

#### U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs
Registration Division (7505P)
1200 Pennsylvania Ave., N.W.
Washington D.C. 20460

Washington, D.C. 20460
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NOTICE OF PESTICIDE:

X Registration

Reregistration

EPA Reg. Number:	Date of Issuance:			
71368-113	5/7/15			
Term of Issuance:	l			
Conditional				
Name of Pesticide Product:				

Panther SC- AG Herbicide

Name and Address of Registrant (include ZIP Code):

Matthew Granahan NUFARM, Inc. 11901 S. Austin Avenue Alsip, IL 60803

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

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

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

This product is conditionally registered in accordance with FIFRA section 3(c)(7)(A). You must comply with the following conditions:

1. Submit and/or cite all data required for registration/registration/registration review of your product under FIFRA when the Agency requires all registrants of similar products to submit such data.

Shaja B. Joyner, Product Manager 20 Fungicide-Herbicide Branch Registration Division 7505P	5/7/15

EPA Form 8570-6

- 2. Be aware that proposed data requirements have been identified in a Work Plan. For more information on these proposed data requirements, you may contact the Chemical Review Manager in the Pesticide Reevaluation Division: http://www.epa.gov/oppsrrd1/contacts\_prd.htm
- 3. The data requirements for storage stability and corrosion characteristics (Guidelines 830.6317 and 830.6320) are not satisfied. A one year study is required to satisfy these data requirements. You have 18 months from the date of registration to provide these data.
- 4. Make the following label changes before you release the product for shipment:
  - Revise the EPA Registration Number to read, "EPA Reg. No. 71368-113."
- 5. Submit one copy of the final printed label for the record before you release the product for shipment.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements 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 Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

If you fail to satisfy these data requirements, EPA will consider appropriate regulatory action including, among other things, cancellation under FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

Basic CSF dated 09/15/2014

If you have any questions, please contact Tamue L. Gibson by phone at (703) 305-9096, or via email at gibson.tamue@epa.gov.

Enclosure

GROUP 14 HERBICIDE

# PANTHER<sup>™</sup> SC - AG **HERBICIDE**

ABN: PANTHER SC HERBICIDE - RC [Subpart 1 - Row Crops]

FOR CONTROL AND/OR SUPPRESSION OF CERTAIN WEEDS IN COTTON, DRY BEANS, FIELD CORN, FIELD PEAS, FLAX, LENTILS, PEANUT, SOYBEAN, SUGARCANE, SUNFLOWER AND SAFFLOWER, SWEET POTATO, WHEAT, FALLOW LAND AND TO MAINTAIN BARE GROUND ON NON-CROP AREAS OF FARMS

ABN: PANTHER SC HERBICIDE - TNVV [Subpart 2 - Tree Nut, Vine and Vegetables]

FOR CONTROL AND/OR SUPPRESSION OF CERTAIN WEEDS IN ALFALFA, ALMOND, ARTICHOKE, ASPARAGUS, BUSHBERRIES, CABBAGE AND CHINESE CABBAGE (TIGHT HEADED VARIETIES ONLY), CACTUS (PRICKLY PEAR), CELERY, COTTON, CUCURBIT VEGETABLES, DRY BEANS [{HARVEST AID ONLY)], FIELD CORN, FRUITING VEGETABLES (INCLUDING OKRA), GARLIC, GRAPE, HOPS, MINT, NUT TREES (INCLUDING PISTACHIO), ONION (DRY BULB), OLIVE, POME FRUIT, POMEGRANATE, POTATO, STONE FRUIT, STRAWBERRY, 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** 

#### **ACTIVE INGREDIENT:**

Flumioxazin\*..... 44.0% 56.0% OTHER INGREDIENTS: 100.0% TOTAL: .....

\*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 Panther SC contains 4 pounds flumioxazin per gallon.

> [For < 5 Gallon Containers:] [Shake Well Before Use] [For > 5 Gallon Containers:] [Shake Well, Agitate or Recirculate Before Use]

#### **KEEP OUT OF REACH OF CHILDREN**

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 INSIDE BOOKLET FOR ADDITIONAL PRECAUTIONARY STATEMENTS

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

**EPA REG. NO. 71368-RRG** EPA EST. NO.

MANUFACTURED FOR **NUFARM INC.** 11901 S. AUSTIN AVE. **ALSIP, IL 60803** 



ACCEPTED

May 07, 2015

Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 71368-113

# [PANTHER SC HERBICIDE - RC]

[For use in Row Crop Market Segment]

GROUP 14 HERBICIDE

# PANTHER<sup>™</sup> SC - RC HERBICIDE

FOR CONTROL AND/OR SUPPRESSION OF CERTAIN WEEDS IN COTTON, DRY BEANS, FIELD CORN, FIELD PEAS, FLAX, LENTILS, PEANUT, SOYBEAN, SUGARCANE, SUNFLOWER AND SAFFLOWER, SWEET POTATO, WHEAT, FALLOW LAND AND TO MAINTAIN BARE GROUND ON NON-CROP AREAS OF FARMS

**ACTIVE INGREDIENT:** 

\*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 Panther SC contains 4 pounds flumioxazin per gallon.

[For ≤ 5 Gallon Containers:] [Shake Well Before Use] [For > 5 Gallon Containers:] [Shake Well, Agitate or Recirculate Before Use]

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EPA REG. NO. 71368-RRG EPA EST. NO. MANUFACTURED FOR NUFARM INC. 11901 S. AUSTIN AVE. ALSIP, IL 60803



**NET CONTENTS:** 

[Designation as "NONREFILLABLE" or "REFILLABLE" for containers ≥ 5 GAL]

# PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Harmful if inhaled or absorbed through the skin. Causes moderate eye irritation. Avoid breathing spray mist. Avoid contact with skin, eyes or clothing.

#### **HOT LINE NUMBER**

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.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE):

Some of the materials that are chemical-resistant to this product are listed below.

**Applicators and other handlers must wear:** long-sleeved shirt and long pants, chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride, shoes and socks.

For aerial application to sugarcane, mixer/loaders must also wear: coveralls, chemical resistant apron and chemical resistant boots.

For aerial application to field peas; flax; lentils; safflower; sunflower and wheat, mixer/loaders must also wear: filtering face piece respirator (N95, R95 or P95).

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:**

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- 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 maybe 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.

This pesticide is toxic to plants and should be used 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, such as 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.

#### PHYSICAL OR CHEMICAL HAZARDS

Do not mix or allow coming in contact with oxidizing agent. Hazardous chemical reaction may occur.

#### **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, such as 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 the treated area until sprays have dried.

#### **RISKS OF USING THIS PRODUCT**

The Buyer and User (referred to collectively herein as "Buyer") of this product should 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 should 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 SHOULD NOT 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.

#### RESISTANCE MANAGEMENT

This product is a Group 14 herbicide. Any weed population may contain or develop plants naturally resistant to this product and other Group 14 herbicides. Weed species with acquired resistance to Group 14 herbicides may eventually dominate the weed population if Group 14 herbicides are used repeatedly in the same field or in successive years as the primary method of control for targeted species. This may result in partial or total loss of control of those species by this product or other Group 14 herbicides.

To delay herbicide resistance consider:

- Avoiding the consecutive use of this product or other target site of action Group 14 herbicides that might have a similar target site of action, on the same weed species.
- Using tank mixtures or premixes with herbicides from different target site of action Groups as long as the involved products are all registered for the same use, have different sites of action and are both effective at the tank mix or prepack rate on the weed(s) of concern.
- Basing herbicide use on a comprehensive Integrated Pest Management (IPM) program.
- · Monitoring treated weed populations for loss of field efficacy.
- Contacting your local extension specialist, certified crop advisors and/or manufacturer for herbicide resistance management and/or integrated weed management recommendations for specific crops and resistant weed biotypes.

For further information or to report suspected resistance, you may contact Nufarm at (800) 345-3330.

#### **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.

Read and follow the entire label of each product to be used in the tank mix with this product.

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#### **USE INFORMATION**

#### Uses:

- 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 for non-selective vegetation control to maintain bare ground non-crop areas that must be kept weed free.

Read tank mix product label for rates 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 claimed in crop specific use directions. This label makes no claims concerning control of other weed species.

#### AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR.

The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator is responsible for considering all of these factors when making decisions. Where states have more stringent regulations, they should be observed.

#### **RESTRICTIONS AND LIMITATIONS**

- Do not apply this product when weather conditions favor spray drift from treated areas.
- Do not apply during low-level inversion conditions, including fog.
- When applying by air, observe drift management restrictions and precautions listed under "AERIAL APPLICATION".
- Do not apply to frozen or snow covered soil.
- Mechanical incorporation into the soil will reduce residual weed control.
- Post directed and layby applications of this product should be applied only to healthy growing crops.
- 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 pears.
- Do not apply to powdery soils or soils that are susceptible to wind displacement unless irrigation can be applied immediately after application.

Spray equipment used to apply this product should not be used to apply other materials to any crop foliage, unless the proper cleanout procedures are followed. See "SPRAYER CLEANUP" for more information.

#### **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

#### **Postemergence Application**

This product should only be applied 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.

#### Rainfast

This product is rainfast one hour after application. Postemergence 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 should 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 should 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 should 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, such as Roundup Power Max®, 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 such as cutleaf eveningprimrose and Carolina geranium. Mixing compatibility qualities should be verified by a jar test.

A spray grade nitrogen source (either ammonium sulfate at 2 to 2.5 pounds 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 PANTHER SC

When using this product and an adjuvant, such as in stale seed bed, layby, hooded/shielded or reduced tillage situations, a jar test should be performed 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. The water should be from the same source and temperature as which will be used in the spray tank mixing operation.
- 2. Add 1 milliliter of this product to the quart jar for every 3 fluid ounces of this product per acre being applied (4 milliliters if 12 fluid ounces 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 ounces) 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. If any of the following conditions are observed the choice of adjuvant should be questioned:
  - 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.

#### 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 should be followed.

#### **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 pounds of spray grade ammonium sulfate per 100 gallons of spray solution.
- 3. Agitate solution. Agitation should create a rippling or rolling action on the water surface.
- 4. 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.
- 5. Add any required adjuvants.
- 6. Fill spray tank to desired level with water. Agitation should continue until all spray solution has been applied.
- 7. Mix only the amount of spray solution that can be applied the day of mixing. This product should be applied within 6 hours of mixing.

#### 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 such as "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, should 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 should be clean and in good repair. Nozzles should 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.

#### BAND APPLICATION

When banding, use proportionately less water and this product per acre. The rate of this product required per acre, when applied as a banded application, can be calculated with the following formula:

Amount Needed per Acre for	_	Band Width in Inches	Y	Rate per Broadcast Acre
Banded Application	_	Row Width in Inches	_ ^	Nate per Broadcast Acre

#### **AERIAL APPLICATION**

Spray drift away from the site of application may cause damage to non-target vegetation. To minimize drift, apply the largest droplet size consistent with uniform coverage and satisfactory weed control. To obtain satisfactory application and avoid drift, the following directions must be observed:

- Do not apply during low-level inversion conditions (including fog), when winds are gusty or under other conditions that favor drift. Do not spray when wind velocity is less than 2 mph or more than 10 mph.
- Do not apply this product by air within 40 feet of non-target plants including non-target crops.
- · Do not apply this product by air within 100 feet of emerged cotton crops.
- Do not apply this product by air within 40 feet of streams, wetlands, marshes, ponds, lakes and reservoirs.
- 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 generally afford more consistent weed control. Do not exceed the nozzle manufacturer's recommended 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, such as 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 recommendation. 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, you should 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 should the need arise.
- 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, such as 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, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the 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.

Ammonium nitrate and/or limestone should not be used 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 fluid ounces of this product. A minimum of 6 pints of slurry of this product should be used to impregnate 2000 pounds 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:

Fluid Ounces of This Product		Fluid Ounces of This Product		V 0.000		Pounds of Fertilizer
Per Ton of Fertilizer	=	Per Acre	^	2,000	÷	Per Acre

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 recommended 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 SC HERBICIDE RATES	CROPS	ROTATION INTERVALS
oz/A	Cotton (no-till or strip-till only)	14 days <sup>1</sup>
.5 to 2 oz/A	Cotton (no-till or strip-till only)	21 days <sup>1</sup>
oz/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
Jp to 3 oz/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
1 . 4 . / 5	Lentil	7 months
Jp to 4 oz/A	Sugarcane Cotton, Field Corn, Peanut, Rice, Sorghum, Soybean, Sunflower, Tobacco and Wheat	immediately 4 months
	Alfalfa, Canola, 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
	Transplanted on raised beds only: melon, pepper and tomato <sup>3</sup>	2 months (if the top 4 inches of the beds have been removed)
to 12 oz/A	Cotton, Field Corn, Peanut, Rice, Sorghum, Soybean, Sunflower, Tobacco and Wheat	9 months
	Alfalfa, Canola, Sugar Beet and all other crops not listed <sup>2</sup> Trees can be transplanted 2 months after an application of this product <sup>4</sup>	12 months if soil is tilled prior to planting 18 months if no tillage is performed

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

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

<sup>&</sup>lt;sup>3</sup>. Arizona, California and Hawaii only: see DIRECTIONS FOR USE FALLOWBED USE ON TRANSPLATED MELON, PEPPER AND TOMATO BEDS on Panther SC – TNVV use instructions.

