



GROUP 14 HERBICIDE



# Panther<sup>®</sup> SC

## 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:**

Flumioxazin\* ..... 44.0%

**OTHER INGREDIENTS:** ..... 56.0%

**TOTAL:**..... 100.0%

\*2-[7-fluoro-3,4-dihydro-3-oxo-4-(2-propynyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione  
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. 71368-113

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



**Nufarm**

**Grow a better tomorrow.**

## **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 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 Banded Application	=	$\frac{\text{Band Width in Inches}}{\text{Row Width in Inches}} \times$	Rate per Broadcast Acre
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## 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 Per Ton of Fertilizer	=	Fluid Ounces of This Product Per Acre	X	2,000	÷	Pounds of Fertilizer Per Acre
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Thoroughly clean dry fertilizer blending equipment after this product has been placed in the system to avoid injury to sensitive crops that may be treated with fertilizers blended after the equipment has been used for this product. Rinse the sides of the blender and the herbicide tank with water. Then impregnate the rinsate onto a load of dry fertilizer intended for an approved crop. Use a maximum rate of 1 gallon of rinsate per ton of fertilizer. Follow with 1 to 2 loads of unimpregnated fertilizer in the blender before switching herbicides.

## ROTATIONAL RESTRICTIONS

The following rotational crops may be planted after applying this product at the listed rate. Planting earlier than the 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
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, Sugarcane and Sweet Potato	immediately
	Field Corn (minimum and no-till)	7 days
	Cotton and Field Corn (conventional tillage), Rice, Sorghum, Sunflower, Tobacco and Wheat	30 days <sup>1</sup>
	Barley, Dry and Snap Beans, Flax, Peas, Rye, Safflower and Sweet Corn	3 months
	Alfalfa, Canola, Clover, Oats, Potato, Sugar Beet and all other crops not listed <sup>2</sup>	4 months if soil is tilled prior to planting 8 months if no tillage is performed
	Lentil	6 months
Up to 3 oz/A	Peanut, Soybean, Sugarcane and Sweet Potato	immediately
	Field Corn (minimum and no-till)	14 days
	Field Corn (conventional tillage) and Sorghum	30 days <sup>1</sup>
	Cotton, Rice, Sunflower, Tobacco and Wheat	2 months <sup>1</sup>
	Barley, Dry and Snap Beans, Flax, Pea, Rye, Safflower and Sweet Corn	4 months
	Alfalfa, Clover, Oats, Potato, Sugar Beet	5 months if soil is tilled prior to planting 10 months if no tillage is performed
	Canola and all other crops not listed <sup>2</sup>	6 months if soil is tilled prior to planting 12 months if no tillage is performed
	Lentil	7 months
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
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>3</sup>	12 months if soil is tilled prior to planting 18 months if no tillage is performed

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

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

<sup>3</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**

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



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

**SECTION B**

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

<sup>1</sup> A postemergence herbicide, 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.

<sup>2</sup> 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.

<sup>3</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**

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

**DIRECTIONS FOR USE IN FALL AND SPRING PREPLANT BURNDOWN AND FALLOW SEEDBED PROGRAMS IN FIELD CORN, PEANUT AND SOYBEAN (Preemergence to Crop)**

**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. 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:

<b>Herbicide</b>	<b>Rate</b>
<b>Program 1<sup>1</sup></b>	
Panther SC <b>Plus</b>	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®)
2,4-D LVE (2,4-D for use on preplant soybeans only) <b>Plus</b>	0.5 to 1.0 lb ai/A (equivalent to 1 to 2 pt/A of 2,4-D 4 LVE)
NIS + AMS	0.5% v/v + 17 lbs/100 gals of water

or

<b>Program 2<sup>1</sup></b>	
Panther SC <b>Plus</b>	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> or NIS + AMS	1pt/A or 0.5% v/v + 17 lbs/100 gals of water

or

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

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

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

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

<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. 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 in field corn, peanut and soybean burndown programs. See "DIRECTIONS FOR USE IN FIELD CORN", "DIRECTIONS FOR USE IN PEANUT", "DIRECTIONS FOR USE IN SOYBEAN" for more information.

