turned off due to uneven application. **DO NOT** apply this product through any other type of irrigation system.

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

The system must be properly calibrated (with water only) to ensure that the amount of this product applied or responds to the specified rate.

Apply this product in 1/2 to 3/4 inches of water during the first sprinkler set. 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. Once chemigation has begun, the run must be completed to ensure no product is left in the system.

If you have any questions about calibration, contact your State Extension Service Specialist, equipment manufacturers or other experts.

## Special Precautions for Chemigation

1. **DO NOT** connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
2. A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person, shall shut the system down and make necessary adjustments in the event the need arises.
3. The system must be free of leaks and clogged nozzles.
4. The pesticide must be supplied continuously for the duration of the aqueous application. An uneven application may cause injury to the crop or poor weed control.
5. Agitation must be maintained in the nurse tank.
6. The sprinkler chemigation system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.
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 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, or in the case where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
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, for example a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with the 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.

### Chemigation Systems Connected to Public Water Systems

1. Public water system means a system for the provision to the public of piped water for human consumption, if such a 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.
2. Chemigation systems connected to the public water system must contain a functional, reduced pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, discharge the water from the public water system into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. All Chemigation systems connected to the public water system must also follow restrictions listed in the preceding section titled "**Special Precautions for Chemigation**".

**Table - Weeds Suppressed by Residual Activity of This Product at 1.5 Oz per Acre**

COMMON NAME	SCIENTIFIC NAME	ORGANIC MATTER	PANTHER HERBICIDE RATE
Lambsquarters, Common	<i>Chenopodium album</i>	Up to 5%	1.5 oz/A
Mustard, Wild	<i>Brassica kaber</i>		
Nightshades,			
Black	<i>Solanum nigrum</i>		
Eastern Black	<i>Solanum ptycanthum</i>		
Hairy	<i>Solanum sarachoides</i>		
Pigweeds,			
Palmer Amaranth	<i>Amaranthus palmeri</i>		
Redroot	<i>Amaranthus retroflexus</i>		
Smooth	<i>Amaranthus hybridus</i>		
Spiny Amaranth	<i>Amaranthus spinosus</i>		
Tumble	<i>Amaranthus albus</i>		
Prickly Lettuce (China Lettuce)	<i>Lactuca serriola</i>		
Prickly Sida (Teaweed)	<i>Sida spinosa</i>		
Radish, Wild	<i>Raphanus raphanistrum</i>		

### DIRECTIONS FOR USE IN SOYBEAN[\*]

[\* - Not for Use in California]

#### RESTRICTIONS AND LIMITATIONS

- DO NOT apply more than 3 oz of this product (0.094 lb AI) per acre during an application.
- DO NOT apply more than 3 oz of this product (0.094 lb AI) per acre per year.
- DO NOT make more than 4 applications per year.
- [DO NOT tank mix this product with flufenacet (Axiom®, Domain®), metolachlor (Dual® Magnum, Dual® II Magnum, Boundary®) or dimethenamid (Frontier® or Outlook®) within 14 days of planting soybeans, unless soybeans are planted under no-till or minimum tillage conditions on wheat stubble or no-till field corn stubble.]
- DO NOT irrigate when soybeans are cracking.
- DO NOT apply sooner than the Retreatment interval of 14 days.
- DO NOT graze treated fields or feed treated hay to livestock no sooner than 21 days after application.

#### TIMING TO SOYBEANS

This product may be applied to soybeans prior to planting or preemergence (after planting). Preemergence application of this product must be made within 3 days after planting and prior to soybean emergence. Application after the soybeans have begun to crack, or are emerged, will result in severe crop injury. DO NOT apply when soybeans have begun to crack. Select rate of this product from Table - Broadleaf Weeds Controlled by Residual Activity of This Product according to anticipated weed spectrum.

#### TIMING TO WEEDS

##### Burndown - Preemergence to Soybeans, Postemergence to Weeds

This product, applied as part of a burndown program, may be used for residual weed control, as well as to assist in postemergence burndown of many annual and perennial weeds where soybeans will be planted directly into a stale seedbed, cover crop or in previous crop residues. For control of emerged weeds, choose the most appropriate tank mix partner from Table - **Tank Mix Partners for Control of Emerged Weeds in Reduced Tillage Soybeans**. Apply this product with ground equipment before planting, during planting or within 3 days after planting, but before the crop emerges. To ensure thorough coverage, use a minimum of 15 gallons of spray solution per acre. Refer to tank mix partner's label for directed application pressure. All tank mixes of this product applied to assist in the control of emerged weeds must be applied with crop oil concentrate or methylated seed oil at 1 to 2 pints per acre or a non-ionic surfactant at 0.25% v/v.

#### INCREASING SPEED OF GLYPHOSATE BURNDOWN ACTIVITY

This product, at rates as low as 1 ounce per acre, may be tank mixed with glyphosate to increase the speed of burndown activity compared to glyphosate applied alone. Residual weed control will not be provided at rates lower than 2 oz per acre; however, suppression of the

weeds in Table - **Weeds Suppressed by Residual Activity of This Product**, may occur at rates of this product as low as 1 ounce per acre.

#### TANK MIXES

This product may be tank mixed with the herbicides listed in Table - **Tank Mix Partners for Control of Emerged Weeds in Reduced Tillage Soybeans** for increased burndown activity, additional residual broadleaf and/or additional grass control. Refer to tank mix partner's label for adjuvant directions.

**Table - Tank Mix Partners for Control of Emerged Weeds in Reduced Tillage Soybeans**

TANK MIX PARTNERS	TARGET WEEDS <sup>1</sup>
2,4-D LVE	Marestail Giant Ragweed Dandelion
paraquat	Annual Grasses Henbit
glyphosate	General Burndown
Clethodim	Annual Grasses
Imazaquin	Cocklebur Common Sunflower
Dicamba/ 2,4-D	Marestail Giant Ragweed Dandelion
Dicamba	Clovers

<sup>1</sup>Refer to tank mix product labels for specific directions for control of emerged weeds present.

#### ADDITIONAL RESIDUAL BROADLEAF CONTROL

This product can be tank mixed with Metribuzin, Cloransulam, Linuron, Imazethapyr, Pendimethalin, Flumetsulam, Imazaquin, for additional broadleaf control.

#### ADDITIONAL RESIDUAL GRASS CONTROL

This product can be tank mixed with pendimethalin or Command<sup>®</sup> for additional grass control. [In the states of **(Note to EPA Reviewer: specific states will be listed here)** this product can be tank mixed with micro-encapsulated acetochlor (WARRANT<sup>®</sup>) at 2 oz per acre.] Tank mixes with flufenacet (Axiom<sup>®</sup> or Domain<sup>®</sup>), metolachlor (Dual<sup>®</sup> products or Boundary<sup>®</sup>), dimethenamid (Frontier<sup>®</sup> or Outlook<sup>®</sup>) may result in severe injury to soybeans when application is followed by prolonged periods of cool wet weather.

#### ROUNDUP READY PROGRAM

This product may be applied as part of a burndown program or preemergence in conventional tillage programs, at 2 to 3 oz per acre to reduce early season weed competition from waterhemp, velvetleaf, nightshade and morning glories as well as other weeds listed in Tables 2 and 3 in Roundup Ready<sup>®</sup> programs. A sequential post emergence application of glyphosate will be required to control weeds not controlled by this product.

### DIRECTIONS FOR USE IN STRAWBERRY

#### RESTRICTIONS AND LIMITATIONS

- **DO NOT** apply more than 3 oz of this product (0.094 lb AI) per acre per application.
- **DO NOT** apply more than 3 oz of this product (0.094 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** apply sooner than the Retreatment interval of 14 days.