<sup>&</sup>lt;sup>4</sup> Transplanted apple, apricot, avocado, bushberries (including blueberry), cherry, fig, grape, grapefruit, lemon, nectarine, nut trees (including pistachio), olive, orange, peach, pear, plum (including dried plum), and tangerine can be planted 2 months after application of 2 to 12 fluid ounces per acre of this product.

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

SECTION A	ORGANIC	SOIL	PANTHER SC	
COMMON NAME	SCIENTIFIC NAME	MATTER	TYPE	HERBICIDE RATE
Carpetweed	Mollugo verticillata	Up to 5%	All Soil Types	2 oz/A
Chickweeds,		1		
Common	Stellaria media	1		
Mouseear	Cerastium vulgatum	1		
Dandelion	Taraxacum officinale	1		
Eclipta	Eclipta prostrata	1		
Eveningprimrose, Cutleaf	Oenothera laciniata	1		
Field Pennycress	Thlaspi arvense	1		
Florida Pusley	Richardia scabra	1		
Henbit	Lamium amplexicaule	1		
Lambsquarters, Common	Chenopodium album	1		
Little Mallow	Malva parviflora	1		
Marestail/Horseweed	Conyza canadensis	1		
Mayweed/False Chamomile	Matricaria maritima	1		
Nightshades,	-	1		
Black	Solanum nigrum	1		
Eastern Black	Solanum ptycanthum	1		
Hairy	Solanum sarrachoides	1		
Pigweeds,		1		
Redroot	Amaranthus retroflexus	1		
Smooth	Amaranthus hybridus	1		
Spiny Amaranth	Amaranthus spinosus	]		
Tumble	Amaranthus albus	]		
Prickly Lettuce	Lactuca serriola	]		
Prickly Sida (Teaweed)	Sida spinosa	]		
Puncturevine	Tribulus terrestris	]		
Purslane, Common	Portulaca oleracea	]		
Radish, Wild	Raphanus raphanistrum	]		
Redmaids	Calandrinia ciliata var. menziessii	]		
Shepherd's-purse	Capsella bursa-pastoris	]		
Smallflower Morningglory	Jacquemontia tamnifolia	]		
Sowthisle, Prickly	Sonchus asper			
Spotted Spurge	Euphorbia maculata	]		
Venice Mallow	Hibiscus trionum			

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

#### **SECTION B**

All weeds listed in Section	A plus:	ORGANIC	SOIL	PANTHER SC
COMMON NAME	SCIENTIFIC NAME	MATTER	TYPE	HERBICIDE RATE <sup>2</sup>
Coffee Senna	Cassia occidentalis	Up to 3%	All Soil Types	2 oz/A Cotton and Dry
Common Ragweed <sup>1</sup>	Ambrosia artemisiifolia	7		Bean
False Chamomile	Tripleurospermum maritima			2.5 oz/A Field Corn and
Florida Beggarweed	Desmodium tortuosum			Soybean
Golden Crownbeard	Verbesina encelioides			3 oz/A Peanut and all
Hairy Indigo	Indigofera hirsuta			other labeled crops
Hemp Sesbania	Sesbania exaltata	3 to 5%	Coarse and	2 oz/A Cotton and Dry
Jimsonweed	Datura stramonium		Medium Soils	Bean
Kochia	Kochia scoparia		(sandy loam, loamy	2.5 oz/A Field Corn and
London Rocket	Sisymbrium irio		sand, loamy, silt-loam,	
Morningglories,3				3 oz/A Peanut and all
Entireleaf	Ipomoea hederacea var. integriuscula		clay loam)	other labeled crops
lvyleaf	Ipomoea hederacea	7		
Red/Scarlet	Ipomoea coccinea	7		
Tall	Ipomoea purpurea			
Mustard, Wild	Brassica kaber		Fine Soils: (silty clay,	2 oz/A Cotton and Dry
Palmer Amaranth	Amaranthus palmeri		silty clay, loam, clay,	Bean
Spurred Anoda	Anoda cristata		clay loam)	3 oz/A Field Corn,
Tropic Croton	Croton glandulosus			Peanut, Soybean, and
Waterhemps,1				all other labeled crops
Common	Amaranthus rudis			
Tall	Amaranthus tuberculatus			
Wild Poinsettia	Euphorbia heterophylla			
Yellow Rocket	Barbarea vulgaris			

A postemergence herbicide, such as Cobra®, Phoenix™ or glyphosate (Roundup Ready® soybeans only) may be needed following a preemergence application of this product to adequately control common ragweed or waterhemp in soybean fields with heavy pressure.

2 Due to differences in crop canopy timing between peanuts and soybeans, 3 fluid ounces per acre of this product should be used 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 fluid ounces per acre can be applied in peanuts. This product will provide residual control of these weeds at 2 fluid ounces per acre when applied under a cotton canopy.

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

Table - Weeds Suppressed by Residual Activity of This Product

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

# 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.]

#### **FALL BURNDOWN AND FALLOW SEEDBED PROGRAMS**

This product [, at 2 to 4 fluid ounces per acre] 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
Program 1 <sup>1</sup>	
Panther SC	2 to 3 oz/A
Plus	
Glyphosate	0.5 to 1.0 lb ai/A (equivalent to 1 to 2 pt/A of Credit® 41 Extra or Roundup Original®)
Plus	
2,4-D LVE (2,4-D for use on	0.5 to 1.0 lb ai/A (equivalent to 1 to 2 pt/A of 2,4-D 4 LVE)
preplant soybeans only)	
Plus	
NIS + AMS	0.5% v/v + 17 lbs/100 gals of water
or	

or	
Program 2 <sup>1</sup>	
Panther SC Plus	2 to 3 oz/A
Glyphosate <b>Plus</b>	0.5 to 1.0 lb ai/A (equivalent to 1 to 2 pt/A of Credit® 41 Extra or Roundup Original)
COC <sup>2</sup>	1pt/A
or NIS + AMS	or 0.5% v/v + 17 lbs/100 gals of water

or	
Program 3 <sup>1</sup>	
Panther SC	2 to 3 oz/A
Plus	
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 nt/A

Dicamba (Clash<sup>®</sup>, Banvel<sup>®</sup> or Diablo<sup>®</sup>), at 0.188 pounds AI per acre (6 fluid ounces per acre of Banvel 4 or Diablo) 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 eveningprimrose and Carolina geranium.

Table - Weeds Controlled by Fall and Spring Preplant Burndown Programs

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

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

#### 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 fluid ounces per acre] with labeled preplant burndown herbicides to enhance the speed of burndown and increase weed spectrum.

This product can be used [at 1 to 3 fluid ounces per acre [1 to 2 fluid ounces per acre]] 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.

<sup>&</sup>lt;sup>2</sup> 1 pound Al per acre of 2,4-D LVE (equivalent to 2 pints per acre of 2,4-D 4 LVE) should be used for control of emerged dandelion.

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

<sup>&</sup>lt;sup>4</sup> Program 1 should be used to control cutleaf eveningprimrose that are nearing 12 inches in height or are past the rosette stage. Programs 2 or 3 should be used to control cutleaf eveningprimrose that are 12 inches or less and in the rosette stage.

# 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.
- · Do not perform any tillage operation after application or residual weed control will be reduced.
- This product can be used [at 1 to 2 fluid ounces per acre] 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 fluid ounceper acre is used and 21 days when a rate of this product at 1.5 to 2 fluid ounces per acre 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.

#### **FALL BURNDOWN PROGRAMS**

This product [, at 2 to 4 fluid ounces per acre,] 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 fluid ounces 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 fluid ounces per acre] 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.]

#### **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]

#### 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.]

#### **FALL BURNDOWN PROGRAMS**

This product can be used [at 2 to 4 fluid ounces 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.

#### **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 fluid ounces per acre,] 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 fluid ounces per acre,] can be used in spring in combination with labeled burndown herbicides to control emerged weeds and provide residual weed 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 fluid ounces of this product per acre during a single application.
- Do not apply more than 4 fluid ounces of this product per acre during a single growing season.
- Do not make a sequential application of this product within 30 days of the first application of this product.
- · Do not apply within 60 days of harvest.

#### **ENVIRONMENTAL CONDITIONS AND BIOLOGICAL PERFORMANCE**

#### Hooded, Shielded and Layby Application

For best results, this product should be applied 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. Applications should not be made if rain is expected within one hour of application or postemergence efficacy may be reduced. Rainfall within one hour of application will not adversely affect residual activity.

#### HERBICIDE RATE

#### Hooded, Shielded and Layby Application

For postemergence weed control, this product should be applied through a hooded or shielded sprayer or at layby, at 2 fluid ounces per acre, in combinations with MSMA or at 1 to 2 fluid ounces per acre 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)
COMMON NAME	SCIENTIFIC NAME	2 oz/A
Bindweed, Field <sup>1</sup>	Convolvulus arvensis	4
Carpetweed	Mollugo verticillata	4
Chickweed, Common	Stellaria media	4
Cocklebur, Common	Xanthium strumarium	4
Florida Beggarweed	Desmodium tortuosum	2
Hemp Sesbania	Sesbania exaltata	6
limsonweed	Datura stramonium	4
_ambsquarters, Common	Chenopodium album	4
Morningglories,		
Entireleaf	Ipomoea hederacea var. integriuscula	4
lvyleaf	Ipomoea hederacea	4
Pitted	Ipomoea lacunose	4
Red	Ipomoea coccinea	4
Tall	Ipomoea purpurea	2
Mustard, Wild	Brassica kaber	6
Nightshades,		
Black	Solanum nigrum	4
Eastern Black	Solanum ptycanthum	4
Hairy	Solanum sarrachoides	4
Pigweeds,		
Palmer Amaranth	Amaranthus palmeri	4
Redroot	Amaranthus retroflexus	4
Smooth	Amaranthus hybridus	4
Plantain, Broadleaf	Plantago major	6
Prickly Sida (Teaweed)	Sida spinosa	4
Purslane, Common	Portulaca oleracea	2
Ragweeds,		
Common	Ambrosia artemisiifolia	2

Giant	Ambrosia trifida	4
Rice Flatsedge	Cyperus iria	2
Sicklepod	Senna obtusifolia	4
Smartweeds,		
Ladysthumb	Polygonum persicaria	4
Pale	Polygonum lapathifolium	4
Pennsylvania	Polygonum pensylvanicum	4
Spotted Spurge	Euphorbia maculata	4
Velvetleaf	Abutilon theophrasti	4
Venice Mallow	Hibiscus trionum	2
Waterhemps,		
Common	Amaranthus rudis	2
Tall	Amaranthus tuberculatus	2

<sup>&</sup>lt;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 should 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. Mixing compatibility qualities should be verified 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 and should not be used.

#### 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 should be clean and in good repair. Nozzles should meet manufacturer's specifications for spray pattern and placement on spray boom and should 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	Х	X <sup>1</sup>
MSMA	Annual Grasses Yellow Nutsedge	Х	Х

<sup>1</sup>For use only in cotton with the Roundup Ready gene.

#### **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 fluid ounces of this product per acre during a single application.
- Do not apply more than 2 fluid ounces of this product per acre during a single growing season.

[Arizona, California, Colorado, Hawaii, Idaho, 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, Oregon and Washington only: For weed suppression in garbanzo beans see DIRECTIONS FOR USE FOR CHICKPEA (GARBANZO BEAN) use instructions on Panther SC - TNVV.]

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 should 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**. This product should be tank mixed 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

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

#### **HARVEST AID**

#### RESTRICTIONS AND LIMITATIONS

- · Do not apply more than 3 fluid ounces of this product per acre during a single application.
- Do not apply more than 3 fluid ounces of this product per acre during a single growing season.
- · Do not harvest within 5 days of application.

Desiccation from this product requires the addition of an agronomically approved adjuvant to the spray mixture. A methylated seed oil which contains at least 15% emulsifiers and 80% oil at 2% v/v should be used. A spray grade nitrogen source (either ammonium sulfate at 2 to 2.5 pounds 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 should meet manufacturer's gallonage and pressure specifications for postemergence application.