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

### **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.
- 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. 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)**

### **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. 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)**

### **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**

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. 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**

#### **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**

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

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



## CARRIER VOLUME AND SPRAY PRESSURE

### Hooded, Shielded and Layby Application

To ensure thorough coverage in hooded, shielded and layby applications, use 15 to 30 gallons spray solution per treated acre. Use 20 to 30 gallons per treated acre under heavy weed pressure. Nozzle selection 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	X	X <sup>1</sup>
MSMA	Annual Grasses Yellow Nutsedge	X	X

<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

## 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 IN FIELD CORN

### 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 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®) 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®
Basis®	Resolve®
Dicamba	Simazine
Express®	Spitfire™
Glyphosate	Victory®
Hornet®	Weedmaster®
Metribuzin	

<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.

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 paraquat 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 MATTER	SOIL TYPE	PANTHER SC HERBICIDE RATE
COMMON NAME	SCIENTIFIC NAME			
Bristly Starbur	<i>Acanthospermum hispidum</i>	Up to 5%	All Soil Types	4 oz/A
Carpetweed	<i>Mollugo verticillata</i>			
Chickweeds,				
Common	<i>Stellaria media</i>			
Mouseear	<i>Cerastium vulgatum</i>			
Coffee Senna	<i>Cassia occidentalis</i>			
Copperleaf, Hophornbeam	<i>Acalypha ostryifolia</i>			
Dandelion	<i>Taraxacum officinale</i>			
Dodder (suppression only) <sup>1</sup>	<i>Cuscuta</i> spp.			
Eclipta	<i>Eclipta prostrata</i>			
Eveningprimrose, Cutleaf	<i>Oenothera laciniata</i>			
False Chamomile	<i>Tripleurospermum maritima</i>			
Fiddleneck, Coast	<i>Amsinckia menziesii</i>			
Field Pennycress <sup>2</sup>	<i>Thlaspi arvense</i>			
Fleabane, Hairy	<i>Conyza bonariensis</i>			
Flixweed	<i>Descurainia spophia</i>			
Florida Beggarweed	<i>Desmodium tortuosum</i>			
Florida Pusley	<i>Richardia scabra</i>			
Golden Crownbeard	<i>Verbesina encelioides</i>			
Groundsel, Common	<i>Senecio vulgaris</i>			
Hairy Indigo	<i>Indigofera hirsute</i>			
Hemp Sesbania	<i>Sesbania exaltata</i>			
Henbit	<i>Lamium amplexicaule</i>			

(continued)

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

<b>BROADLEAF WEED SPECIES</b>		<b>ORGANIC MATTER</b>	<b>SOIL TYPE</b>	<b>PANTHER SC HERBICIDE RATE</b>
<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>			
Jimsonweed	<i>Datura stramonium</i>	Up to 5%	All Soil Types	4 oz/A
Kochia	<i>Kochia scoparia</i>			
Lambsquarters, Common	<i>Chenopodium album</i>			
Little Mallow	<i>Malva parviflora</i>			
London Rocket	<i>Sisymbrium irio</i>			
Marestail/Horseweed	<i>Conyza canadensis</i>			
Mayweed/False Chamomile	<i>Matricaria maritima</i>			
Morningglories,				
Entireleaf	<i>Ipomoea hederacea</i> var. <i>integriuscula</i>			
Ivyleaf	<i>Ipomoea hederacea</i>			
Red/Scarlet	<i>Ipomoea coccinea</i>			
Smallflower	<i>Jacquemontia tamnifolia</i>			
Tall	<i>Ipomoea purpurea</i>			
Mustard,				
Tansy	<i>Descurainia pinnata</i>			
Tumble	<i>Sisymbrium altissimum</i>			
Wild	<i>Brassica kaber</i>			
Nettle, Burning	<i>Urtica urens</i>			
Nightshades,				
Black	<i>Solanum nigrum</i>			
Eastern Black	<i>Solanum ptycanthum</i>			
Hairy	<i>Solanum sarrachoides</i>			
Pigweeds,				
Palmer Amaranth	<i>Amaranthus palmeri</i>			
Redroot	<i>Amaranthus retroflexus</i>			
Smooth	<i>Amaranthus hybridus</i>			
Spiny Amaranth	<i>Amaranthus spinosus</i>			
Tumble	<i>Amaranthus albus</i>			
Prickly Lettuce (China Lettuce)	<i>Lactuca serriola</i>			
Prickly Sida (Teaweed)	<i>Sida spinosa</i>			
Puncturevine	<i>Tribulus terrestris</i>			
Purslane,				
Common	<i>Portulaca oleracea</i>			
Horse	<i>Trianthema portulacastrum</i>			
Radish, Wild	<i>Raphanus raphanistrum</i>			
Ragweed, Common	<i>Ambrosia artemisiifolia</i>			
Redmaids	<i>Calandrinia ciliata</i> var. <i>menziesii</i>			
Russian Thistle	<i>Salsola iberica</i>			
Shepherd's-purse	<i>Capsella bursa-pastoris</i>			