#### PRECAUTIONS

- This product, at 3 oz (0.094 lb AI) per acre, can be applied to the soil a minimum of 30 days prior to transplanting strawberries provided the strawberries will be transplanted through a plastic mulch.
- This product at 3 oz (0.094 lb AI) per acre can be applied to dormant (established or newly planted) strawberries for the preemergence control of the weeds listed in Table - **Broadleaf Weeds Controlled by Residual Activity of This Product**.
- This product, at 3 oz (0.094 lb AI) per acre, can be applied in strawberry row middles with a shielded or hooded sprayer for the preemergence control of the weeds listed in Table - **Broadleaf Weeds Controlled by Residual Activity of This Product**.

Application Method	Minimum Time from Application to Harvest (PHI)	Use Rate per Acre per Application (oz)	Use Rate Per Acre Per Year (oz)	Special Use Instructions
Pre-transplant	Not applicable	3 (0.094 lb AI)	3 (0.094 lb AI)	Apply a minimum of 30 days prior to transplanting and prior to plastic mulch being laid.  Apply as part of a tank mix to control emerged weeds.
Preemergence to dormant strawberries	Not applicable			Crop oil concentrate, at 1% v/v, or non-ionic surfactant, at 0.25% v/v, may be added to help control emerged broadleaf weeds.
Hooded or shielded sprayer application to row middles	<b>DO NOT</b> apply after fruit set			<b>Apply only to row middles - DO NOT apply over strawberries.</b> Apply prior to weed emergence. Crop spotting may occur if an adjuvant is added. <b>Application after fruit set may result in spotting of fruit.</b> <b>DO NOT</b> allow spray drift to come in contact with fruit or foliage

Table - Weeds Controlled by Preemergence Application of This Product

BROADLEAF WEED SPECIES				
COMMON NAME	SCIENTIFIC NAME	ORGANIC MATTER	SOIL TYPE	PANTHER HERBICIDE RATE
Bristly Starbur	<i>Acanthospermum hispidum</i>	Up to 10% <sup>1</sup>	All Soil Types <sup>2</sup>	Asparagus, Caneberries, Garlic, Hops <sup>[3]</sup> 6 oz/A (0.188 lb AI)
Carpetweed	<i>Mollugo verticillata</i>			Sugarcane <sup>[3]</sup> 6 to 8 oz/A (0.188- 0.251 lb AI)
Chickweeds,				
Common	<i>Stellaria media</i>			
Mouseear	<i>Cerastium vulgatum</i>			
Coffee Senna	<i>Cassia occidentalis</i>			
Dandelion	<i>Taraxacum officinale</i>			
Eclipta	<i>Eclipta prostrata</i>			
Evening primrose, Cutleaf	<i>Oenothera lacinata</i>			
False Chamomile	<i>Tripleurospermum maritima</i>			
Filaree,				
Redstem	<i>Erodium cicutarium</i>			
Whitestem	<i>Erodium moschatum</i>			
Fiddleneck, Coast <sup>[3]</sup>	<i>Amsinckia menziesii</i>			
Fleabane, Hairy <sup>[3]</sup>	<i>Conyza bonariensis</i>			
Field Pennycress <sup>[3]</sup>	<i>Thlaspi arvense</i>			
Florida Beggarweed	<i>Desmodium tortuosum</i>			
Florida Pusley	<i>Richardia scabra</i>			
Golden Crownbeard	<i>Verbesina encelioides</i>			
Groundsel, Common	<i>Senecio vulgaris</i>			
Hairy Indigo	<i>Indigofera hirsuta</i>			
Hemp Sesbania	<i>Sesbania exaltata</i>			
Henbit	<i>Lamium amplexicaule</i>			
Jimsonweed	<i>Datura stramonium</i>			
Kochia	<i>Kochia scoparia</i>			
Lambsquarters, Common	<i>Chenopodium album</i>			
Mallow,				
Common (Cheeseweed)	<i>Malva neglecta</i>			
Little	<i>Malva parviflora</i>			
Horseweed/Marestail	<i>Conyza canadensis</i>			
Mayweed/False Chamomile	<i>Matricaria maritima</i>			
Morning Glories,				
Entireleaf	<i>Ipomoea hederacea var.integriuscula</i>			

Ivyleaf	<i>Ipomoea hederacea</i>
Red/Scarlet	<i>Ipomoea coccinea</i>
Smallflower	<i>Jacquemontia tamnifolia</i>
Tall	<i>Ipomoea purpurea</i>
Mustards,	
London Rocket	<i>Sisymbrium irio</i>
Tansey	<i>Desrurainia pinnata</i>
Tumble	<i>Sisymbrium altissimum</i>
Wild	<i>Brassica kaber</i>
Nettle, Burning	<i>Urtica urens</i>
Nightshades,	
Black	<i>Solanum nigrum</i>
Eastern Black	<i>Solanum ptycanthum</i>
Hairy	<i>Solanum sarachoides</i>
Pigweeds,	
Palmer Amaranth	<i>Amaranthus palmeri</i>
Redroot	<i>Amaranthus retroflexus</i>
Smooth	<i>Amaranthus hybridus</i>
Spiny Amaranth	<i>Amaranthus spinosus</i>
Tumble	<i>Amaranthus albus</i>
Prickly Lettuce (China Lettuce)	<i>Lactuca serriola</i>
Prickly Sida (Teaweed)	<i>Sida spinosa</i>
Puncturevine	<i>Tribulus terrestris</i>
Purslane,	
Common	<i>Portulaca oleracea</i>
Horse	<i>Trianthema portulacastrum</i>
Radish, Wild	<i>Raphanus raphanistrum</i>
Ragweed, Common	<i>Ambrosia artemisiifolia</i>
Redmaids	<i>Calandrinia ciliata</i> var <i>menziessi</i> .
Redweed	<i>Melochia corchorifolia</i>
Shepherd's-purse	<i>Capsella bursa-pastoris</i>
Smellimelon <sup>[3]</sup>	<i>Cucumis melo</i>
Sowthistle, Annual <sup>[3]</sup>	<i>Sonchus oleraceus</i>
Spotted Spurge	<i>Euphorbia maculata</i>
Spurred Anoda	<i>Anoda cristata</i>
Thistle, Russian	<i>Salsola iberica</i>
Tropic Croton	<i>Croton glandulosus</i>
Venice Mallow	<i>Hibiscus trionum</i>
Waterhemp,	
Common	<i>Amaranthus rudis</i>
Tall	<i>Amaranthus tuberculatus</i>
Wild Poinsettia	<i>Euphorbia heterophylla</i>
White Cockle <sup>[3]</sup>	<i>Silene latifolia</i>
Wormwood, Biennial	<i>Artemisia biennis</i>
Yellow Rocket	<i>Barbarea vulgaris</i>
<b>GRASS WEED SPECIES</b>	
Barnyardgrass	<i>Echinochloa crus-galli</i>
Bluegrass, Annual	<i>Poa annua</i>
Crabgrass,	
Large	<i>Digitaria sanquinalis</i>
Smooth	<i>Digitaria ischaemum</i>
Foxtails,	
Bristly	<i>Setaria verticillata</i>
Giant	<i>Setaria faberii</i>
Green	<i>Setaria viridis</i>
Yellow	<i>Setaria glauca</i>
Goosegrass	<i>Eleusine indica</i>

Guineagrass	<i>Panicum maximum</i>		
Johnsongrass, Seedling	<i>Sorghum halepense</i>		
Lovegrass, California	<i>Eragrostis diffusa</i>		
Panicum,			
Fall	<i>Panicum dichotomiflorum</i>		
Texas	<i>Panicum texaum</i>		
Ryegrass, Italian	<i>Lolium multiflorum</i>		
Signalgrass, Broadleaf	<i>Bracharia platyphylla</i>		

<sup>1</sup>This product can be used on soils with greater than 10% organic matter; however, length of residual control may be shorter than on soils with lower organic matter content.