#### [DIRECTIONS FOR USE FOR WEED SUPPRESSION IN DRY BEANS

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

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 fluid ounces of this product per acre during a single application.
- Do not apply more than 1.5 fluid ounces of this product per acre during a single growing season.

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 should 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 Fluid Ounces per Acre. 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.

Read tank mix product label for rates 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 suppress the weeds listed in Table - Weeds Suppressed by Residual Activity of This Product at 1.5 Fluid Ounces per Acre. This label makes no claims concerning other weed Species.

Table - Weeds Suppressed by Residual Activity of This Product at 1.5 Fluid Ounces per Acre

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

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

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

#### RESTRICTIONS AND LIMITATIONS

- 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 fluid ounces 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 apply more than [2 fluid ounces] [3 fluid ounces] of this product per acre during a single growing season.
- · Do not irrigate between emergence and 2-leaf corn
- · Do not use on popcorn, sweet corn or corn grown for seed.

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

- Apply this product, at 2 to 3 fluid ounces 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 fluid ounces 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 fluid ounces 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 recommended application pressure and recommended adjuvant systems.

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

This product, at 1 fluid ounce per acre, may be tank mixed with glyphosate (Roundup<sup>®</sup>) to increase the speed of burndown activity compared to glyphosate applied alone. Residual weed control will not be provided at rates lower than 2 fluid ounces 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 fluid ounce per acre. Applications of this product at 1 fluid 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 recommendations.

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

TANK	MIX PARTNERS <sup>1</sup>
2,4-D LVE	Paraquat
Atrazine	Python <sup>®</sup> Resolve <sup>®</sup>
Basis <sup>®</sup>	Resolve <sup>®</sup>
Dicamba	Simazine
Express <sup>®</sup>	Spitfire <sup>™</sup> Victory <sup>®</sup>
Glyphosate	Victory®
Hornet <sup>®</sup>	Weedmaster <sup>®</sup>
Metribuzin	

<sup>&</sup>lt;sup>1</sup> Refer to tank mix product labels for specific recommendations.

#### **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 and should not be used with this product, unless supplemental labeling, provided by Nufarm, is followed.

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

#### **WEED CONTROL**

#### RESTRICTIONS AND LIMITATIONS

- Do not apply more than 2 fluid ounces of this product per acre during a single application.
- · Do not apply more than 2 fluid ounces of this product per acre during a single growing season.
- [For use in Idaho, Montana, Oregon and Washington only.]

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. User should 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 fluid ounces of this product per acre during a single application.
- Do not apply more than 3 fluid ounces of this product per acre during a single growing season.
- · Do not harvest within 5 days of application.

Desiccation from this product requires the addition of an agronomically approved adjuvant to the spray mixture. A methylated seed oil which contains at least 15% emulsifiers and 80% oil at 1 quart per acre should be used. 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 fluid ounces 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 recommendations for postemergence application.

#### **DIRECTIONS FOR USE IN FLAX**

#### HARVEST AID

#### RESTRICTIONS AND LIMITATIONS

- Do not apply more than 3 fluid ounces of this product per acre during a single application.
- Do not apply more than 3 fluid ounces of this product per acre during a single growing season.
- Do not harvest within 5 days of application.

Desiccation from this product requires the addition of an agronomically approved adjuvant to the spray mixture. A methylated seed oil which contains at least 15% emulsifiers and 80% oil at 1 quart per acre should be used. 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 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 fluid ounces 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 recommendations for postemergence application.

#### **DIRECTIONS FOR USE IN LENTILS**

#### **HARVEST AID**

#### **RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 3 fluid ounces of this product per acre during a single application.
- Do not apply more than 3 fluid ounces of this product per acre during a single growing season.
- · Do not harvest within 5 days of application.

Desiccation from this product requires the addition of an agronomically approved adjuvant to the spray mixture. A methylated seed oil which contains at least 15% emulsifiers and 80% oil at 1 quart per ace should be used. A spray grade nitrogen source (either ammonium sulfate at 2 to 2.5 pounds 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 paraguat will increase control of emerged weeds and aid in harvest.

#### TIMING TO LENTILS

Apply this product, at 1.5 to 2 fluid ounces 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 to 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 recommendations for postemergence application.

Table - Weeds Controlled by Residual Activity of This Product

BROADLEAF WEED SPECIES		ORGANIC	SOIL	[PANTHER SC]
COMMON NAME	SCIENTIFIC NAME	MATTER	TYPE	HERBICIDE RATE
Bristly Starbur	Acanthospermum hispidum	Up to 5%	All Soil Types	4 oz/A
Carpetweed	Mollugo verticillata			
Chickweeds,				
Common	Stellaria media			
Mouseear	Cerastium vulgatum			
Coffee Senna	Cassia occidentalis			
Copperleaf, Hophornbeam	Acalypha ostryifolia			
Dandelion	Taraxacum officinale			
Dodder (suppression only) <sup>1</sup>	Cuscuta spp.			
Eclipta	Eclipta prostrata			
Eveningprimrose, Cutleaf	Oenothera laciniata			
False Chamomile	Tripleurospermum maritima			
Fiddleneck, Coast	Amsinckia menziesii			
Field Pennycress <sup>2</sup>	Thlaspi arvense			
Fleabane, Hairy	Conyza bonariensis			
Flixweed	Descurainia spophia			
Florida Beggarweed	Desmodium tortuosum			
Florida Pusley	Richardia scabra			
Golden Crownbeard	Verbesina encelioides			
Groundsel, Common	Senecio vulgaris			
Hairy Indigo	Indigofera hirsute			
Hemp Sesbania	Sesbania exaltata			
Henbit	Lamium amplexicaule			
Jimsonweed	Datura stramonium			
Kochia	Kochia scoparia			
Lambsquarters, Common	Chenopodium album			
Little Mallow	Malva parviflora			
London Rocket	Sisymbrium irio			
Marestail/Horseweed	Conyza canadensis			
Mayweed/False Chamomile	Matricaria maritima			
Morningglories,				
Entireleaf	Ipomoea hederacea var. integriuscula			
lvyleaf	Ipomoea hederacea			
Red/Scarlet	Ipomoea coccinea			
Smallflower	Jacquemontia tamnifolia			
Tall	Ipomoea purpurea			

Mustard,	
Tansy	Descurainia pinnata
Tumble	Sisymbrium altissimum
Wild	Brassica kaber
Nettle, Burning	Urtica urens
Nightshades,	
Black	Solanum nigrum
Eastern Black	Solanum ptycanthum
Hairy	Solanum sarrachoides
Pigweeds,	
Palmer Amaranth	Amaranthus palmeri
Redroot	Amaranthus retroflexus
Smooth Spiny Amaranth	Amaranthus hybridus Amaranthus spinosus
Tumble	Amaranthus albus
Prickly Lettuce (China Lettuce)	Lactuca serriola
Prickly Sida (Teaweed)	Sida spinosa
Puncturevine	Tribulus terrestris
Purslane,	Tribulus terrestris
Common	Portulaca oleracea
Horse	Trianthema portulacastrum
Radish, Wild	Raphanus raphanistrum
Ragweed, Common	Ambrosia artemisiifolia
Redmaids	Calandrinia ciliata var. menziesii
Russian Thistle	Salsola iberica
Shepherd's-purse	Capsella bursa-pastoris
Smartweeds,	Capociia sarea pacierio
·	Delugionum negicegia
Ladysthumb	Polygonum persicaria
Pennsylvania	Polygonum pensylvanicum
Smellmelon	Cucumis melo
Sowthistle, Prickly <sup>2</sup>	Sonchus asper
Spotted Spurge	Euphorbia maculata
Spurred Anoda	Anoda cristata
Tropic Croton	Croton glandulosus
Velvetleaf	Abutilon theophrasti
Venice Mallow	Hibiscus trionum
Waterhemps,	Thorseas thoriam
·	
Common	Amaranthus rudis
Tall	Amaranthus tuberculatus
White Cockle	Silene latifolia
Wild Poinsettia	Euphorbia heterophylla
Wormwood, Biennial	Artemisia biennis
Yellow Rocket	Barbarea vulgaris
GRASS WEED SPECIES	1
Barnyardgrass	Echinochloa crus-galli
Bluegrass, Annual	Poa annua
Crabgrass, Large	Digitaria sanguinalis
Foxtail, Giant	Setaria faberi
Goosegrass	Eleusine indica
Lovegrass, California	Eragrostis diffusa
Panicums,	
Fall	Panicum dichotomiflorum
Texas	Panicum texanum

Ryegrass, Italian Lolium multiflorum		
signalgrass, Broadleaf Brachiaria platyphy	7	7

<sup>&</sup>lt;sup>1</sup>This product at 4 fluid ounces 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 should expect and accept this prior to using this tank mix.

#### **DIRECTIONS FOR USE IN PEANUT**

#### RESTRICTIONS AND LIMITATIONS

- · Do not apply more than 3 fluid ounces of this product per acre during a single growing season.
- Do not apply more than 2 fluid ounces 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**].
- · Do not irrigate when peanuts are cracking
- Do not graze treated fields or feed treated hay to livestock.

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. Application should not be made 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 recommended 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, such as 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 pounds 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 fluid ounces per acre, can be applied within 2 days of planting to control common ragweed, tropic croton and entireleaf, ivyleaf and tall/scarlet morningglories.

Cool temperatures near emergence (2 consecutive nighttime lows in the 50's F) in combination with heavy rainfall may result in severe crop injury. This product, at 3 fluid ounces per acre, should only be used 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), Sonalan®, Dual® (metolachlor), pendimethalin or Frontier®.

#### ADDITIONAL RESIDUAL GRASS CONTROL: TANK MIXED

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

<sup>&</sup>lt;sup>2</sup> Not for use in California.

#### **DIRECTIONS FOR USE IN SOYBEAN**

#### RESTRICTIONS AND LIMITATIONS

- Do not apply more than 3 fluid ounces of this product per acre during a single growing season.
- [Do not tank mix this product with acetochlor (Warrant®), alachlor (Micro-Tech®), 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 graze treated fields or feed treated hay to livestock.

#### **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. Application should not be made 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 recommended 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 fluid ounce per acre, may be tank mixed with glyphosate (Roundup<sup>®</sup> or Credit<sup>®</sup> 41 Extra) to increase the speed of burndown activity compared to glyphosate applied alone. Residual weed control will not be provided at rates lower than 2 fluid ounces 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 fluid 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 recommendations.

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		
Select Max®	Annual Grasses		
Scepter® 70DG	Cocklebur		
	Common Sunflower		
Spitfire <sup>™</sup> / Weedmaster <sup>®</sup>	Marestail		
	Giant Ragweed		
	Dandelion		

<sup>&</sup>lt;sup>1</sup>Refer to tank mix product labels for specific recommendations for control of emerged weeds present.

#### ADDITIONAL RESIDUAL BROADLEAF CONTROL

This product can be tank mixed with metribuzin, FirstRate<sup>®</sup>, Lorox<sup>®</sup>, Pursuit Plus<sup>®</sup>, Python<sup>®</sup>, Squadron<sup>®</sup>, Scepter or Steel<sup>®</sup> for additional broadleaf control.

#### ADDITIONAL RESIDUAL GRASS CONTROL

This product can be tank mixed with pendimethalin or Command® for additional grass control. Tank mixes with flufenacet (Axiom® or Domain®), metolachlor (Dual® products or Boundary®), dimethenamid (Frontier® or Outlook®) or alachlor (Micro-Tech® or IntRRo®), 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 fluid ounces per acre to reduce early season weed competition from waterhemp, velvetleaf, nightshade and morningglories as well as other weeds listed in Tables 2 and 3 in Roundup Ready® programs. A sequential post emergence application of glyphosate will be required to control weeds not controlled by this product.

#### **DIRECTIONS FOR USE IN SUGARCANE**

#### RESTRICTIONS AND LIMITATIONS

- Do not apply more than 8 fluid ounces of this product per acre per application.
- Do not make a sequential application within 14 days of the first application.
- Do not apply more than 12 fluid ounces of this product per acre during a single growing season.
- 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, such as 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 <u>before the crop emerges</u>.