(continued)



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

<b>BROADLEAF WEED SPECIES</b>		<b>ORGANIC MATTER</b>	<b>SOIL TYPE</b>	<b>PANTHER SC HERBICIDE RATE</b>
<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>			
Smartweeds,		Up to 5%	All Soil Types	4 oz/A
Ladysthumb	<i>Polygonum persicaria</i>			
Pennsylvania	<i>Polygonum pennsylvanicum</i>			
Smellmelon	<i>Cucumis melo</i>			
Sowthistle, Prickly <sup>2</sup>	<i>Sonchus asper</i>			
Spotted Spurge	<i>Euphorbia maculata</i>			
Spurred Anoda	<i>Anoda cristata</i>			
Tropic Croton	<i>Croton glandulosus</i>			
Velvetleaf	<i>Abutilon theophrasti</i>			
Venice Mallow	<i>Hibiscus trionum</i>			
Waterhemp,				
Common	<i>Amaranthus rudis</i>			
Tall	<i>Amaranthus tuberculatus</i>			
White Cockle	<i>Silene latifolia</i>			
Wild Poinsettia	<i>Euphorbia heterophylla</i>			
Wormwood, Biennial	<i>Artemisia biennis</i>			
Yellow Rocket	<i>Barbarea vulgaris</i>			
<b>GRASS WEED SPECIES</b>				
Barnyardgrass	<i>Echinochloa crus-galli</i>			
Bluegrass, Annual	<i>Poa annua</i>			
Crabgrass, Large	<i>Digitaria sanguinalis</i>			
Foxtail, Giant	<i>Setaria faberi</i>			
Goosegrass	<i>Eleusine indica</i>			
Lovegrass, California	<i>Eragrostis diffusa</i>			
Panicums,				
Fall	<i>Panicum dichotomiflorum</i>			
Texas	<i>Panicum texanum</i>			
Ryegrass, Italian	<i>Lolium multiflorum</i>			
Signalgrass, Broadleaf	<i>Brachiaria platyphylla</i>			

<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.

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

### **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.
- 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.

### **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.

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

<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<sup>®</sup> for additional grass control. Tank mixes with flufenacet (Axiom<sup>®</sup> or Domain<sup>®</sup>), metolachlor (Dual<sup>®</sup> products or Boundary<sup>®</sup>), dimethenamid (Frontier<sup>®</sup> or Outlook<sup>®</sup>) or alachlor (Micro-Tech<sup>®</sup> or IntRRo<sup>®</sup>), may result in severe injury to soybeans when application is followed by prolonged periods of cool wet weather.

## ROUNDUP READY PROGRAM

This product may be applied as part of a burndown program or preemergence in conventional tillage programs, at 2 to 3 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<sup>®</sup> programs. A sequential post emergence application of glyphosate will be required to control weeds not controlled by this product.