<sup>2</sup>Use a maximum rate of 6 oz (0.188 lb Al) per acre per application of this product on any soil that has a sand plus gravel content over 80% if bushes, trees or vines are under 3 years of age.

<sup>3</sup> Not for use in California.]

## DIRECTIONS FOR USE IN SUGARCANE[\*]

[\* - Not for Use in California]

### RESTRICTIONS AND LIMITATIONS

- DO NOT apply more than 8 oz of this product (0.25 lb Al) per acre per application.
- DO NOT apply more than 12 oz of this product (0.38 lb Al) per year.
- DO NOT apply sooner than the Retreatment interval of 14 days.
- DO NOT make more than 12 applications per year.
- DO NOT apply within 90 days of harvest.

### TIMING TO SUGARCANE

This product may be applied from 2 weeks prior to planting to before the sugarcane emerges, post directed or at layby. Select the proper rate of this product from Table - **Weeds Controlled by Preemergence Application of This Product** according to anticipated weed spectrum and soil organic matter content for preemergence applications. Select rate of this product from Table - **Broadleaf Weeds Controlled by Post-Directed or Layby Application of This Product in Sugarcane** according to emerged weed spectrum and weed heights for post-directed and layby applications.

### TIMING TO WEEDS

#### Burndown — Preemergence to Sugarcane, Postemergence to Weeds

This product may be used for preemergence control, and to assist in postemergence burndown, of many annual broadleaf weeds in sugarcane. For control of emerged weeds, choose the most appropriate tank mix partner from Table - **Tank Mixes with This Product for Post-Directed or Layby Use in Sugarcane**. Apply this product before the crop emerges. To ensure thorough coverage, use a minimum of 15 gallons of spray solution per acre. All tank mixes of this product applied to assist in the control of emerged weeds must be applied with crop oil concentrate or methylated seed oil at 1 quart per acre or a non-ionic surfactant at 0.25% v/v. Some tank mix products, including Roundup Original Max (glyphosate), may be formulated with a suitable adjuvant and DO NOT require additional adjuvant.

#### Preemergence — Preemergence to Sugarcane, Preemergence to Weeds

This product may be used for preemergence control of many annual broadleaf and grassy weeds in sugarcane. Select rate based on anticipated weed spectrum and soil organic matter content from Table - **Weeds Controlled by Preemergence Application of This Product**. Apply this product before the crop emerges.

#### Post-Directed — Postemergence to Sugarcane, Postemergence to Weeds

Only make post-directed applications to upright sugarcane varieties after the sugarcane has exceeded 24 inches in height and has begun to joint. DO NOT make post-directed applications to "PINEAPPLE" varieties. Post-directed applications to "PINEAPPLE" varieties or to upright varieties that have not exceeded 24 inches in height and have not begun to joint, may result in unacceptable crop injury. To ensure thorough coverage, use a minimum of 15 gallons of spray solution per acre. Post-directed applications of this product must include a crop oil concentrate or methylated seed oil at 1 quart per acre or a non-ionic surfactant at 0.25% v/v. Select the proper rate of this product based on weed spectrum and weed height from Table - **Broadleaf Weeds Controlled by Post-Directed or Layby Application of This Product**.

#### Layby — Postemergence to Sugarcane, Postemergence to Weeds

Layby applications can be made to upright and "PINEAPPLE" varieties after the sugarcane has exceeded 30 inches in height and the spray solution will not contact foliage above 6 inches from the base of the sugarcane. To ensure thorough coverage, use a minimum of 15 gallons of spray solution per acre. Layby applications of this product must be applied with crop oil concentrate or methylated seed oil at 1 quart per acre or a non-ionic surfactant at 0.25% v/v. Select the proper rate of this product based on weed spectrum and weed height from Table - **Broadleaf Weeds Controlled by Post-Directed or Layby Application of This Product**.

Table - Broadleaf Weeds Controlled by Post-Directed or Layby Application of This Product in Sugarcane

BROADLEAF WEED SPECIES		WEED HEIGHT (inches)	
COMMON NAME	SCIENTIFIC NAME	3 oz/A (0.095 lb AI)	4 oz/A (0.126 lb AI)
Bindweed, Field	<i>Convolvulus arvensis</i>	4	8
Carpetweed	<i>Mollugo verticillata</i>	4	4
Cocklebur, Common	<i>Xanthium strumarium</i>	4	4
Florida Beggarweed	<i>Desmodium tortuosum</i>	2	2
Hemp Sesbania	<i>Sesbania exaltata</i>	6	8
Jimsonweed	<i>Datura stramonium</i>	4	4
Lambsquarters, Common	<i>Chenopodium album</i>	4	4
Morning Glories,			
Entireleaf	<i>Ipomoea hederacea var. integriflora</i>	-	4
Ivyleaf	<i>Ipomoea hederacea</i>	4	4
Pitted	<i>Ipomoea lacunosa</i>	4	6
Red	<i>Ipomoea coccinea</i>	-	4
Tall	<i>Ipomoea purpurea</i>	2	4
Mustard, Wild	<i>Brassica kaber</i>	6	6
Pigweeds,			
Palmer Amaranth	<i>Amaranthus palmeri</i>	4	6
Redroot	<i>Amaranthus retroflexus</i>	4	6
Smooth	<i>Amaranthus hybridus</i>	4	6
Plantain, Broadleaf	<i>Plantago major</i>	6	6
Prickly Sida	<i>Sida spinosa</i>	4	6
Purslanes,			
Common	<i>Portulaca oleracea</i>	2	4
Rock	<i>Calandrinia spp.</i>	-	2
Ragweeds,			
Common	<i>Ambrosia artemisiifolia</i>	2	2
Giant	<i>Ambrosia trifida</i>	4	4
Rice Flatsedge	<i>Cyperus iria</i>	2	4
Sicklepod	<i>Senna obtusifolia</i>	4	4
Smartweeds,			
Ladysthumb	<i>Polygonum persicaria</i>	4	4
Pale	<i>Polygonum lapathifolium</i>	4	4
Pennsylvania	<i>Polygonum pensylvanicum</i>	4	4
Spotted Spurge	<i>Euphorbia maculata</i>	4	4
Velvetleaf	<i>Abutilon theophrasti</i>	4	6
Venice Mallow	<i>Hibiscus trionum</i>	2	2
Waterhemp,			
Common	<i>Amaranthus rudis</i>	2	2
Tall	<i>Amaranthus tuberculatus</i>	2	2

Tank mixes of this product will only control the above ground portion of field bindweed. Repeated applications will be needed to control regrowth.

#### TANK MIXES

This product may be tank mixed with the herbicides listed in Table **Tank Mixes with This Product for Post-Directed or Layby Use in Sugarcane** for additional weed control in burndown, preemergence, post-directed and layby applications. Refer to tank mix partner's label for adjuvant directions.

**It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.**

**Table - Tank Mixes with This Product for Post-Directed or Layby Use in Sugarcane**

TANK MIX PARTNER <sup>1</sup>	TARGET WEEDS	BURNDOWN	POST-DIRECTED <sup>2</sup>	LAYBY
2,4-D amine	Annual and Perennial Broadleaf Weeds	X		
atrazine	Pigweeds Cocklebur	X	X	X
Asulox® <sup>3</sup>	Annual Grasses		X	X
Evik® <sup>4</sup>	Annual Grasses		X	X
glyphosate <sup>5</sup>	Annual and Perennial Weeds	X		X
metribuzin <sup>6</sup>	Broadleaf Panicum Goosegrass		X	X
Sempra®	Purple Nutsedge Yellow Nutsedge	X	X	X
Weedmaster®	Annual and Perennial Broadleaf Weeds	X		

<sup>1</sup> Refer to tank mix product labels for specific directions for control of emerged weeds present not listed in **Table - Broadleaf Weeds Controlled by Post-Directed or Layby Application of This Product**.