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

Post-directed applications should only be made to upright sugarcane varieties after the sugarcane has exceeded 24 inches in height and has begun to joint. Post-directed applications should not be made 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	4 oz/A
Bindweed, Field <sup>1</sup>	Convolvulus arvensis	4	8
Carpetweed	Mollugo verticillata	4	4
Cocklebur, Common	Xanthium strumarium	4	4
Florida Beggarweed	Desmodium tortuosum	2	2
Hemp Sesbania	Sesbania exaltata	6	8
Jimsonweed	Datura stramonium	4	4
Lambsquarters, Common	Chenopodium album	4	4
Morningglories,	· · · · · · · · · · · · · · · · · · ·		1
Entireleaf	Ipomoea hederacea var. integriuscula	-	4
lvyleaf	Ipomoea hederacea	4	4
Pitted	Ipomoea lacunosa	4	6
Red	Ipomoea coccinea	-	4
Tall	lpomoea purpurea	2	4
Mustard, Wild	Brassica kaber	6	6
Pigweeds,	<u>'</u>		1
Palmer Amaranth	Amaranthus palmeri	4	6
Redroot	Amaranthus retroflexus	4	6
Smooth	Amaranthus hybridus	4	6
Plantain, Broadleaf	Plantago major	6	6
Prickly Sida	Sida spinosa	4	6
Purslanes,	· ·		
Common	Portulaca oleracea	2	4
Rock	Calandrinia spp.	-	2
Ragweeds,			
Common	Ambrosia artemisiifolia	2	2
Giant	Ambrosia trifida	4	4
Rice Flatsedge	Cyperus iria	2	4
Sicklepod	Senna obtusifolia	4	4
Smartweeds,			
Ladysthumb	Polygonum persicaria	4	4
Pale	Polygonum lapathifolium	4	4
Pennsylvania	Polygonum pensylvanicum	4	4
Spotted Spurge	Euphorbia maculata	4	4
Velvetleaf	Abutilon theophrasti	4	6
Venice Mallow	Hibiscus trionum	2	2
Waterhemps,	1		ı
Common	Amaranthus rudis	2	2
Tall	Amaranthus tuberculatus	2	2

Tall Amaranthus tuberculatus 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 recommendations.

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	Х		
atrazine	Pigweeds Cocklebur	Х	Х	Х
Asulox® <sup>3</sup>	Annual Grasses		Х	Х
Evik® <sup>4</sup>	Annual Grasses		Х	Х
glyphosate <sup>5</sup>	Annual and Perennial Weeds	Х		X
metribuzin <sup>6</sup>	Broadleaf Panicum Goosegrass		Х	Х
Sempra®	Purple Nutsedge Yellow Nutsedge	Х	X	Х
Weedmaster®	Annual and Perennial Broadleaf Weeds	Х		

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

#### 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.

<sup>&</sup>lt;sup>2</sup> Post-directed applications should only be made to upright sugarcane varieties after the sugarcane has exceeded 24 inches in height. Post-directed applications should not be made 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>&</sup>lt;sup>3</sup> Apply to sugarcane at least 24 inches tall.

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

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

Table - Weeds Controlled by Preemergence Application of This Product

COMMON NAME	SCIENTIFIC NAME	ORGANIC MATTER	SOIL TYPE	PANTHER SC HERBICIDE RATE
Bristly Starbur	Acanthospermum hispidum	Up to 10% <sup>1</sup>	All Soil	
Carpetweed	Mollugo verticillata		Types <sup>2</sup>	Sugarcane
Chickweeds,				6 to 8 oz/A
Common	Stellaria media			
Mouseear	Cerastium vulgatum			
Coffee Senna	Cassia occidentalis			To Maintain
Dandelion	Taraxacum officinale			Bare Ground
Eclipta	Eclipta prostrate			on Non-Crop
Eveningprimrose, Cutleaf	Oenothera laciniata			Areas of Farms
False Chamomile	Tripleurospermum maritima			6 to 12 oz/A
Filaree,	h and the			
Redstem	Erodium cicutarium			
Whitestem	Erodium moschatum			
Fiddleneck, Coast	Amsinckia menziesii			
Fleabane, Hairy	Conyza bonariensis	<del> </del>		
Field Pennycress <sup>3</sup>	<u> </u>			
· · · · · · · · · · · · · · · · · · ·	Thlaspi arvense			
Florida Beggarweed	Desmodium tortuosum			
Florida Pusley	Richardia scabra			
Golden Crownbeard	Verbesina encelioides			
Groundsel, Common	Senecio vulgaris			
Hairy Indigo	Indigofera hirsuta			
Hemp Sesbania	Sesbania exaltata			
Henbit	Lamium amplexicaule			
Jimsonweed	Datura stramonium			
Kochia	Kochia scoparia			
Lambsquarters, Common	Chenopodium album			
Mallow,	•			
Common (Cheeseweed)	Malva neglecta			
Little	Malva parviflora			
Horseweed/Marestail	Conyza canadensis			
Mayweed/False Chamomile	Matricaria maritima			
Morningglories,				
Entireleaf	Ipomoea hederacea var.integriuscula			
Ivyleaf	Ipomoea hederacea			
Red/Scarlet	Ipomoea coccinea			
Smallflower	Jacquemontia tamnifolia			
Tall	Ipomoea purpurea			
Mustards,				
London Rocket	Sisymbrium irio			
Tansey	Desurainia pinnata			
Tumble	Sisymbrium altissimum			
Wild				
	Brassica kaber Urtica urens			
Nettle, Burning	Unica urens			
Nightshades,				
Black	Solanum nigrum			
Eastern Black	Solanum ptycanthum			
Hairy	Solanum sarrachoides			
Pigweeds,				
Palmer Amaranth	Amaranthus palmed			
Redroot	Amaranthus retroflexus			
Smooth	Amaranthus hybridus			
Spiny Amaranth	Amaranthus spinosus			
Tumble	Amaranthus albus			
Prickly Lettuce (China Lettuce)	Lactuca serriola			
i nonly Lollace (Olina Lellace)	Lactada somula	1		İ

Dun etune de e	Tribudus tamastria	$\neg$
Purcturevine	Tribulus terrestris	-
Purslane,	Portulaca oleracea	-
Common Horse	Trianthema portulacastrum	$\dashv$
Radish, Wild	Raphanus raphanistrum	_
Ragweed, Common	Ambrosia artemisiifolia	_
Redmaids	Calandrinia ciliata var menziessi.	_
Redweed	Melochia corchorifolia	
Shepherd's-purse	Capsella bursa-pastoris	
Smellmelon	Cucumis melo	_
Sowthistle, Annual <sup>3</sup>	Sonchus oleraceus	$\dashv$
Spotted Spurge	Euphorbia maculata	
Spurred Anoda	Anoda cristata	
Thistle, Russian	Salsola iberica	
Tropic Croton	Croton glandulosus	7
Venice Mallow	Hibiscus trionum	7
Waterhemps,	·	7
Common	Amaranthus rudis	7
Tall	Amaranthus tuberculatus	
Wild Poinsettia	Euphorbia heterophylla	
White Cockle	Silene latifolia	
Wormwood, Biennial	Artemisia biennis	
Yellow Rocket	Barbarea vulgaris	
GRASS WEED SPECIES		
Barnyardgrass	Echinochloa crus-galli	
Bluegrass, Annual	Poa annua	
Crabgrass,		
Large	Digitaria sanquinalis	
Smooth	Digitaria ischaemum	
Foxtails,		
Bristly	Setaria verticillata	
Giant	Setaria faberi	
Green	Setaria viridis	
Yellow	Setaria glauca	
Goosegrass	Eleusine indica	
Guineagrass	Panicum maximum	
Johnsongrass, Seedling	Sorghum halepense	
Lovegrass, California	Eragrostis diffusa	
Panicum,		
Fall	Panicum dichotomiflorum	
Texas	Panicum texaum	
Ryegrass, Italian	Lolium multiflorum	
Signalgrass, Broadleaf	Brachiaria platyphylla	7
4	<u>l</u>	

<sup>&</sup>lt;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.

A maximum rate of this product at 6 fluid ounces per acre per application should be used on any soil that has a sand plus gravel content over 80% if bushes, trees or vines are under 3 years of age.

Not for use in California.

## **DIRECTIONS FOR USE IN SUNFLOWER AND SAFFLOWER**

## **HARVEST AID**

#### **RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 3 fluid ounces of this product per acre during a single application.
- Do not apply more than 3 fluid ounces of this product per acre during a single growing season.
- Do not harvest within 5 days of application.

Desiccation from this product requires the addition of an agronomically approved adjuvant to the spray mixture. A methylated seed oil which contains at least 15% emulsifiers and 80% oil at 1 quart per acre should be used. A spray grade nitrogen source (either ammonium sulfate at 2 to 2.5 pounds 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 fluid ounces 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 recommendations 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 fluid ounces of this product per acre during a single growing season.
- Do not apply postemergence to sweet potatoes.
- Do not use greenhouse grown transplants.
- Do not use transplants harvested more that 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.

## TIMING TO SWEET POTATOÉS

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**

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

## RESTRICTIONS AND LIMITATIONS

- Do not apply more than 2 fluid ounces of this product per acre during a single application.
- Do not apply more than 2 fluid ounces of this product per acre during a single growing season.

## 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, SC, SD, TN, VA or WA]
- [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, SC, SD, TN, VA or WA]
- [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 fluid ounces 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 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 recommended application pressure and recommended 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 fluid ounces 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 fluid ounces 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 pounds 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 should meet manufacturer's gallonage and pressure recommendations for postemergence application.

## **TIMING TO WHEAT**

Apply this product, at 1.5 to 2 fluid ounces 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 recommends tank mixing with glyphosate.

# DIRECTIONS FOR USE TO MAINTAIN BARE GROUND ON NON-CROP AREAS OF FARMS

#### **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.

This product, when used as directed, can be used on farms 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 fluid ounces 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 fluid ounces (0.188 to 0.38 pound Al per acre) of this product per broadcast acre as a preemergence application. Preemergence (to weed emergence) applications of this product should be made 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 fluid ounces (0.188 to 0.38 pound 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 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. A tank mix partner should be used in combination with this product for the postemergence control of weeds larger than 2 inches. Recommended 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.

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

Glyphosate	2,4-D	Cheetah	Paraquat

## 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 **CHEMTREC (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 products labeling for the applicable "No refillable" or "Refillable" designation. Follow the container disposal [handling] instructions below that apply to your container type / size."

[Note to Reviewer: The bracketed section headers will be included when multiple container types / sizes are listed on the label.]

[Nonrefillable Containers 5 gallons or less:] Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** 

Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 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 or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

[Nonrefillable containers larger than 5 gallons:] Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. If recycling or reconditioning not available, puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke. Triple rinse or pressure rinse container (or equivalent) 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. Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

[Refillable containers larger than 5 gallons:] Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

## 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. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, 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 the 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.

(RV050115)

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## **Optional Marketing Claims:**

Nufarm Grow a better tomorrow. Grow a better tomorrow.

# [PANTHER SC HERBICIDE - TNVV]

[For use in Tree Nut, Vine, and Vegetables Market Segment]

GROUP 14 HERBICIDE

# PANTHER<sup>™</sup> SC – TNVV HERBICIDE

FOR CONTROL AND/OR SUPPRESSION OF CERTAIN WEEDS IN ALFALFA, ALMOND, ARTICHOKE, ASPARAGUS, BUSHBERRIES, CABBAGE AND CHINESE CABBAGE (TIGHT HEADED VARIETIES ONLY), CACTUS (PRICKLY PEAR), CELERY, COTTON, CUCURBIT VEGETABLES, DRY BEANS [{HARVEST AID ONLY)], FIELD CORN, FRUITING VEGETABLES (INCLUDING OKRA), GARLIC, GRAPE, HOPS, MINT, NUT TREES (INCLUDING PISTACHIO), ONION (DRY BULB), OLIVE, POME FRUIT, POMEGRANATE, POTATO, STONE FRUIT, STRAWBERRY, 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

**ACTIVE INGREDIENT:** 

\*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 Panther SC contains 4 pounds flumioxazin per gallon.

[For ≤ 5 Gallon Containers:] [Shake Well Before Use]
[For > 5 Gallon Containers:] [Shake Well, Agitate or Recirculate Before Use]

## **KEEP OUT OF REACH OF CHILDREN**

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 INSIDE BOOKLET FOR ADDITIONAL PRECAUTIONARY STATEMENTS

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

EPA REG. NO. 71368-RRG EPA EST. NO. MANUFACTURED FOR NUFARM INC. 11901 S. AUSTIN AVE. ALSIP, IL 60803



**NET CONTENTS:** 

[Designation as "NONREFILLABLE" or "REFILLABLE" for containers ≥ 5 GAL]

# PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Harmful if inhaled or absorbed through the skin. Causes moderate eye irritation. Avoid breathing spray mist. Avoid contact with skin, eyes or clothing.

## **HOT LINE NUMBER**

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.

## PERSONAL PROTECTIVE EQUIPMENT (PPE):

Some of the materials that are chemical-resistant to this product are listed below.