## DIRECTIONS FOR USE IN 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 **before the crop emerges**.

**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)	
		3 oz/A	4 oz/A
COMMON NAME	SCIENTIFIC NAME		
Bindweed, Field <sup>1</sup>	<i>Convolvulus arvensis</i>	4	8
Carpetweed	<i>Mollugo verticillata</i>	4	4
Cocklebur, Common	<i>Xanthium strumarium</i>	4	4
Florida Beggarweed	<i>Desmodium tortuosum</i>	2	2
Hemp Sesbania	<i>Sesbania exaltata</i>	6	8
Jimsonweed	<i>Datura stramonium</i>	4	4
Lambsquarters, Common	<i>Chenopodium album</i>	4	4
Morningglories,			
Entireleaf	<i>Ipomoea hederacea</i> var. <i>integriuscula</i>	-	4
Ivyleaf	<i>Ipomoea hederacea</i>	4	4
Pitted	<i>Ipomoea lacunosa</i>	4	6
Red	<i>Ipomoea coccinea</i>	-	4
Tall	<i>Ipomoea purpurea</i>	2	4
Mustard, Wild	<i>Brassica kaber</i>	6	6
Pigweeds,			
Palmer Amaranth	<i>Amaranthus palmeri</i>	4	6
Redroot	<i>Amaranthus retroflexus</i>	4	6
Smooth	<i>Amaranthus hybridus</i>	4	6
Plantain, Broadleaf	<i>Plantago major</i>	6	6
Prickly Sida	<i>Sida spinosa</i>	4	6
Purslanes,			
Common	<i>Portulaca oleracea</i>	2	4
Rock	<i>Calandrinia</i> spp.	-	2

(continued)

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

BROADLEAF WEED SPECIES		WEED HEIGHT (inches)	
		3 oz/A	4 oz/A
COMMON NAME	SCIENTIFIC NAME		
Ragweeds,			
Common	<i>Ambrosia artemisiifolia</i>	2	2
Giant	<i>Ambrosia trifida</i>	4	4
Rice Flatsedge	<i>Cyperus iria</i>	2	4
Sicklepod	<i>Senna obtusifolia</i>	4	4
Smartweeds,			
Ladysthumb	<i>Polygonum persicaria</i>	4	4
Pale	<i>Polygonum lapathifolium</i>	4	4
Pennsylvania	<i>Polygonum pennsylvanicum</i>	4	4
Spotted Spurge	<i>Euphorbia maculata</i>	4	4
Velvetleaf	<i>Abutilon theophrasti</i>	4	6
Venice Mallow	<i>Hibiscus trionum</i>	2	2
Waterhemp,			
Common	<i>Amaranthus rudis</i>	2	2
Tall	<i>Amaranthus tuberculatus</i>	2	2

<sup>1</sup>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	X		
atrazine	Pigweeds, Cocklebur	X	X	X
Asulox <sup>®3</sup>	Annual Grasses		X	X
Evik <sup>®4</sup>	Annual Grasses		X	X
glyphosate <sup>5</sup>	Annual and Perennial Weeds	X		X
metribuzin <sup>6</sup>	Broadleaf Panicum, Goosegrass		X	X
Sempre <sup>®</sup>	Purple Nutsedge, Yellow Nutsedge	X	X	X
Weedmaster <sup>®</sup>	Annual and Perennial Broadleaf Weeds	X		