<sup>2</sup> Only make post-directed applications to upright sugarcane varieties after the sugarcane has exceeded 24 inches in height. **DO NOT** make post-directed applications to "PINEAPPLE" varieties. Post-directed applications to "PINEAPPLE" varieties or to upright varieties that have not exceeded 24 inches in height may result in unacceptable crop injury.

<sup>3</sup> Apply to sugarcane at least 24 inches tall.

<sup>4</sup> Apply before weeds are greater than 6 inches tall.

<sup>5</sup> Glyphosate applications must be made with a hooded sprayer. Sugarcane must be at least 3 ft. tall. Contact with the sugarcane foliage by either the spray mixture or the treated weed foliage will result in sugarcane injury.

<sup>6</sup> Refer to metribuzin label for restrictions based on soil type.

#### **ADDITIONAL PREEMERGENCE BROADLEAF CONTROL**

This product can be tank mixed with atrazine or diuron for additional preemergence broadleaf control.

#### **ADDITIONAL PREEMERGENCE GRASS CONTROL**

This product can be tank mixed with PROWL (or other pendimethalin products) for additional preemergence grass control provided sugarcane has not emerged.

#### **DIRECTIONS FOR USE IN SUNFLOWER[\*] AND SAFFLOWER[\*]**

[\* - Not for Use in California]

##### **HARVEST AID**

##### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply more than 3 oz of this product (0.094 lb Al) per acre during a single application.
- **DO NOT** apply more than 3 oz of this product (0.094 lb Al) per acre per year.
- **DO NOT** make more than 4 application per year.
- **DO NOT** harvest within 5 days of application.
- **DO NOT** apply sooner than the Retreatment interval of 14 days.

Desiccation from this product requires the addition of an agronomically approved adjuvant to the spray mixture. Use a methylated seed oil which contains at least 15% emulsifiers and 80% oil at 1 quart per acre. A spray grade nitrogen source (either ammonium sulfate at 2 to 2.5 lbs per acre or a 28 to 32% nitrogen solution at 1 to 2 quarts per acre) may be added to the spray mixture along with methylated seed oil to enhance desiccation. The addition of a nitrogen source does not replace the need for methylated seed oil. Tank mixing this product with glyphosate or paraquat will increase control of emerged weeds and aid in harvest for sunflowers. Tank mixing this product with glyphosate will increase control of emerged weeds and aid in harvest for safflower.

#### **TIMING TO SUNFLOWER AND SAFFLOWER**

Apply this product, at 1.5 to 2 oz per acre, when crop is mature (when seed is 35% moisture or less). For many varieties, this is when the backs of the heads are turning yellow and the bracts are turning brown. Sunflower and safflower can be harvested 5 days after application. To ensure thorough coverage, use 15 to 30 gallons of spray solution per acre and select nozzle type using manufacturer's gallonage and pressure specifications for postemergence application.

## **DIRECTIONS FOR USE IN SWEET POTATO** [For Use in the States of Arizona, California and Hawaii Only]

### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply more than 3 oz of this product (0.094 lb AI) per acre per application.
- **DO NOT** apply more than 3 oz of this product (0.094 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** apply postemergence to sweet potatoes.
- **DO NOT** use greenhouse grown transplants.
- **DO NOT** use transplants harvested more than 2 days prior to transplanting.
- **DO NOT** use on any sweet potato variety other than "Beauregard", unless user has tested this product on other variety and has found crop tolerance to be acceptable.
- **DO NOT** apply as a part of any tank mix, except with labeled rates of Command, if tank mix is applied prior to transplanting.
- **DO NOT** apply sooner than the Retreatment interval of 14 days.

### **TIMING TO SWEET POTATOES**

This product must be applied prior to transplanting sweet potatoes.

### **TIMING TO WEEDS**

#### **Preemergence to Weeds**

Apply this product to soil prior to transplanting sweet potato slips for the preemergence control of the weeds listed in Table - **Broadleaf Weeds Controlled by Residual Activity of This Product**.

## **DIRECTIONS FOR USE IN WHEAT[\*]**

[\* - Not for Use in California]

[For Use in the States of Delaware, Idaho, Kentucky, Maryland, Minnesota, Montana, North Carolina, North Dakota, New Jersey, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Virginia Washington and Wisconsin Only]

### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply more than 2 oz of this product (0.094 lb AI) per acre during a single application.
- **DO NOT** apply more than 2 oz of this product (0.094 lb AI) per acre per year.
- **DO NOT** make more than 4 applications per year.
- **DO NOT** apply sooner than the Retreatment interval of 14 days.

### **PRE-PLANT APPLICATIONS. PRE-EMERGENCE WEED CONTROL**

#### **RESTRICTIONS AND LIMITATIONS**

- For pre-plant weed control, use only on no-till or minimum tillage fields where the previous year's crop residue has not been incorporated into the soil.
- [Plant wheat no sooner than 7 days after application of this product in the states of DE, ID, KY, MD, MN, MT, NC, ND, NJ, OR, PA, SC, SD, TN, VA WA or WI]
- [Plant wheat no sooner than 14 days after application of this product in the states of DE, ID, KY, MD, MN, MT, NC, ND, NJ, OR, PA, SC, SD, TN, VA WA or WI]
- [DO NOT use on Durum wheat.]
- **DO NOT** irrigate between emergence and spike.
- Wheat must be planted a minimum of 1 inch deep.
- **DO NOT** graze until wheat has reached 5 inches in height.

#### **Burndown Use Directions**

This product, applied as part of a burndown program at 2 oz per acre, may be used for residual weed control, as well as to assist in postemergence burndown of many weeds where wheat will be planted directly into the residue of the previous crop. See **Directions for Use in Fall Burndown Programs in Fields to be Planted to Barley, Field Pea, Flax, Lentil, Safflower, Sunflower and Spring Wheat** for rates and timing of applications. For control of emerged weeds, this product must be applied with an appropriate burndown tank mix partner. To ensure thorough coverage, use a minimum of 15 gallons of spray solution per acre. Refer to tank mix partner's label for specified application pressure and adjuvant systems.

### **[POST-PLANT. PRE-EMERGENCE WEED CONTROL]**

#### **[RESTRICTIONS AND LIMITATIONS]**

- For post-plant, pre-emergence weed control, use only on no-till or minimum tillage fields where the previous crop residue has not been incorporated into the soil.
- Apply this product up to 2 days after planting.
- [DO NOT use on Durum wheat.]
- **DO NOT** irrigate between emergence and spike.
- Wheat must be planted a minimum of 1 inch deep.
- **DO NOT** graze until wheat has reached 5 inches in height.

#### **Use Directions**

This product, applied at 2 oz (0.094 lb AI) per acre, may be used for residual weed control, where wheat has been planted directly into the residue of the previous year. Application must be made no later than 2 days after planting.]

## **HARVEST AID**

### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** harvest within 10 days of application.

### **Use Directions**

This product, applied at 2 oz (0.0940 lb AI) per acre for desiccation requires the addition of an agronomically approved adjuvant to the spray mixture. Use a methylated seed oil which contains at least 15% emulsifiers and 80% oil at 1 quarts per acre. A spray grade nitrogen source (either ammonium sulfate at 2 to 2.5 lbs per acre or a 28 to 32% nitrogen solution at 1 to 2 quarts per acre) may be added to the spray mixture along with methylated seed oil to enhance desiccation. The addition of a nitrogen source does not replace the need for methylated seed oil. Tank mixing this product with glyphosate will increase control of emerged weeds and aid in harvest.

To ensure thorough coverage, use a minimum of 10 gallons spray solution per acre by ground application and a minimum of 5 gallons per acre by aerial application. Nozzle selection must meet manufacturer's gallonage and pressure specifications for postemergence application.