**Applicators and other handlers must wear:** long-sleeved shirt and long pants, chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride, shoes and socks.

For aerial application to artichoke 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).

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:**

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- 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 maybe 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.

This pesticide is toxic to plants and should be used 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, such as 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.

## PHYSICAL OR CHEMICAL HAZARDS

Do not mix or allow coming in contact with oxidizing agent. Hazardous chemical reaction may occur.

## **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, such as 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 the treated area until sprays have dried.

## **RISKS OF USING THIS PRODUCT**

The Buyer and User (referred to collectively herein as "Buyer") of this product should 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 should 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 SHOULD NOT 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.

## RESISTANCE MANAGEMENT

This product is a Group 14 herbicide. Any weed population may contain or develop plants naturally resistant to this product and other Group 14 herbicides. Weed species with acquired resistance to Group 14 herbicides may eventually dominate the weed population if Group 14 herbicides are used repeatedly in the same field or in successive years as the primary method of control for targeted species. This may result in partial or total loss of control of those species by this product or other Group 14 herbicides.

To delay herbicide resistance consider:

- Avoiding the consecutive use of this product or other target site of action Group 14 herbicides that might have a similar target site of action, on the same weed species.
- Using tank mixtures or premixes with herbicides from different target site of action Groups as long as the involved products are all registered for the same use, have different sites of action and are both effective at the tank mix or prepack rate on the weed(s) of concern.
- Basing herbicide use on a comprehensive Integrated Pest Management (IPM) program.
- Monitoring treated weed populations for loss of field efficacy.
- Contacting your local extension specialist, certified crop advisors and/or manufacturer for herbicide resistance management and/or integrated weed management recommendations for specific crops and resistant weed biotypes.

For further information or to report suspected resistance, you may contact Nufarm at (800) 345-3330.

## **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.

Read and follow the entire label of each product to be used in the tank mix with this product.

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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)

## **DIRECTIONS FOR USE IN FALLOW LAND**

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	Tinning to Alfalfa	x
	Timing to Weeds	X
DIREC	CTIONS FOR USE IN ARTICHOKE	
	Restrictions and Limitations	x
	Timing to Artichoke	x
	Timing to Weeds	x
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	Restrictions and Limitations	X
	Timing to Asparagus	X
	Timing to Weeds	X
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	Timing to Celery	
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[Weed Suppression	x]
Restrictions and Limitations	x]
[Timing to Dry Beans	x]
[Timing to Weeds	x]
[Additional Residual Grass Control	x
Harvest Aid	x
Restrictions and Limitations	x
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[DIRECTIONS FOR USE FOR WEED SUPPRESSION IN DRY BEANS]	
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Timing to Dry Beans	x]
[Timing to Weeds	x]
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## **USE INFORMATION**

## Uses:

- 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 noncrop areas that must be kept weed free.

Read tank mix product label for rates 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 claimed in crop specific use directions. This label makes no claims concerning control of other weed species.

## AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR.

The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator is responsible for considering all of these factors when making decisions. Where states have more stringent regulations, they should be observed.

## **RESTRICTIONS AND LIMITATIONS**

- Do not apply this product when weather conditions favor spray drift from treated areas.
- Do not apply during low-level inversion conditions, including fog.
- When applying by air, observe drift management restrictions and precautions listed under "AERIAL APPLICATION".
- Do not apply to frozen or snow covered soil.
- Mechanical incorporation into the soil will reduce residual weed control.
- Post directed and layby applications of this product should be applied only to healthy growing crops.
- 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 pears.
- Do not apply to powdery soils or soils that are susceptible to wind displacement unless irrigation can be applied immediately after application.

Spray equipment used to apply this product should not be used to apply other materials to any crop foliage, unless the proper cleanout procedures are followed. See "SPRAYER CLEANUP" for more information.

## **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**

This product should only be applied 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.

## Rainfast

This product is rainfast one hour after application. Postemergence 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 should 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 should 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 should 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, such as Roundup Power Max®, 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 such as cutleaf eveningprimrose and Carolina geranium. Mixing compatibility qualities should be verified by a jar test.

A spray grade nitrogen source (either ammonium sulfate at 2 to 2.5 pounds 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 PANTHER SC

When using this product and an adjuvant, such as in stale seed bed, layby, hooded/shielded or reduced tillage situations, a jar test should be performed 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. The water should be from the same source and temperature as which will be used in the spray tank mixing operation.
- 2. Add 1 milliliter of this product to the quart jar for every 3 fluid ounces of this product per acre being applied (4 milliliters if 12 fluid ounces 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 ounces) 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. If any of the following conditions are observed the choice of adjuvant should be questioned:
  - 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.

## **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 should be followed.

## **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 pounds of spray grade ammonium sulfate per 100 gallons of spray solution.
- 3. Agitate solution. Agitation should create a rippling or rolling action on the water surface.
- 4. 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.
- 5. Add any required adjuvants.
- 6. Fill spray tank to desired level with water. Agitation should continue until all spray solution has been applied.
- 7. Mix only the amount of spray solution that can be applied the day of mixing. This product should be applied within 6 hours of mixing.

## **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 such as "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, should 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 should be clean and in good repair. Nozzles should 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.

## **BAND APPLICATION**

When banding, use proportionately less water and this product per acre. The rate of this product required per acre, when applied as a banded application, can be calculated with the following formula:

Amount Needed per Acre for	_	Band Width in Inches	X	Rate per Broadcast Acre
Banded Application	_	Row Width in Inches	_ ^	rate per Broadcast riore

## **AERIAL APPLICATION**

Spray drift away from the site of application may cause damage to non-target vegetation. To minimize drift, apply the largest droplet size consistent with uniform coverage and satisfactory weed control. To obtain satisfactory application and avoid drift, the following directions must be observed:

- Do not apply during low-level inversion conditions (including fog), when winds are gusty or under other conditions that favor drift. Do not spray when wind velocity is less than 2 mph or more than 10 mph.
- Do not apply this product by air within 40 feet of non-target plants including non-target crops.
- Do not apply this product by air within 100 feet of emerged cotton crops.
- Do not apply this product by air within 40 feet of streams, wetlands, marshes, ponds, lakes and reservoirs.
- 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 generally afford more consistent weed control. Do not exceed the nozzle manufacturer's recommended 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, such as 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 recommendation. 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, you should 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 should the need arise.
- 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, such as 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, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the 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".

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 pounds 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.

Ammonium nitrate and/or limestone should not be used 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 fluid ounces of this product. A minimum of 6 pints of slurry of this product should be used to impregnate 2000 pounds 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:

ĺ	Fluid Ounces of This Product		Fluid Ounces of This Product	V	0.000		Pounds of Fertilizer
	Per Ton of Fertilizer	=	Per Acre	X	2,000	÷	Per Acre

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 recommended 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 SC - RC HERBICIDE RATES	CROPS	ROTATION INTERVALS
1 oz/A	Cotton (no-till or strip-till only)	14 days <sup>1</sup>
1.5 to 2 oz/A	Cotton (no-till or strip-till only)	21 days <sup>1</sup>
2 oz/A or less	Peanut, Soybean 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	Peanut, Soybean 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
Up to 4 oz/A	Sugarcane	immediately
	Cotton, Field Corn, Peanut, Rice, Sorghum, Soybean, Sunflower, Tobacco and Wheat	4 months

	Alfalfa, Canola, 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
	Transplanted on raised beds only: 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	Cotton, Field Corn, Peanut, Rice, Sorghum, Soybean, Sunflower, Tobacco and Wheat	9 months
	Alfalfa, Canola, Sugar Beet and all other crops not listed <sup>2</sup> Trees can be transplanted 2 months after an application of this product <sup>4</sup>	12 months if soil is tilled prior to planting 18 months if no tillage is performed

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

Table - Broadleaf Weeds Controlled by Residual Activity of This Product

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

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

<sup>&</sup>lt;sup>3</sup> Arizona, California and Hawaii only: see DIRECTIONS FOR USE FALLOWBED USE ON TRANSPLATED MELON, PEPPER AND TOMATO BEDS use instructions.

<sup>&</sup>lt;sup>4</sup> Transplanted apple, apricot, avocado, bushberries (including blueberry), cherry, fig, grape, grapefruit, lemon, nectarine, nut trees (including pistachio), olive, orange, peach, pear, plum (including dried plum), and tangerine can be planted 2 months after application of 2 to 12 fluid ounces per acre of this product.

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

## **SECTION B**

All weeds listed in Section A plus:		ORGANIC	SOIL	PANTHER SC	
COMMON NAME	SCIENTIFIC NAME	MATTER	TYPE	HERBICIDE RATE	
Coffee Senna	Cassia occidentalis	Up to 3%	All Soil Types	2 oz/A Cotton and Dry	
Common Ragweed	Ambrosia artemisiifolia	7		Bean	
False Chamomile	Tripleurospermum maritima			2.5 oz/A Field Corn	
Florida Beggarweed	Desmodium tortuosum			3 oz/A all other labeled	
Golden Crownbeard	Verbesina encelioides	7		crops	
Hairy Indigo	Indigofera hirsuta				
Hemp Sesbania	Sesbania exaltata	3 to 5%	Coarse and	2 oz/A Cotton and Dry	
Jimsonweed	Datura stramonium		Medium Soils	Bean	
Kochia	Kochia scoparia		(sandy loam, loamy		
London Rocket	Sisymbrium irio			3 oz/A all other labeled	
Morningglories,1			silt, sandy clay, sandy	crops	
Entireleaf	Ipomoea hederacea var. integriuscula		clay loam)		
lvyleaf	Ipomoea hederacea	7			
Red/Scarlet	Ipomoea coccinea	7			
Tall	Ipomoea purpurea				
Mustard, Wild	Brassica kaber		Fine Soils: (silty clay,	2 oz/A Cotton and Dry	
Palmer Amaranth	Amaranthus palmeri		silty clay, loam, clay,	Bean	
Spurred Anoda	Anoda cristata		clay loam)	3 oz/A Field Corn all	
Tropic Croton	Croton glandulosus			other labeled crops	
Waterhemps,		7			
Common	Amaranthus rudis	7			
Tall	Amaranthus tuberculatus				
Wild Poinsettia	Euphorbia heterophylla				
Yellow Rocket	Barbarea vulgaris				

<sup>&</sup>lt;sup>1</sup> Morningglory species are not adequately controlled on fine soils or soils with greater than 3% organic matter.

Table - Weeds Suppressed by Residual Activity of This Product

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

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

(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.]

## **FALL BURNDOWN AND FALLOW SEEDBED PROGRAMS**

This product [, at 2 to 4 fluid ounces per acre] can be used in the fall to provide residual weed control in fields that will be planted the following spring with field corn [(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]

Program 3<sup>1</sup>

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
Program 1 <sup>1</sup>	
Panther SC	2 to 3 oz/A
Plus	
Glyphosate	0.5 to 1.0 lb ai/A (equivalent to 1 to 2 pt/A of Credit <sup>®</sup> 41 Extra or Roundup Original <sup>®</sup> )
Plus	
NIS + AMS	0.5% v/v + 17 lbs/100 gals of water
or	
Program 2 <sup>1</sup>	
Panther SC	2 to 3 oz/A
Plus	
Glyphosate	0.5 to 1.0 lb ai/A (equivalent to 1 to 2 pt/A of Credit® 41 Extra or Roundup Original)
Plus	
COC <sup>2</sup>	1pt/A
or	or
NIS + AMS	0.5% v/v + 17 lbs/100 gals of water
or	

Panther SC 2 to 3 oz/A

Plus

COC 1 pt/A

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

Table - Weeds Controlled by Fall and Spring Preplant Burndown Programs

WEEDS CONTROLLED <sup>1</sup>		POSTEMERGENCE			
		Program 1	Program 2	Program 3	RESIDUAL
COMMON NAME	SCIENTIFIC NAME	Weeds 3 inches or less			
Chamomile, False	Matricaria maritime	Yes	Yes	No	Yes
Cheatgrass	Bromus tectorum	Yes	Yes	No	Yes
Chickweed, Common	Stellaria media	Yes	Yes	No	Yes
Chickweed, Mouseear	Cerastium vulgatum	Yes	Yes	No	Yes
Cockle, White	Silene latifolie	No	Yes	Yes	Yes
Dandelion	Taraxacum officinale	Yes	No	Yes <sup>2</sup>	Yes
Deadnettle, Purple	Lamium purpureum	Yes	Yes	Yes	Yes
Groundsel, Cressleaf	Senecio glabellus	Yes	Yes	-	Yes
Henbit	Lamium amplexicaule	Yes	Yes	Yes	Yes
Kochia	Kochia scoparia	Yes	Yes	Yes	Yes
Marestail/Horseweed	Conyza canadensis	Yes	Yes <sup>3</sup>	Yes	Yes
Mallow, Common	Malva Neglecta	Yes	Yes	No	Yes
Prickly Lettuce	Lactuca serriola	Yes	Yes	Yes	Yes
Wormwood, Biennial	Artemisia biennis	Yes	Yes	Yes	Yes
		We	eds 12 inc	ches or less	3
Canola, Volunteer	Brassica napus	Yes	Yes	Yes	Yes
Carolina Geranium	Geranium carolinianum	Yes	Yes	Yes	-
Eveningprimrose, Cutleaf4	Oenothera laciniata	Yes	Yes	Yes	Yes
Flixweed	Descurainia sophia	Yes	Yes	Yes	Yes
Mustard, Tansy	Descurainia pinnata	Yes	Yes	Yes	Yes
Mustard, Wild	Brassica kaber	Yes	Yes	Yes	Yes
Shepherd's-purse	Capsella bursa-pastoris		Yes	Yes	Yes

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

Dicamba (Clash®, Banvel® or Diablo®), at 0.188 pounds AI per acre (6 fluid ounces per acre of Banvel 4 or Diablo) can be added to Programs 1, 2 & 3 to assist in the control of emerged broadleaves. Refer to dicamba label for rotational restrictions.