<sup>1</sup> 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.**

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

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

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

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

**ADDITIONAL PREEMERGENCE BROADLEAF CONTROL**

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

**ADDITIONAL PREEMERGENCE GRASS CONTROL**

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

**Table - Weeds Controlled by Preemergence Application of This Product**

<b>BROADLEAF WEED SPECIES</b>				
<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>	<b>ORGANIC MATTER</b>	<b>SOIL TYPE</b>	<b>PANTHER SC HERBICIDE RATE</b>
Bristly Starbur	<i>Acanthospermum hispidum</i>	Up to 10% <sup>1</sup>	All Soil Types <sup>2</sup>	Sugarcane 6 to 8 oz/A
Carpetweed	<i>Mollugo verticillata</i>			
Chickweeds,				To Maintain Bare Ground on Non-Crop Areas of Farms 6 to 12 oz/A
Common	<i>Stellaria media</i>			
Mouseear	<i>Cerastium vulgatum</i>			
Coffee Senna	<i>Cassia occidentalis</i>			
Dandelion	<i>Taraxacum officinale</i>			
Eclipta	<i>Eclipta prostrate</i>			
Eveningprimrose, Cutleaf	<i>Oenothera laciniata</i>			
False Chamomile	<i>Tripleurospermum maritima</i>			
Filaree,				
Redstem	<i>Erodium cicutarium</i>			
Whitstem	<i>Erodium moschatum</i>			
Fiddleneck, Coast	<i>Amsinckia menziesii</i>			
Fleabane, Hairy	<i>Conyza bonariensis</i>			
Field Pennycress <sup>3</sup>	<i>Thlaspi arvense</i>			
Florida Beggarweed	<i>Desmodium tortuosum</i>			
Florida Pusley	<i>Richardia scabra</i>			
Golden Crownbeard	<i>Verbesina encelioides</i>			
Groundsel, Common	<i>Senecio vulgaris</i>			
Hairy Indigo	<i>Indigofera hirsuta</i>			
Hemp Sesbania	<i>Sesbania exaltata</i>			
Henbit	<i>Lamium amplexicaule</i>			
Jimsonweed	<i>Datura stramonium</i>			
Kochia	<i>Kochia scoparia</i>			
Lambsquarters, Common	<i>Chenopodium album</i>			
Mallow,				
Common (Cheeseweed)	<i>Malva neglecta</i>			
Little	<i>Malva parviflora</i>			
Horseweed/Marestail	<i>Conyza canadensis</i>			
Mayweed/False Chamomile	<i>Matricaria maritima</i>			
Morningglories,				
Entireleaf	<i>Ipomoea hederacea</i> var. <i>integriuscula</i>			
Ivyleaf	<i>Ipomoea hederacea</i>			
Red/Scarlet	<i>Ipomoea coccinea</i>			
Smallflower	<i>Jacquemontia tamnifolia</i>			
Tall	<i>Ipomoea purpurea</i>			

(continued)



**Table - Weeds Controlled by Preemergence Application of This Product (continued)**

<b>BROADLEAF WEED SPECIES</b>				
<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>	<b>ORGANIC MATTER</b>	<b>SOIL TYPE</b>	<b>PANTHER SC HERBICIDE RATE</b>
Mustards,		Up to 10% <sup>1</sup>	All Soil Types <sup>2</sup>	Sugarcane 6 to 8 oz/A  To Maintain Bare Ground on Non-Crop Areas of Farms 6 to 12 oz/A
London Rocket	<i>Sisymbrium irio</i>			
Tansey	<i>Desurainia pinnata</i>			
Tumble	<i>Sisymbrium altissimum</i>			
Wild	<i>Brassica kaber</i>			
Nettle, Burning	<i>Urtica urens</i>			
Nightshades,				
Black	<i>Solanum nigrum</i>			
Eastern Black	<i>Solanum ptycanthum</i>			
Hairy	<i>Solanum sarrachoides</i>			
Pigweeds,				
Palmer Amaranth	<i>Amaranthus palmed</i>			
Redroot	<i>Amaranthus retroflexus</i>			
Smooth	<i>Amaranthus hybridus</i>			
Spiny Amaranth	<i>Amaranthus spinosus</i>			
Tumble	<i>Amaranthus albus</i>			
Prickly Lettuce (China Lettuce)	<i>Lactuca serriola</i>			
Prickly Sida (Teaweed)	<i>Sida spinosa</i>			
Puncturevine	<i>Tribulus terrestris</i>			
Purslane,				
Common	<i>Portulaca oleracea</i>			
Horse	<i>Trianthema portulacastrum</i>			
Radish, Wild	<i>Raphanus raphanistrum</i>			
Ragweed, Common	<i>Ambrosia artemisiifolia</i>			
Redmaids	<i>Calandrinia ciliata var. menziessi.</i>			
Redweed	<i>Melochia corchorifolia</i>			
Shepherd's-purse	<i>Capsella bursa-pastoris</i>			
Smellmelon	<i>Cucumis melo</i>			
Sowthistle, Annual <sup>3</sup>	<i>Sonchus oleraceus</i>			
Spotted Spurge	<i>Euphorbia maculata</i>			
Spurred Anoda	<i>Anoda cristata</i>			
Thistle, Russian	<i>Salsola iberica</i>			
Tropic Croton	<i>Croton glandulosus</i>			
Venice Mallow	<i>Hibiscus trionum</i>			
Waterhemp,				
Common	<i>Amaranthus rudis</i>			
Tall	<i>Amaranthus tuberculatus</i>			
Wild Poinsettia	<i>Euphorbia heterophylla</i>			
White Cockle	<i>Silene latifolia</i>			
Wormwood, Biennial	<i>Artemisia biennis</i>			
Yellow Rocket	<i>Barbarea vulgaris</i>			