### **TIMING TO WHEAT**

Apply this product, at 1.5 to 2 oz (0.048 -0.094 lb AI) per acre, after wheat reaches the hard dough stage and grain has no more than 30% moisture. Wheat can be harvested 10 days after application. Nufarm advises tank mixing with glyphosate.

## **DIRECTIONS FOR USE IN ALMONDS, BUSHBERRY, CANEBERRY, CITRUS FRUIT, GRAPE, NUT TREES (INCLUDING PISTACHIOS), OLIVE, POME FRUIT, POMEGRANATE, STONE FRUIT AND NON-BEARING FRUIT TREES**

### **Bushberry Crop Subgroup 13-07B Includes:**

Aronia Berry; Blueberry, Highbush; Blueberry, Lowbush; Buffalo Currant; Chilean Guava; Cranberry, Highbush; Currant, Black; Currant, Red; Elderberry, European Barberry, Gooseberry, Honeysuckle, edible; Huckleberry; Jostaberry; Juneberry (Saskatoon Berry); Lingonberry; Native Currant; Salal; Sea Buckthorn; and cultivars, varieties and/or hybrids of these.

### **Caneberry Crop Subgroup 13-07A Includes:**

Blackberry, Loganberry, Black Raspberry, Red Raspberry, Wild Raspberry and cultivars, varieties and/or hybrids of these.

### **Citrus Fruit Crop Group 10-10 Includes:**

Australian Desert Lime; Australian Finger-lime; Australian Round Lime; Brown River Finger Lime; Calamondin; Citron; Citrus hybrids; Grapefruit; Japanese Summer Grapefruit; Kumquat; Lemon; Lime; Mediterranean Mandarin; Mount White Lime; New Guinea Wild Lime; Orange, Sour; Orange, Sweet; Pummelo; Russell River Lime; Satsuma Mandarin; Sweet Lime; Tachibana Orange; Tahiti Lime; Tangelo; Tangerine (mandarin); Tangor; Trifoliate Orange; Uniq Fruit; [and] cultivars, varieties and/or hybrids of these.

### **Tree Nut Crop Group 14-12 Includes:**

African Nut-tree; Almond, Beechnut; Brazil Nut; Brazilian Pine; Bunya; Bur Oak; Butternut; Cajou Nut; Candlenut; Cashew; Chestnut; Chiquapin; Coconut; Coquito Nut; Dika Nut; Ginkgo; Guiana Chestnut; Hazelnut (Filbert); Heartnut; Hickory Nut; Japanese Horse-chestnut; Macadamia Nut; Mongongo Nut; Monkey-pot; Monkey Puzzle Nut; Okari Nut; Pachira Nut; Peach Palm Nut; Pecan; Pequi; Pili Nut; Pine Nut; Pistachio; Sapucaia Nut; Tropical Almond; Walnut, Black; Walnut, English; Yellowhorn, and cultivars, varieties and/or hybrids of these.

### **Pome Fruit Crop Group 11-10 Includes:**

Apple; Azarole; Crabapple; Loquat; Mayhaw; Medlar; Pear; Pear, Asian; Quince; Quince, Chinese; Quince, Japanese; Tejocote; and cultivars, varieties and/or hybrids of these.

### **Stone Fruit Crop Group 12-12 Includes:**

Apricot; , Japanese; Capulin; Cherry, Black; Cherry, Nanking; Cherry, Sweet; Cherry, Tart; Jujube, Chinese; Nectarine; Peach; Plum; Plum, American; Plum, Beach; Plum, Canada; Plum, Cherry; Plum, Chickasaw; Plum, Damson; Plum, Japanese; Plum, Klamath; Plum, Prune; Plumcot; Sloe and cultivars, varieties and/or hybrids of these.

### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply more than 12 oz of this product (0.38 lb AI) per acre during a single application, except Caneberries, for Caneberries **DO NOT** apply more than 6 oz of this product (0.188 lb AI) per acre during a single application.
- **DO NOT** apply more than 24 oz of this product (0.75 lb AI) per acre during a single year, except:  
Bushberries, for Bushberries **DO NOT** apply more than 12 oz of this product (0.38 lb AI) per acre during a single year;  
Caneberries, for Caneberries **DO NOT** apply more than 6 oz of this product (0.188 lb AI) per acre during a single year.
- **DO NOT** make more than 12 applications per year.
- **DO NOT** retreat sooner than 30 days, except nut trees, for nut trees **DO NOT** retreat sooner than 60 days of the first application.
- **DO NOT** apply to farm alleys or roads where traffic may result in treated dust settling onto crops or other desirable vegetation.
- **DO NOT** apply within 300 yards of non-dormant pome fruit and stone fruit.
- **DO NOT** apply to powdery soils or soils that are susceptible to wind displacement unless irrigation can be applied immediately after application.
- [DO NOT mow treated areas between bud break and final harvest. Dust created by mowing may drift onto desirable vegetation resulting in injury.]
- **DO NOT** apply to nut trees established less than one year, unless protected from spray contact by non-porous wraps, grow tubes, or waxed containers.
- Preharvest Interval (PHI)
  - Citrus Fruit: 3 days
  - Bushberries: 7 days
  - Caneberries: 7 days
  - Grape: 60 days
  - Nut Trees: 60 days
  - Olive: 60 days

- Pome Fruit: 60 days
- Pomegranate: 60 days
- Stone Fruit: 60 days

## PRECAUTIONS

- Use a maximum rate of this product of 6 oz (0.188 lb AI) per acre per application on any soil that has a sand plus gravel content over 80% if bushes, trees or vines are less than 3 years of age. (Two applications of 6 oz (0.188 lb AI) per acre in a single year period can still be made as long as there have been 60 days between applications).
- Raise mower height during all mowing to reduce dust. Dust created by mowing can drift onto desirable vegetation resulting in injury.
- Follow the most restrictive label limitations and precautions of the tank mix product(s) being used.
- Avoid direct or indirect spray contact to foliage and green bark (non-barked trunk and non-barked vines with the exception of undesirable suckers).
- Irrigate after application with minimum of 1/4 inch of water to activate the herbicide and to reduce wind displacement of soil.

For bushberries, caneberries, citrus fruit, grape, nut trees (including pistachio), olive, pomegranate and non-bearing fruit trees, apply this product as a uniform broadcast application to the orchard or vineyard floor or as a uniform band directed at the base of the bush, trunk or vine. For pome fruit and stone fruit, this product can only be applied as a uniform band directed at the base of the trunk prior to "pink bud" in apple and "bud break" in stone fruit and pear. The preferred application timing for this product is in the fall to maximize the potential for rainfall to activate and set the herbicide. **DO NOT** apply over the top of crop or allow spray to come in contact with crop as a result of application or drift.

### Preemergence Application

Apply 6 to 12 oz (0.188 to 0.38 lb AI per acre) [(maximum 6 oz/A (0.188 lb AI) for caneberries)] of this product per broadcast acre as a preemergence application. Make preemergence (to weed emergence) applications of this product to a weed-free soil surface. Preemergence applications of this product must be completed prior to weed emergence. Moisture is necessary to activate this product on soil for residual weed control. Dry weather following application of this product may reduce effectiveness. However, when adequate moisture is received after dry conditions, this product will control susceptible germinating weeds.

### Postemergence Application

Apply 6 to 12 oz (0.188 to 0.38 lb AI per acre) [(maximum 6 oz/A (0.188 lb AI) for caneberries)] of this product per broadcast acre plus an adjuvant (0.25% v/v non-ionic surfactant or 1 quart per acre crop oil concentrate). The addition of an adjuvant enhances activity of this product on emerged weeds. Thorough spray coverage is necessary to maximize the postemergence activity of this product. This product will not control emerged weeds without the addition of a labeled burndown product.