<sup>&</sup>lt;sup>2</sup> 1 pound AI per acre of 2,4-D LVE (equivalent to 2 pints per acre of 2,4-D 4 LVE) should be used for control of emerged dandelion.

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

<sup>&</sup>lt;sup>4</sup> Program 1 should be used to control cutleaf eveningprimrose that are nearing 12 inches in height or are past the rosette stage. Programs 2 or 3 should be used to control cutleaf eveningprimrose that are 12 inches or less and in the rosette stage.

## **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. This product cannot be applied after planting field corn.

This product can be used [at 1 to 3 fluid ounces per acre] with labeled preplant burndown herbicides to enhance the speed of burndown and increase weed spectrum.

This product can be used [at 1 to 3 fluid ounces per acre [1 to 2 fluid ounces per acre]] in field corn and burndown programs. See "DIRECTIONS FOR USE IN FIELD CORN" for more information.

# DIRECTIONS FOR USE IN FALLOWBED USE ON TRANSPLANTED MELON, PEPPER AND TOMATO BEDS

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

## **RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 4 fluid ounces of this product per acre during a single application.
- Do not apply more than 4 fluid ounces of this product per acre during a single growing season.

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 should assume these risks before using this product.

## **TIMING TO CROP**

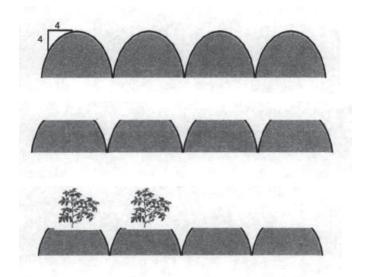
## Table - FALLOWBED USE PRIOR TO TRANSPLANTING

PANTHER SC HERBICIDE RATES	ADJUVANT	GPA	TRANSPLANTING INTERVAL
4 oz/A	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

- 1. Always read and follow all label directions when using any pesticide alone or in tank mix combinations.
- 2. 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.
- 3. Use only healthy transplants. Do not use on direct seeded crops.



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.

- 4. [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.]
- 5. This use pattern makes no claim for in-season weed control after the beds have been disturbed.
- 6. Do not apply when weather conditions favor spray drift.

# DIRECTIONS FOR USE IN FALL AND SPRING BURNDOWN PROGRAMS IN COTTON

[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 fluid ounces per acre] 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 fluid ounce per acre is used and 21 days when a rate of this product at 1.5 to 2 fluid ounces per acre is used. The field must contain the stubble from the previous crop.
- 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.

## **FALL BURNDOWN PROGRAMS**

This product [, at 2 to 4 fluid ounces per acre,] can be used in the fall to provide residual weed control in fields that will be planted the following spring with cotton [(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 fluid ounces 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. 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 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 fluid ounces per acre] 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 sunflowers 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.]

## 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]

## 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.]

## **FALL BURNDOWN PROGRAMS**

This product can be used [at 2 to 4 fluid ounces 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.

## **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 fluid ounces per acre,] 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 fluid ounces per acre,] 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 fluid ounces of this product per acre during a single application.
- Do not apply more than 8 fluid ounces of this product per acre during a single growing season.
- Do not make a sequential application of this product within 60 days of the first application of this product.
- Do not apply to alfalfa with greater than 6 inches of growth. Application will result in burning of treated leaves and stems. Users should 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 (crop burn and/or stunting should be expected and accepted 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 sheeping-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. Applications should be made as soon as possible after cutting and removing alfalfa to minimize injury to alfalfa growth.

## **Postemergence Dodder Suppression**

Apply this product at 4 fluid ounces per acre with an adjuvant for postemergence suppression of dodder. Tank mixes with Pursuit<sup>®</sup> Herbicide or Raptor<sup>®</sup> Herbicide will increase control.

## **DIRECTIONS FOR USE IN ARTICHOKE**

## **RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 4 fluid ounces of this product per acre during a single application on annual or perennial artichoke varieties after new planting.
- Do not apply more than 6 fluid ounces of this product per acre during a single application on perennial artichoke varieties after cutback.
- Do not apply more than 6 fluid ounces of this product per acre during a single growing season.
- · 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. Do not 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. Care should be taken 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. Application should not be made 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. Application should be made 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 fluid ounces of this product per acre during a single application.
- Do not apply more than 6 fluid ounces of this product per acre during a single growing season.
- 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 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. Applications should be made 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 recommended 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 pounds 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 ON CABBAGE AND CHINESE CABBAGE (TIGHT HEADED VARIETIES ONLY) ROW MIDDLES

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

## **DIRECTIONS FOR USE IN ROW MIDDLES**

## **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 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.
- Do not apply after crops are transplanted.
- Do not apply more than 4 fluid ounces of this product per acre during a single application.
- Do not apply more than 8 fluid ounces of this product per acre during a single growing season.
- · 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.

#### **RATE**

Up to 4 fluid ounces of this product per acre.

## **TIMING TO CROP**

This product may be applied at 4 fluid ounces 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 (PRICKLY PEAR)

#### RESTRICTIONS AND LIMITATIONS

- Do not apply more than 12 fluid ounces of this product per acre during a single application.
- Do not apply more than 12 fluid ounces of this product per acre during a 12 month period.
- A maximum rate of 6 fluid ounces per acre of this product per application should be used 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 fluid ounces per acre in a 12 month period 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.

This product should be applied 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 fluid ounces (0.188 to 0.38 pound 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**. Preemergence (to weed emergence) applications of this product should be made 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 fluid ounces (0.188 to 0.38 pound 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. This product should be tank mixed 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 recommended 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 should meet manufacturer's gallonage and pressure recommendations.

## **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 fluid ounces of this product per acre during a pre-transplant application.
- [In the state of California, use as pre-transplant application only.]
- Do not apply more than 3 fluid ounces of this product per acre during a post-transplant application.
- Do not apply more than 3 fluid ounces of this product per acre during a single growing season.
- · 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 fluid ounces 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.

Read tank mix product label for rates 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. 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.

## DIRECTIONS FOR USE FOR CHICKPEA (GARBANZO BEAN)

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

## **RESTRICTIONS AND LIMITATIONS**

- Do not apply more than [2] [1.5] fluid ounces of this product per acre during a single application.
- Do not apply more than [2] [1.5] fluid ounces of this product per acre during a single growing season.

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 should 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] [Weeds Suppressed by Residual Activity of This Product at 1.5 Ounces per Acre]. 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. Application should not be made 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 COTTON**

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

## RESTRICTIONS AND LIMITATIONS

- Do not apply more than 2 fluid ounces of this product per acre during a single application.
- Do not apply more than 4 fluid ounces of this product per acre during a single growing season.
- Do not make a sequential application of this product within 30 days of the first application of this product.
- · Do not apply within 60 days of harvest.

## **ENVIRONMENTAL CONDITIONS AND BIOLOGICAL PERFORMANCE**

## Hooded, Shielded and Layby Application

For best results, this product should be applied 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. Applications should not be made if rain is expected within one hour of application or postemergence efficacy may be reduced. Rainfall within one hour of application will not adversely affect residual activity.

## HERBICIDE RATE

## Hooded, Shielded and Layby Application

For postemergence weed control, this product should be applied through a hooded or shielded sprayer or at layby, at 2 fluid ounces per acre, in combinations with MSMA or at 1 to 2 fluid ounces per acre 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)	
COMMON NAME	SCIENTIFIC NAME	2 oz/A	
Bindweed, Field <sup>1</sup>	Convolvulus arvensis	4	
Carpetweed	Mollugo verticillata	4	
Chickweed, Common	Stellaria media	4	
Cocklebur, Common	Xanthium strumarium	4	
Florida Beggarweed	Desmodium tortuosum	2	
Hemp Sesbania	Sesbania exaltata	6	
Jimsonweed	Datura stramonium	4	
Lambsquarters, Common	Chenopodium album	4	
Morningglories,			
Entireleaf	Ipomoea hederacea var. integriuscula	4	
lvyleaf	Ipomoea hederacea	4	
Pitted	Ipomoea lacunose	4	
Red	Ipomoea coccinea	4	
Tall	Ipomoea purpurea	2	
Mustard, Wild	Brassica kaber	6	
Nightshades,			
Black	Solanum nigrum	4	
Eastern Black	Solanum ptycanthum	4	
Hairy	Solanum sarrachoides	4	
Pigweeds,			
Palmer Amaranth	Amaranthus palmeri	4	
Redroot	Amaranthus retroflexus	4	
Smooth	Amaranthus hybridus	4	
Plantain, Broadleaf	Plantago major	6	
Prickly Sida (Teaweed)	Sida spinosa	4	
Purslane, Common	Portulaca oleracea	2	
Ragweeds,			
Common	Ambrosia artemisiifolia	2	

Giant	Ambrosia trifida	4
Rice Flatsedge	Cyperus iria	2
Sicklepod	Senna obtusifolia	4
Smartweeds,		
Ladysthumb	Polygonum persicaria	4
Pale	Polygonum lapathifolium	4
Pennsylvania	Polygonum pensylvanicum	4
Spotted Spurge	Euphorbia maculata	4
Velvetleaf	Abutilon theophrasti	4
Venice Mallow	Hibiscus trionum	2
Waterhemps,		
Common	Amaranthus rudis	2
Tall	Amaranthus tuberculatus	2

<sup>&</sup>lt;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 should 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. Mixing compatibility qualities should be verified 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 and should not be used.

## **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 should be clean and in good repair. Nozzles should meet manufacturer's specifications for spray pattern and placement on spray boom and should 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	Х	X <sup>1</sup>
MSMA	Annual Grasses Yellow Nutsedge	Х	Х

<sup>&</sup>lt;sup>1</sup>For use only in cotton with the Roundup Ready gene.

# DIRECTIONS FOR USE IN CUCURBIT VEGETABLES (ROW MIDDLES)

Cucurbit Vegetables (Crop Group 9) including: 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

## **RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 4 fluid ounces of this product per acre during a single application.
- Do not apply more than 8 fluid ounces of this product per acre during a single growing season.
- · Do not use with an adjuvant.
- Plants should be grown on raised plastic mulched beds that are higher than the treated row middle. Arizona, California and Hawaii only: For fallow bed application on transplanted peppers and tomato beds see DIRECTIONS FOR USE FALLOWBED USE ON TRANSPLATED MELON, PEPPER AND TOMATO BEDS use instructions.
- 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 fluid ounces 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 fluid ounces 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 recommended rate and application parameters.

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. This product, when 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.

#### **IDIRECTIONS 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 fluid ounces of this product per acre during a single application.
- Do not apply more than 2 fluid ounces of this product per acre during a single growing season.

[Arizona, California, Colorado, Hawaii, Idaho, 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, 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 should 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**. This product should be tank mixed 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

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

#### **HARVEST AID**

#### **RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 3 fluid ounces of this product per acre during a single application.
- Do not apply more than 3 fluid ounces of this product per acre during a single growing season.
- · Do not harvest within 5 days of application.

Desiccation from this product requires the addition of an agronomically approved adjuvant to the spray mixture. A methylated seed oil which contains at least 15% emulsifiers and 80% oil at 2% v/v should be used. A spray grade nitrogen source (either ammonium sulfate at 2 to 2.5 pounds 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 should meet manufacturer's gallonage and pressure specifications for postemergence application.]