(continued)

**Table - Weeds Controlled by Preemergence Application of This Product (continued)**

<b>BROADLEAF WEED SPECIES</b>				
<b>COMMON NAME</b>	<b>SCIENTIFIC NAME</b>	<b>ORGANIC MATTER</b>	<b>SOIL TYPE</b>	<b>PANTHER SC HERBICIDE RATE</b>
<b>GRASS WEED SPECIES</b>		Up to 10% <sup>1</sup>	All Soil Types <sup>2</sup>	Sugarcane 6 to 8 oz/A  To Maintain Bare Ground on Non-Crop Areas of Farms 6 to 12 oz/A
Barnyardgrass	<i>Echinochloa crus-galli</i>			
Bluegrass, Annual	<i>Poa annua</i>			
Crabgrass,				
Large	<i>Digitaria sanguinalis</i>			
Smooth	<i>Digitaria ischaemum</i>			
Foxtails,				
Bristly	<i>Setaria verticillata</i>			
Giant	<i>Setaria faberi</i>			
Green	<i>Setaria viridis</i>			
Yellow	<i>Setaria glauca</i>			
Goosegrass	<i>Eleusine indica</i>			
Guineagrass	<i>Panicum maximum</i>			
Johnsongrass, Seedling	<i>Sorghum halepense</i>			
Lovegrass, California	<i>Eragrostis diffusa</i>			
Panicum,				
Fall	<i>Panicum dichotomiflorum</i>			
Texas	<i>Panicum texaum</i>			
Ryegrass, Italian	<i>Lolium multiflorum</i>			
Signalgrass, Broadleaf	<i>Brachiaria platyphylla</i>			

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

<sup>2</sup> 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.

<sup>3</sup> 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

### 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 than 2 days prior to transplanting.
- Do not use on any sweet potato variety other than "Beauregard", unless user has tested this product on other variety and has found crop tolerance to be acceptable.
- Do not apply as a part of any tank mix, except with labeled rates of Command, if tank mix is applied prior to transplanting.

### TIMING TO SWEET POTATOES

This product must be applied prior to transplanting sweet potatoes.

### TIMING TO WEEDS

#### Preemergence to Weeds

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

## DIRECTIONS FOR USE IN WHEAT

### 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, KY, MD, NC, SC, TN or VA.
- Plant wheat no sooner than 14 days after application of this product in the states of ID, MN, MT, ND, OR, SD 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.

### 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 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 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
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## STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage, disposal or cleaning of equipment.

### PESTICIDE STORAGE

Keep pesticide in original container. Store in a cool, dry, secure place. Do not put formulation or dilute spray solution into food or drink containers. Do not contaminate food or foodstuffs. Do not store or transport near feed or food. Not for use or storage in or around the home. For help with any spill, leak, fire or exposure involving this material, call day or night **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:** 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 handling instructions below that apply to your container type / size.

**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. (continued)

## **STORAGE AND DISPOSAL (continued)**

**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.

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