Refer to Table - **Weeds Controlled by Preemergence Application of This Product** for weeds controlled by the residual activity of this product. Tank mix this product with a labeled burndown herbicide for control of the emerged weeds listed in Table - **Weeds Controlled by Postemergence Activity of Tank Mixes of This Product**. Refer to tank mix partner's label for additional weed species and increased weed heights claimed. Refer to tank mix partner's label for additional restrictions, including minimum carrier volume and crops in which tank mix partner may be used. Burndown tank mix partners include glyphosate, paraquat, 2,4-D and glufosinate. Tank mixes with glyphosate or 2,4-D containing products are not advised during the period after bloom through final harvest to ensure crop safety from drift.

Residual weed control will be reduced if vegetation prevents this product from reaching the soil surface. If vegetation is heavy, it is specified to use a burndown herbicide with this product and make a sequential application of this product prior to the emergence of new weeds.

### Carrier Volume and Spray Pressure

To ensure thorough coverage in burndown applications, use a minimum of 15 gallons of spray solution per acre. Use higher gallonage if dense vegetation or heavy crop residue is present.

Nozzle selection must meet manufacturer's gallonage and pressure specifications.

### Banded Application

Rates listed in Table - **Weeds Controlled by Postemergence Activity of Tank Mixes of This Product**, refer to a broadcast application covering the entire acre. When making a banded application, the rate must be reduced according to the following formula:

Amount Needed per Acre for Banded Application	=	$\frac{\text{Band Width in Inches}}{\text{Row Width in Inches}}$	X	Rate per Broadcast Acre
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## USE RESTRICTIONS FOR BUSHBERRIES

- **DO NOT** use in the states of Idaho, Oregon or Washington except west of the Cascade Mountains in the following counties:
- **Oregon:** Benton, Clackamas, Clatsop, Columbia, Coos, Curry, Douglas, Jackson, Josephine, Lane, Lincoln, Linn, Marion, Multnomah, Polk, Tillamook, Umatilla, Yamhill and Washington
- **Washington:** Benton, Clallam, Clark, Cowlitz, Franklin, Grant, Grays Harbor, King, Jefferson, Kitsap, Lewis, Pacific, Pierce, Skagit, Snohomish, Thurston, Wahkiakum, Walla Walla and Whatcom
- **DO NOT** apply to bushberries established less than 2 years unless they are protected from spray contact by nonporous wrap, grow tubes or waxed containers.

## USE PRECAUTIONS FOR GRAPES

- **DO NOT** apply to grapes established less than 2 years unless they are trellised at least 3 feet from the soil surface or are protected from spray contact by non-porous wrap, grow tubes or waxed containers.
- **DO NOT** apply to grapes that are not trellised or staked unless they are free standing.
- Avoid direct or indirect spray contact to foliage and green bark (non-barked vines, with the exception of undesirable suckers).
- Plant new plantings of "own-rooted varieties", including Concord, so that all roots are a minimum 8 inches below the soil surface to be treated. In some situations, this may require hilling soil around newly planted vines so that the settled depth of the hill will be 4 to 5 inches

above the vineyard floor.

#### **Juice, Raisin and Wine Grapes**

- **DO NOT** apply during the period after bud break through final harvest, unless using shielded application equipment and applicator can ensure spray drift will not come in contact with crop fruit or foliage. **DO NOT** make shielded applications during this time period with glyphosate or products containing glyphosate.

#### **Table Grapes**

- This product may be applied during the period following final harvest up to bud break.
- **DO NOT** apply after bud break.

### **USE PRECAUTIONS FOR ALMONDS, CITRUS FRUIT, NUT TREES (INCLUDING PISTACHIOS), OLIVE, POME FRUIT, POMEGRANATE, AND STONE FRUIT**

**• California only:** For almonds and stone fruit in the counties of Merced, San Joaquin and Stanislaus, see **USE PRECAUTIONS FOR ALMOND AND STONE FRUIT IN DEFINED AREAS OF MERCED, SAN JOAQUIN AND STANISLAUS COUNTIES OF CALIFORNIA** use instructions.

- For pome fruit and stone fruit, this product can only be applied as a uniform band directed at the base of the trunk prior to silver tip in apples and bud break in stone fruit.
- For nut trees (including Almonds and Pistachios), olive and pomegranate apply after bud break through final harvest using shielded application equipment if the applicator can ensure the spray drift will not come into contact with non-target vegetation, crop fruit and/or foliage. Shielded application equipment is not required if the following application parameters are followed:
  - Application pressure (at boom) < 30 PSI.
  - Application speed < 5 MPH.
  - Applicator can ensure the spray drift will not come into contact with non-target vegetation, crop fruit and/or foliage.

#### **RESTRICTIONS**

- **DO NOT** apply to pears in the states of Oregon or Washington.
- For pome fruit and stone fruit **DO NOT** apply to row middles (area between berms)
- **DO NOT** apply to trees established less than one year, unless protected from spray contact by non-porous wraps, grow tubes, paint or waxed containers.
- **DO NOT** use in the states of Oregon or Washington except in the following counties unless the additional restrictions listed below are followed:

**Oregon:** Benton, Clackamas, Clatsop, Columbia, Coos, Curry, Douglas, Jackson, Josephine, Lane, Lincoln, Linn, Marion, Morrow, Multnomah, Polk, Tillamook, Umatilla, Yamhill and Washington

**Washington:** Clallam, Cowlitz, Grays Harbor, King, Jefferson, Kitsap, Lewis, Pacific, Pierce, Skagit, Snohomish, Thurston, Wahkiakum and Whatcom

- For apples east of the Cascade Mountains in Washington (counties not listed above), follow the restrictions above plus:
  - Apply between final harvest and January 1.
  - Apply only to apple blocks with an established (2 years or older) permanent cover crop that covers a minimum of 60% of the surface area in the block.
  - Application must be incorporated with a minimum of one half inch of water within 48 hours after application.
  - **DO NOT** apply to powdery soils or soils susceptible to wind displacement.
  - Apply only to orchard berms.
  - **DO NOT** mow the treated berm areas of the orchard.