### **IDIRECTIONS FOR USE FOR WEED SUPPRESSION IN DRY BEANS**

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

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 fluid ounces of this product per acre during a single application.
- Do not apply more than 1.5 fluid ounces of this product per acre during a single growing season.

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 should 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 Fluid Ounces per Acre. 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.

Read tank mix product label for rates 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 suppress the weeds listed in Table - Weeds Suppressed by Residual Activity of This Product at 1.5 Fluid Ounces per Acre. This label makes no claims concerning other weed Species.

Table - Weeds Suppressed by Residual Activity of This Product at 1.5 Fluid Ounces per Acre

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

#### DIRECTIONS FOR USE IN FIELD CORN

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

#### RESTRICTIONS AND LIMITATIONS

- 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 fluid ounces 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 apply more than [2 fluid ounces] [3 fluid ounces] of this product per acre during a single growing season.
- Do not irrigate between emergence and 2-leaf corn
- · Do not use on popcorn, sweet corn or corn grown for seed.

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

- Apply this product, at 2 to 3 fluid ounces 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 fluid ounces 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 fluid ounces 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 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 recommended application pressure and recommended adjuvant systems.

#### INCREASING SPEED OF GLYPHOSATE BURNDOWN ACTIVITY

This product, at 1 fluid ounce per acre, may be tank mixed with glyphosate (Roundup<sup>®</sup>) to increase the speed of burndown activity compared to glyphosate applied alone. Residual weed control will not be provided at rates lower than 2 fluid ounces 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 fluid ounce per acre. Applications of this product at 1 fluid 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 recommendations.

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

TANK MIX PARTNERS <sup>1</sup>		
2,4-D LVE	Paraquat	
Atrazine	Python <sup>®</sup>	
Basis <sup>®</sup>	Resolve®	
Dicamba	Simazine	
Express <sup>®</sup>	Spitfire <sup>™</sup>	
Glyphosate	Victory <sup>®</sup>	
Hornet <sup>®</sup>	Weedmaster <sup>®</sup>	
Metribuzin		

Refer to tank mix product labels for specific recommendations.

#### 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 and should not be used with this product, unless supplemental labeling, provided by Nufarm, is followed.

#### **DIRECTIONS FOR USE IN GARLIC**

#### RESTRICTIONS AND LIMITATIONS

- Do not apply more than 6 fluid ounces of this product per acre during a single application.
- Do not apply more than 6 fluid ounces of this product per acre during a single growing season.

#### **TIMING TO GARLIC**

This product may be applied, at 6 fluid ounces per acre, to garlic prior to garlic emergence. Application should be made 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 fluid ounces of this product per acre during a single application.
- Do not apply more than 6 fluid ounces of this product per acre during a single growing season.
- 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.

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 fluid ounces per acre as a directed application after hops have reached a minimum of 6 feet in height for sucker control. Application should be directed to the lower 2 feet of the hops.

# TIMING TO HOPS FOR PREEMERGENCE WEED CONTROL

Apply this product at 6 fluid ounces per acre as a 1 to 1.5 foot band to each side of the hop row, to dormant hops January thru March 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 such as 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.

Read tank mix product label for rates 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. 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.

# DIRECTIONS FOR USE IN MINT (Peppermint and Spearmint)

#### **RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 4 fluid ounces of this product per acre during a single application.
- Do not apply more than 8 fluid ounces of this product per acre during a single growing season.
- 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 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.
- Do not apply a Fall application if roots and rhizomes are weak, thin or damaged.
- Do not apply to stands established longer than 3 years.
- Do not apply this product on mint in Southern Union County (south of Ladd Canyon) or Baker County in Oregon.

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 should assume these risks before using this product.

Tank mixes with labeled rates of paraquat are recommended 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 recommended 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 pound 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 such as 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		ORGANIC	SOIL	[PANTHER SC]
COMMON NAME	SCIENTIFIC NAME	MATTER	TYPE	HERBICIDE RATE
Bristly Starbur	Acanthospermum hispidum	Up to 5%	All Soil Types	4 oz/A
Carpetweed	Mollugo verticillata			
Chickweeds,				
Common	Stellaria media			
Mouseear	Cerastium vulgatum			
Coffee Senna	Cassia occidentalis			
Copperleaf, Hophornbeam	Acalypha ostryifolia			
Dandelion	Taraxacum officinale			
Dodder (suppression only) <sup>1</sup>	Cuscuta spp.			
Eclipta	Eclipta prostrata			
Eveningprimrose, Cutleaf	Oenothera laciniata			
False Chamomile	Tripleurospermum maritima			
Fiddleneck, Coast	Amsinckia menziesii			
Field Pennycress <sup>2</sup>	Thlaspi arvense			

Fleabane, Hairy	Conyza bonariensis
Flixweed	Descurainia spophia
Florida Beggarweed	Desmodium tortuosum
Florida Pusley	Richardia scabra
Golden Crownbeard	Verbesina encelioides
Groundsel, Common	Senecio vulgaris
Hairy Indigo	Indigofera hirsute
Hemp Sesbania	Sesbania exaltata
Henbit	Lamium amplexicaule
Jimsonweed	Datura stramonium
Kochia	Kochia scoparia
Lambsquarters, Common	Chenopodium album
Little Mallow	Malva parviflora
London Rocket	'
Marestail/Horseweed	Sisymbrium irio
Mayweed/False Chamomile	Conyza canadensis  Matricaria maritima
Morningglories,	іманісана піаншна
	Inamaga hadaraaga yar intagriya wila
Entireleaf	Ipomoea hederacea var. integriuscula
Ivyleaf	Ipomoea hederacea
Red/Scarlet	Ipomoea coccinea
Smallflower	Jacquemontia tamnifolia
Tall Mustard	Ipomoea purpurea
Mustard,	I December 1
Tansy	Descurainia pinnata
Tumble	Sisymbrium altissimum
Wild	Brassica kaber
Nettle, Burning	Urtica urens
Nightshades,	Total
Black	Solanum nigrum
Eastern Black	Solanum ptycanthum
Hairy	Solanum sarrachoides
Pigweeds,	
Palmer Amaranth	Amaranthus palmeri
Redroot	Amaranthus retroflexus
Smooth	Amaranthus hybridus
Spiny Amaranth	Amaranthus spinosus
Tumble	Amaranthus albus
Prickly Lettuce (China Lettuce)	Lactuca serriola
Prickly Sida (Teaweed)	Sida spinosa
Puncturevine	Tribulus terrestris
Purslane,	•
Common	Portulaca oleracea
Horse	Trianthema portulacastrum
Radish, Wild	Raphanus raphanistrum
Ragweed, Common	Ambrosia artemisiifolia
Redmaids	Calandrinia ciliata var. menziesii
Russian Thistle	
	Salsola iberica
Shepherd's-purse	Capsella bursa-pastoris
Smartweeds,	
Ladysthumb	Polygonum persicaria
Pennsylvania	Polygonum pensylvanicum
Smellmelon	Cucumis melo
Sowthistle, Prickly <sup>2</sup>	Sonchus asper
Spotted Spurge	Euphorbia maculata
Spurred Anoda	Anoda cristata
Tropic Croton	Croton glandulosus
Tropic Croton	Croton giandulosus

h		
Velvetleaf	Abutilon theophrasti	
Venice Mallow	Hibiscus trionum	
Waterhemps,	·	
Common	Amaranthus rudis	
Tall	Amaranthus tuberculatus	
White Cockle	Silene latifolia	
Wild Poinsettia	Euphorbia heterophylla	
Wormwood, Biennial	Artemisia biennis	
Yellow Rocket	Barbarea vulgaris	
GRASS WEED SPECIES	·	
Barnyardgrass	Echinochloa crus-galli	
Bluegrass, Annual	Poa annua	
Crabgrass, Large	Digitaria sanguinalis	
Foxtail, Giant	Setaria faberi	
Goosegrass	Eleusine indica	
Lovegrass, California	Eragrostis diffusa	
Panicums,		
Fall	Panicum dichotomiflorum	
Texas	Panicum texanum	
Ryegrass, Italian	Lolium multiflorum	
Signalgrass, Broadleaf	Brachiaria platyphylla	

<sup>&</sup>lt;sup>1</sup>This product at 4 fluid ounces 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 should expect and accept this prior to using this tank mix.

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

[For Use in the States of Michigan, New York and North Dakota Only]

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

#### **RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 2 fluid ounces of this product per acre during a single application.
- Do not apply more than 3 fluid ounces of this product per acre during a single growing season.
- $\bullet$  Do not make sequential application within 14 days of the first application.
- Do not apply more than 1 fluid ounce of this product per season on soils that contain greater than 90% sand plus gravel.
- Do not apply as part of a tank mix, other than with  $Prowl^{\otimes}$   $H_20$ , or unacceptable injury may result. Other formulations of pendimethalin should not be tank mixed with this product for use in onions.
- · Do not apply with any type of adjuvant.
- Do not apply within 45 days of harvest.

Use of this product may result in necrotic spotting of onion leaves that come in contact with the spray. User should 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 fluid ounce 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**.

<sup>&</sup>lt;sup>2</sup> Not for use in California.

#### **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, you should 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.
- A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
- 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.
- 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.
- 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, such as 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, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the 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 POTATO**

[Arizona, California, Colorado, Delaware, Florida, Hawaii, Idaho, Maryland, Minnesota, Montana, Nebraska, Nevada, New Jersey, New Mexico, North Carolina, North Dakota, Oregon, 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 fluid ounces of this product per acre during a single application.
- Do not apply more than 1.5 fluid ounces of this product per acre during a single growing season.
- · Do not apply to Rill (Furrow) irrigated potatoes.

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 should 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 Fluid Ounces per Acre. This product should be tank mixed 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, such as 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 and should be avoided. In areas with sprinkler irrigation, this product should be incorporated 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 Fluid Ounces 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, you should 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 should the need arise.
- 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.
- 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, such as 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, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the 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 Fluid Ounces per Acre

COMMON NAME	SCIENTIFIC NAME	ORGANIC MATTER	PANTHER HERBICIDE RATE
Lambsquarters, Common	Chenopodium album	Up to 5%	1.5 oz/A
Mustard, Wild	Brassica kaber		
Nightshades,			
Black	Solarium nigrum		
Eastern Black	Solanum ptycanthum		
Hairy	Solarium sarrachoides		
Pigweeds,			
Palmer Amaranth	Amaranthus palmeri		
Redroot	Amaranthus retroflexus		
Smooth	Amaranthus hybridus		
Spiny Amaranth	Amaranthus spinosus		
Tumble	Amaranthus albus		
Radish, Wild	Raphanus raphanistrum		

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

#### **RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 3 fluid ounces of this product per acre per application.
- Do not apply more than 3 fluid ounces of this product per acre during a single growing season.
- This product, at 3 fluid ounces 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 fluid ounces 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 fluid ounces 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	3	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	3	3	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	Do not apply after fruit set	3	3	Apply only to row middles - do not apply over strawberries.  Apply prior to weed emergence.  Crop spotting may occur if an adjuvant is added.  Application after fruit set may result in spotting of fruit and should be avoided.  Do not allow spray drift to come in contact with fruit or foliage

#### **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 fluid ounces of this product per acre during a single growing season.
- Do not apply postemergence to sweet potatoes.
- Do not use greenhouse grown transplants.
- Do not use transplants harvested more that 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.

#### **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 ALMONDS, BUSHBERRIES, GRAPES, NUT TREES (INCLUDING PISTACHIOS), OLIVE, POME FRUIT, POMEGRANTE, STONE FRUIT AND NON-BEARING FRUIT AND NUT TREES

#### **RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 12 fluid ounces of this product per acre during a single application.
- Do not apply more than 24 fluid ounces of this product per acre during a 12 month period, except Bushberries; for Bushberries do not apply more than 12 fluid ounces of this product per acre during a 12 month period.
- Do not make a sequential application within 30 days of the first application, except nut trees, do not make a sequential application within 60 days of the first application.
- A maximum rate of this product of 6 fluid ounces per acre per application should be used 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 fluid ounces per acre in a 12 month period 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.
- Do not apply within 300 yards of non-dormant pears.
- · Raise mower height during all mowing to reduce dust. Dust created by mowing can drift onto desirable vegetation resulting in injury.
- 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.]
- 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).

For bushberries, grape, nut trees (including pistachio), olive, pomegranate and non-bearing fruit trees, this product should be applied 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 fluid ounces (0.188 to 0.38 pound AI per acre) of this product per broadcast acre as a preemergence application. Preemergence (to weed emergence) applications of this product should be made 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 fluid ounces (0.188 to 0.38 pound 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 activity of this product on emerged weeds. Thorough spray coverage is necessary to maximize the postemergence activity of this product.