#### **RESTRICTIONS FOR NON-BEARING FRUIT**

Non-Bearing Avocado and Fig

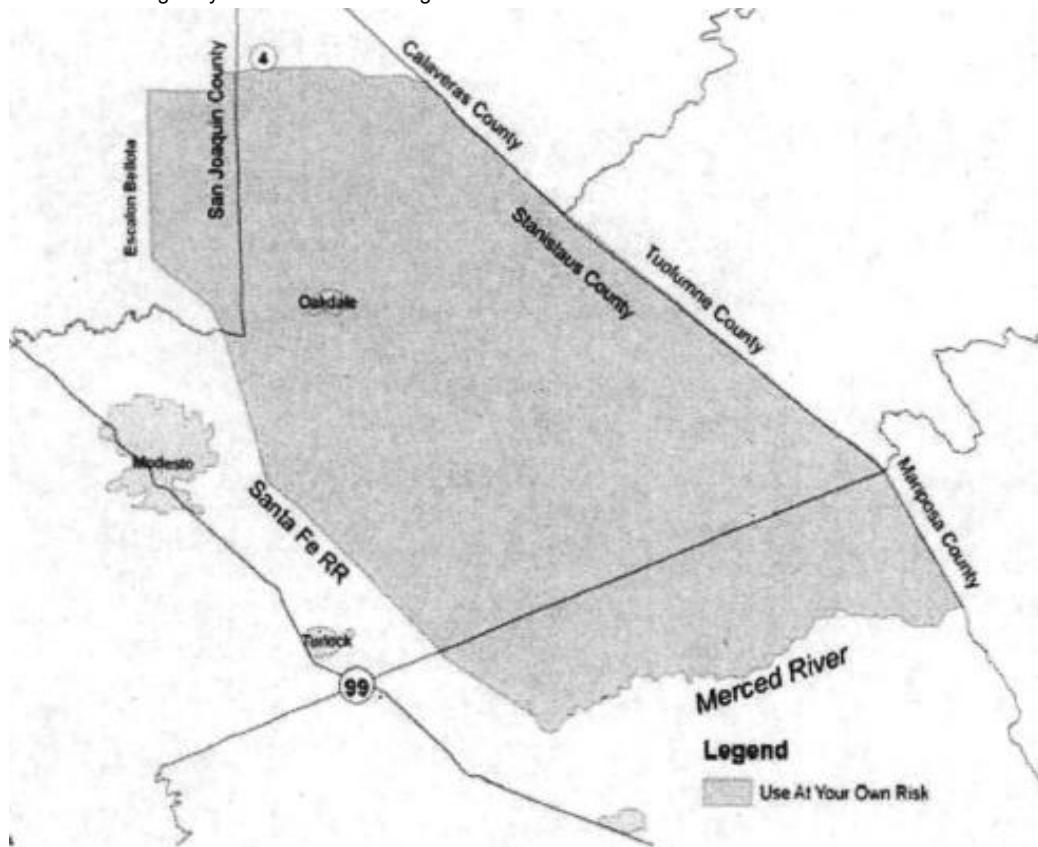
- **DO NOT** apply more than 12 oz of this product (0.38 lb AI) per acre during a single application.
- **DO NOT** apply more than 24 oz of this product (0.75 lb AI) per acre during a single year.
- **DO NOT** make more than 12 applications per year.
- **DO NOT** harvest fruit from treated trees within one year of application.
- **DO NOT** apply to trees established less than one year, unless protected from spray contact by non-porous wraps, grow tubes or waxed containers.
- **DO NOT** apply during the period after flowering through leaf drop, unless using shielded application equipment and the applicator can ensure spray drift will not come in contact with the crop foliage.
- **DO NOT** apply sooner than the Retreatment interval of 14 days.

### **USE PRECAUTIONS FOR ALMOND AND STONE FRUIT IN DEFINED AREAS OF MERCED, SAN JOAQUIN AND STANISLAUS COUNTIES OF CALIFORNIA**

The use of this product in soils common in parts of Merced, San Joaquin and Stanislaus counties in California is known to have resulted in injury to almonds under drought stress conditions. These soils are characterized by having been cut or filled, high sand content, low clay content and shallow profiles. Growers in the Defined Area must be aware and assume the risk of using this product on almond or stone fruit crops. The Defined Area can be seen on the Map or by the description that follows:

- Intersection of Highway 4 and Escalon Bellota Road at Farmington in San Joaquin County;
- Directly South on Escalon-Bellota to the Santa Fe Avenue and railroad tracks at Escalon
- Southeast on Santa Fe Avenue down to the Merced River;
- East following the Merced River to the Merced/Mariposa County line;
- Northwest following the Merced County line through the intersection of Merced and Stanislaus County line following the Stanislaus/Tuolumne County and Calaveras County line to Highway 4;

- West on Highway 4 back to the Farmington intersection of Escalon — Bellota Road.



#### ADDITIONAL RESIDUAL WEED CONTROL

This product maybe tank mixed with oryzalin (Surflan®), simazine or diuron for additional residual weed control. Always read and follow label use directions for all products being used.

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**Table - Weeds Controlled by Postemergence Activity of Tank Mixes of This Product**

BROADLEAF WEED SPECIES			
COMMON NAME	SCIENTIFIC NAME	WEED HEIGHT/LENGTH (inches)	PANTHER HERBICIDE RATE
Bindweed, Field <sup>1</sup>	<i>Convolvulus arvensis</i>	8	6 to 12 oz/A (0.188- 0.376 lb Al)
Carpetweed	<i>Mollugo verticillata</i>	4	
Chickweeds,			
Common	<i>Stellaria media</i>	4	
Mouseear	<i>Cerastium vulgatum</i>	4	
Cocklebur, Common	<i>Xanthium strumarium</i>	4	
Evening primrose, Cutleaf <sup>2</sup>	<i>Oenothera laciniata</i>	12	
Filaree,			
Broadleaf	<i>Erodium botrys</i>	4	
Redstem	<i>Erodium cicutarium</i>	4	
Florida Beggarweed	<i>Desmodium tortuosum</i>	2	
Hemp Sesbania	<i>Sesbania exaltata</i>	8	
Jimsonweed	<i>Datura stramonium</i>	4	
Lambsquarters, Common	<i>Chenopodium album</i>	4	
Morning Glories,			
Entireleaf	<i>Ipomoea hederacea</i> var. <i>integriuscula</i>	4	
Ivyleaf	<i>Ipomoea hederacea</i>	4	

Pitted	<i>Ipomoea lacunosa</i>	6
Red/Scarlet	<i>Ipomoea coccinea</i>	4
Tall	<i>Ipomoea purpurea</i>	4
Mustard, Wild	<i>Brassica kaber</i>	6
Pigweeds,		
Palmer Amaranth	<i>Amaranthus palmeri</i>	6
Redroot	<i>Amaranthus retroflexus</i>	6
Smooth	<i>Amaranthus hybridus</i>	6
Plantain, Broadleaf	<i>Plantago major</i>	6
Prickly Sida (Teaweed)	<i>Sida spinosa</i>	6
Purslanes,		
Common	<i>Portulaca oleracea</i>	4
Rock	<i>Calandrinia spp.</i>	2
Ragweeds,		
Common	<i>Ambrosia artemisiifolia</i>	2
Giant	<i>Ambrosia trifida</i>	4
Rice Flatsedge	<i>Cyperus iria</i>	4
Sicklepod	<i>Senna obtusifolia</i>	4
Smartweeds,		
Ladysthumb	<i>Polygonum persicaria</i>	4
Pale	<i>Polygonum lapathifolium</i>	4
Pennsylvania	<i>Polygonum pensylvanicum</i>	4
Spotted Spurge	<i>Euphorbia maculata</i>	4
Velvetleaf	<i>Abutilon theophrasti</i>	4
Venice Mallow	<i>Hibiscus trionum</i>	4
Waterhemp,		
Common	<i>Amaranthus rudis</i>	2
Tall	<i>Amaranthus tuberculatus</i>	2

<sup>1</sup> This product will only provide control of the above ground portion of bindweed. Repeated applications will be needed to control regrowth.

<sup>2</sup> For acceptable control, cutleaf evening primrose must be 12 inches or less and in the rosette stage. Add crop oil concentrate, at 1 pint per acre, or non-ionic surfactant at 0.25% v/v to glyphosate tank mixes for cutleaf evening primrose control, including glyphosate formulations that contain a built-in adjuvant system.

## **DIRECTIONS FOR USE TO MAINTAIN BARE GROUND ON NON-CROP AREAS OF FARMS, ORCHARDS AND VINEYARDS**

### **RESTRICTIONS AND LIMITATIONS**

- **DO NOT** apply to farm alleys or roads where traffic may result in treated dust settling onto crops or other desirable vegetation.
- **DO NOT** apply to ditch banks.
- **DO NOT** apply more than 12 oz of this product (0.38 lb AI) per acre per application.
- **DO NOT** apply more than 24 oz of this product (0.76 lb AI) per acre per year.
- **DO NOT** make more than 2 applications per year.
- **DO NOT** apply sooner than the Retreatment interval of 14 days.

This product, when used as directed, can be used on farms, orchards and vineyards for non-selective vegetation control to maintain bare ground on non-crop areas that must be kept weed free. Follow all applicable directions as outlined above under "USE INFORMATION".