Refer to Table - Weeds Controlled by Preemergence Application of This Product for weeds controlled by the residual activity of this product. This product should be tank mixed 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 Cheetah<sup>®</sup>. Tank mixes with glyphosate or 2,4-D containing products are not recommended 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 recommended 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 should 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		Band Width in Inches	V	Rate per Broadcast Acre
Banded Application	_	Row Width in Inches	_ ^	Nate per broadcast Acre

#### **USE PRECAUTIONS FOR BUSHBERRIES**

Bushberries: Aronia Berry, Black Currant, Blueberry (Highbush, Rabbit-eye and Lowbush), Buffalo Currant, Chilean Guava, Cranberry (Highbush), Elderberry, European Barberry, Gooseberry, Honeysuckle (edible), Huckleberry, Jostaberry, Juneberry, Lingonberry, Native Currant, Red Currant, Salal and Sea Buckthorn

- · 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.
- Do not apply within 7 days of harvest.

#### **USE PRECAUTIONS FOR GRAPES**

- · Do not apply within 60 days of harvest.
- 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).
- New plantings of "own-rooted varieties", such as Concord, should be planted 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. Shielded applications during this time period should not be made 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, NUT TREES (INCLUDING PISTACHIOS), OLIVE, POME FRUIT, POMEGRANTE, AND STONE FRUIT

Nut Trees: Almond, Beechnut, Betelnut, Black Walnut, Brazil Nut, Butternut, Cashew, Chestnut, Chinquapin, Coconut, English Walnut, Filbert (Hazelnut), Ginkgo, Heartnut, Hickory Nut, Macadamia Nut, Oak, Pecan, Pili Nut, Pine Nut, Pistachio and Tropical Almond. Pome Fruit: Apple, Crabapple, Loquat, Mayhaw, Pear, Pear (Oriental) and Quince

Stone Fruit: Apricot, Cherries (Sweet and Tart), Nectarine, Peach, Plum (Chickasaw, Damson, Japanese), Plumcot and Prune

- 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.
- 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)
- For nut trees (including Almonds and Pistachios) 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.
- Do not apply within 60 days prior to harvest.
- 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.
  - o Application must be incorporated with a minimum of one half inch of water within 48 hours after application.
  - o Do not apply to powdery soils or soils susceptible to wind displacement.
  - o Apply only to orchard berms.
  - o Do not mow the treated berm areas of the orchard.

#### **USE PRECAUTIONS FOR NON-BEARING FRUIT AND NUT TREES**

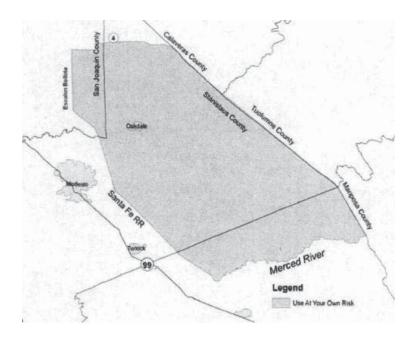
Non-Bearing Apple, Apricot, Avocado, Cherry, Fig, Grapefruit, Hazelnut, Lemon, Nectarine, Olive, Orange, Peach, Pear, Pecan, Plum (including Dried Plum), Pomegranate, and Tangerine and Walnut.

- Do not apply more than 12 fluid ounces of this product per acre during a single application.
- Do not apply more than 24 fluid ounces of this product per acre during a 12 month period.
- 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.

# 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.

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

BROADLEAF WEED SPECIES			
COMMON NAME	SCIENTIFIC NAME	WEED HEIGHT/LENGTH (inches)	PANTHER SC HERBICIDE RATE
Bindweed, Field'	Convolvulus arvensis	8	6 to 12 oz/A
Carpetweed	Mollugo verticillata	4	
Chickweeds,			
Common	Stellaria media	4	
Mouseear	Cerastium vulgatum	4	
Cocklebur, Common	Xanthium strumarium	4	
Eveningprimrose, Cutleaf <sup>2</sup>	Oenothera laciniata	12	
Filaree,			
Broadleaf	Erodium botrys	4	
Redstem	Erodium cicutarium	4	
Florida Beggarweed	Desmodium tortuosum	2	
Hemp Sesbania	Sesbania exaltata	8	
Jimsonweed	Datura stramonium	4	
Lambsquarters, Common	Chenopodium album	4	
Morningglories,			
Entireleaf	lpomoea hederacea var. integriuscula	4	
lvyleaf	lpomoea hederacea	4	
Pitted	lpomoea lacunosa	6	
Red/Scarlet	Ipomoea coccinea	4	
Tall	lpomoea purpurea	4	
Mustard, Wild	Brassica kaber	6	
Pigweeds,			
Palmer Amaranth	Amaranthus palmeri	6	
Redroot	Amaranthus retroflexus	6	
Smooth	Amaranthus hybridus	6	

Plantain, Broadleaf	Plantago major	6
Prickly Sida (Teaweed)	Sida spinosa	6
Purslanes,		
Common	Portulaca o/eracea	4
Rock	Calandrinia spp.	2
Ragweeds,	·	
Common	Ambrosia artemisiifolia	2
Giant	Ambrosia trifida	4
Rice Flatsedge	Cyperus iria	4
Sicklepod	Senna obtusifolia	4
Smartweeds,		
Ladysthumb	Polygonum persicaria	4
Pale	Polygon um lapathifolium	4
Pennsylvania	Polygonum pensylvanicum	4
Spotted Spurge	Euphorbia maculata	4
Velvetleaf	Abutilon theophrasti	4
Venice Mallow	Hibiscus trionum	4
Waterhemps,		
Common	Amaranthus rudis	2
Tall	Amaranthus tuberculatus	2

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

# 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.

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 fluid ounces 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 fluid ounces (0.188 to 0.38 pound AI per acre) of this product per broadcast acre as a preemergence application. Preemergence (to weed emergence) applications of this product should be made 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 fluid ounces (0.188 to 0.38 pound 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 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. A tank mix partner should be used in combination with this product for the postemergence control of weeds larger than 2 inches. Recommended 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

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

mixtures, use conditions must be in accordance with the most restrictive of the label limitations and precautions on either herbicide label.

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

Glyphosate	2,4-D	Cheetah	Paraquat

Table - Weeds Controlled by Preemergence Application of This Product

Bristly Starbur Carpetweed Chickweeds, Common	Acanthospermum hispidum	1	i	RATE
Chickweeds, Common		Up to 10% <sup>1</sup>	All Soil	Asparagus,
Common	Mollugo verticillata		Types <sup>2</sup>	Garlic, Hops
				6 oz/A
	Stellaria media			
Mouseear	Cerastium vulgatum			Bushberries,
Coffee Senna	Cassia occidentalis			Cactus,
Dandelion	Taraxacum officinale			Grapes, Nut
Eclipta	Eclipta prostrate			Trees (Including
Eveningprimrose, Cutleaf	Oenothera laciniata			Pistachio),
False Chamomile	Tripleurospermum maritima			Olive,
Filaree,				Pome Fruit,
Redstem	Erodium cicutarium			Pomegranate, Stone Fruit,
Whitestem	Erodium moschatum			and Non-
Fiddleneck, Coast	Amsinckia menziesii			Bearing Fruit
Fleabane, Hairy	Conyza bonariensis			Trees
Field Pennycress <sup>3</sup>	Thlaspi arvense			6 to 12 oz/A <sup>2</sup>
Florida Beggarweed	Desmodium tortuosum			To Maintain
Florida Pusley	Richardia scabra			Bare Ground
Golden Crownbeard	Verbesina encelioides			on Non-Crop
Groundsel, Common	Senecio vulgaris			Areas of Farms, Orchards &
Hairy Indigo	Indigofera hirsuta			
Hemp Sesbania	Sesbania exaltata			Vineyards
Henbit	Lamium amplexicaule			6 to 12 oz/A
Jimsonweed	Datura stramonium			
Kochia	Kochia scoparia			
Lambsquarters, Common	Chenopodium album			
Mallow,	· · · · · · · · · · · · · · · · · · ·			
Common (Cheeseweed)	Malva neglecta			
Little	Malva parviflora			
Horseweed/Marestail	Conyza canadensis			
Mayweed/False Chamomile	Matricaria maritima			
Morningglories,	1			
Entireleaf	Ipomoea hederacea var.integriuscula			
lvyleaf	Ipomoea hederacea			
Red/Scarlet	Ipomoea coccinea			
Smallflower	Jacquemontia tamnifolia			
Tall	Ipomoea purpurea			
Mustards,				
London Rocket	Sisymbrium irio			
Tansey	Desurainia pinnata			
Tumble	Sisymbrium altissimum			
Wild	Brassica kaber			
Nettle, Burning	Urtica urens			
Nightshades,	1			
Black	Solanum nigrum			
	Solanum ptycanthum	<b></b>	(	1

Hairy	Solanum sarrachoides	
Pigweeds,	Colariam canacionace	
Palmer Amaranth	Amaranthus palmed	
Redroot	Amaranthus retroflexus	
Smooth	Amaranthus hybridus	
Spiny Amaranth	Amaranthus spinosus	
Tumble	Amaranthus albus	
Prickly Lettuce (China Lettuce)	Lactuca serriola	
Prickly Sida (Teaweed)	Sida spinosa	
Puncturevine	Tribulus terrestris	
Purslane,	Tribulas terrestris	
Common	Portulaca oleracea	
Horse	Trianthema portulacastrum	
Radish, Wild	Raphanus raphanistrum	
Ragweed, Common	Ambrosia artemisiifolia	
Redmaids	Calandrinia ciliata var menziessi.	
Redweed	Melochia corchorifolia	
Shepherd's-purse	Capsella bursa-pastoris	
Smellmelon	Cucumis melo	
Sowthistle, Annual <sup>3</sup>	Sonchus oleraceus	
Spotted Spurge	Euphorbia maculata	
Spurred Anoda	Anoda cristata	
Thistle, Russian	Salsola iberica	
Tropic Croton	Croton glandulosus	
Venice Mallow	Hibiscus trionum	
Waterhemps,		
Common	Amaranthus rudis	
Tall	Amaranthus tuberculatus	
Wild Poinsettia	Euphorbia heterophylla	
White Cockle	Silene latifolia	
Wormwood, Biennial	Artemisia biennis	
Yellow Rocket	Barbarea vulgaris	
GRASS WEED SPECIES	<u> </u>	
	Cohineeblee evis celli	
Barnyardgrass	Echinochloa crus-galli	
Bluegrass, Annual	Poa annua	
Crabgrass,		
Large	Digitaria sanquinalis	
Smooth	Digitaria ischaemum	
Foxtails,	<u>-</u>	
Bristly	Setaria verticillata	
Giant	Setaria faberi	
Green	Setaria viridis	
Yellow	Setaria glauca	
Goosegrass	Eleusine indica	
Guineagrass	Panicum maximum	
Johnsongrass, Seedling	Sorghum halepense	
Lovegrass, California	Eragrostis diffusa	
Panicum,		
Fall	Panicum dichotomiflorum	
Texas	Panicum texaum	
Ryegrass, Italian	Lolium multiflorum	
Signalgrass, Broadleaf	Brachiaria platyphylla	

<sup>&</sup>lt;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.

A maximum rate of this product at 6 fluid ounces per acre per application should be used on any soil that has a sand plus gravel content over 80% if bushes, trees or vines are under 3 years of age.

Not for use in California.

### 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 **CHEMTREC (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 products labeling for the applicable "No refillable" or "Refillable" designation. Follow the container disposal [handling] instructions below that apply to your container type / size."

[Note to Reviewer: The bracketed section headers will be included when multiple container types / sizes are listed on the label.]

[Nonrefillable Containers 5 gallons or less:] Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** 

Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 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 or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

[Nonrefillable containers larger than 5 gallons:] Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. If recycling or reconditioning not available, puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke. Triple rinse or pressure rinse container (or equivalent) 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. Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

[Refillable containers larger than 5 gallons:] Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

#### 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

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If you do not agree with or do not accept any of the 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.

(RV050115)

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# **Optional Marketing Claims:**

Nufarm Grow a better tomorrow. Grow a better tomorrow.

# **LABEL HISTORY**

File Name	Revision Mark	Comments
071368-00XXX.20140915.Panther SC - AG.New Draft Label	RV091514	New Section 3 Label - Draft
071368-00RRG.20150212.Panther SC - AG.New	RV021215	AI% Change
071368-00RRG.20150423.Panther SC - AG.New	RV042315	Changes per EPA Review
071368-00RRG.20150501.Panther SC - AG.New	RV050115	Changes per Nufarm Review

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