This product offers residual and postemergence control of susceptible broadleaf and grass weeds as well as an additional mode of action to assist in the control of ALS (acetolactate synthase) resistant weeds. This product can be tank mixed with the herbicides listed in Table - **Tank Mix Combinations to Maintain Bare Ground Non-Crop Areas** for increased residual or postemergence control. The length of residual control is dependent on the rate applied as well as on rainfall and temperature conditions. Length of residual control will decrease as temperature and precipitation increase. Rates of this product of 6 to 12 oz per acre are required to provide residual control of the weeds listed in Table - **Weeds Controlled by Preemergence Application of This Product**.

### **PREEMERGENCE APPLICATION**

Apply 6 to 12 oz (0.188 to 0.38 lb AI per acre) of this product per broadcast acre as a preemergence application. Make preemergence (to weed emergence) applications of this product to a weed-free soil surface. Preemergence applications of this product must be completed prior to weed emergence. Moisture is necessary to activate this product on soil for residual weed control. Dry weather following application of this product may reduce effectiveness. However, when adequate moisture is received after dry conditions, this product will control susceptible germinating weeds.

## POSTEMERGENCE APPLICATION

Apply 6 to 12 oz (0.188 to 0.38 lb Al per acre) of this product per broadcast acre plus an adjuvant (0.25% v/v non-ionic surfactant or 1 quart per acre crop oil concentrate). The addition of an adjuvant enhances activity of this product on emerged weeds. Thorough spray coverage is necessary to maximize the postemergence activity of this product. Emerged weeds are controlled postemergence with this product, however, translocation of this product within a weed is limited, and control is affected by spray coverage and by the addition of an adjuvant. The most effective postemergence weed control with this product occurs when applied in combination with a surfactant to weeds less than 2 inches in height. Use a tank mix partner in combination with this product for the postemergence control of weeds larger than 2 inches. Specified tank mix partners are listed in Table - **Tank Mix Combinations to Maintain Bare Ground Non-Crop Areas**.

**IMPORTANT:** Completely read and follow the label of any potential tank mix partner with this product. When using tank mixtures, use conditions must be in accordance with the most restrictive of the label limitations and precautions on either herbicide label.

**It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.**

**Table – Tank Mix Combinations to Maintain Bare Ground on Non-Crop Areas**

Glyphosate	2,4-D	Glufosinate	Paraquat
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## STORAGE AND DISPOSAL

**DO NOT** contaminate water, food or feed by storage, disposal or cleaning of equipment.

### PESTICIDE STORAGE

Keep pesticide in original container. Store in a cool, dry, secure place. **DO NOT** put formulation or dilute spray solution into food or drink containers. **DO NOT** contaminate food or foodstuffs. **DO NOT** store or transport near feed or food. Not for use or storage in or around the home. For help with any spill, leak, fire or exposure involving this material, call day or night **CHEMREC (800) 424-9300**.

### PESTICIDE DISPOSAL

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

### CONTAINER HANDLING

[Note to Reviewer: The following statement will be included on all Final Printed Labels bearing multiple Container Disposal (Container Handling) statements] "NOTE: This product is available in multiple containers. Refer to the Net Contents section of this product's labeling for the applicable "Nonrefillable" or "Refillable" designation. Follow the container disposal [handling] instructions below that apply to your container type / size."

[Nonrefillable container. **DO NOT** reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 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. Then offer for recycling, if available or puncture and dispose of in a sanitary landfill.]

- or-

**Note to EPA reviewer: if this product is shipped in containers greater than 50 lbs, the following container handling statement will be added to the label:**

[Container statement for Nonrefillable container with liner]

**[Nonrefillable bag: DO NOT** reuse or refill this bag. Completely empty bag by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into equipment. **DO NOT** reuse bag. Dispose of bag in a sanitary landfill or by incineration if allowed by State and local authorities. Offer for recycling if available. Liner: Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into equipment. **DO NOT** reuse liner. Dispose of liner in a sanitary landfill or by incineration if allowed by State and local authorities.]

- or-

[Container statement for Nonrefillable drum with liner]

**[Nonrefillable container: DO NOT** reuse or refill this container. Offer for recycling if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 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. Turn the container over onto its other 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. Liner: Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into equipment. **DO NOT** reuse liner. Dispose of liner in a sanitary landfill or by incineration if allowed by State and local authorities.]

#### **WARRANTY DISCLAIMER**

The directions for use of this product must be followed carefully. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, (1) THE GOODS DELIVERED TO YOU ARE FURNISHED "AS IS" BY MANUFACTURER OR SELLER AND (2) MANUFACTURER AND SELLER MAKE NO WARRANTIES, GUARANTEES, OR REPRESENTATIONS OF ANY KIND TO BUYER OR USER, EITHER EXPRESS OR IMPLIED, OR BY USAGE OF TRADE, STATUTORY OR OTHERWISE, WITH REGARD TO THE PRODUCT SOLD, INCLUDING, BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, USE, OR ELIGIBILITY OF THE PRODUCT FOR ANY PARTICULAR TRADE USAGE. UNINTENDED CONSEQUENCES, INCLUDING BUT NOT LIMITED TO INEFFECTIVENESS, MAY RESULT BECAUSE OF SUCH FACTORS AS THE PRESENCE OR ABSENCE OF OTHER MATERIALS USED IN COMBINATION WITH THE GOODS, OR THE MANNER OF USE OR APPLICATION, INCLUDING WEATHER, ALL OF WHICH ARE BEYOND THE CONTROL OF MANUFACTURER OR SELLER AND ASSUMED BY BUYER OR USER. THIS WRITING CONTAINS ALL OF THE REPRESENTATIONS AND AGREEMENTS BETWEEN BUYER, MANUFACTURER AND SELLER, AND NO PERSON OR AGENT OF MANUFACTURER OR SELLER HAS ANY AUTHORITY TO MAKE ANY REPRESENTATION OR WARRANTY OR AGREEMENT RELATING IN ANY WAY TO THESE GOODS.

#### **LIMITATION OF LIABILITY**

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, IN NO EVENT SHALL MANUFACTURER OR SELLER BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, OR FOR DAMAGES IN THEIR NATURE OF PENALTIES RELATING TO THE GOODS SOLD, INCLUDING USE, APPLICATION, HANDLING, AND DISPOSAL. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, MANUFACTURER OR SELLER SHALL NOT BE LIABLE TO BUYER OR USER BY WAY OF INDEMNIFICATION TO BUYER OR TO CUSTOMERS OF BUYER, IF ANY, OR FOR ANY DAMAGES OR SUMS OF MONEY, CLAIMS OR DEMANDS WHATSOEVER, RESULTING FROM OR BY REASON OF, OR RISING OUT OF THE MISUSE, OR FAILURE TO FOLLOW LABEL WARNINGS OR INSTRUCTIONS FOR USE, OF THE GOODS SOLD BY MANUFACTURER OR SELLER TO BUYER. ALL SUCH RISKS SHALL BE ASSUMED BY THE BUYER, USER, OR ITS CUSTOMERS. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER'S OR USER'S EXCLUSIVE REMEDY, AND MANUFACTURER'S OR SELLER'S TOTAL LIABILITY SHALL BE FOR DAMAGES NOT EXCEEDING THE COST OF THE PRODUCT.

**If you DO NOT agree with or DO NOT accept any of directions for use, the warranty disclaimers, or limitations on liability, DO NOT use the product, and return it unopened to the Seller, and the purchase price will be refunded.**

(RVmmddy)

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All other trademarks are the property of their respective owners.

## **Optional Marketing Claims:**

Nufarm Grow a better tomorrow.  
Grow a better tomorrow.

### **NOTES TO REVIEWER:**

Any text found in brackets “[ “ ” ]” is optional on container label.

State restrictions will not be found on the container label if the product is not registered in that associated state.

Making the product more restrictive than Federally accepted by incorporating the optional statement “Not for use in California.” may be undertaken on the container label for any use, weed or crop as determined to be necessary to procure CADPR registration.

States may be added to the label for specific uses and/or specific crop as deemed appropriate and necessary.