



**OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION**

WASHINGTON, D.C. 20460

May 20, 2024

Don O'Shaughnessy  
Agent  
Agromarketing Company, Inc.  
c/o D. O'Shaughnessy Consulting, Inc.  
206 Traditions Blvd.  
Bowling Green, KY 42103

Subject: Notification per PRN 98-10 – Clarify lb./gallon of glyphosate salt in product  
Product Name: NASA HERBICIDE  
EPA Registration Number: 87845-2  
Application Date: 3/15/2022  
Case Number: 478182

Dear Don O'Shaughnessy:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

The label submitted with the application has been stamped "NOTIFICATION" and placed in our records.

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

If you have any questions, please contact Sarah Meadows at 202-566-2828 or at [meadows.sarah@epa.gov](mailto:meadows.sarah@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Emily Schmid". To the right of the signature, the letters "FOR" are written in a small, handwritten font.

Emily Schmid, Product Manager 25  
Herbicide Branch  
Registration Division (7505P)  
Office of Pesticide Programs

GLYPHOSATE

GROUP

9

HERBICIDE

# Nasa Herbicide

AVOID HERBICIDE CONTACT WITH FOLIAGE, GREEN STEMS, EXPOSED NON-WOODY ROOTS OR FRUIT OF CROPS, DESIRABLE PLANTS AND TREES BECAUSE SEVERE INJURY OR DESTRUCTION MAY RESULT.

Read the entire label before using this product. Use only according to label instructions.

Read "CONDITIONS OF SALE AND WARRANTY" before buying or using. If terms are not acceptable, return product at once unopened.

**ACTIVE INGREDIENT:**

\*Glyphosate (N-(phosphonomethyl) glycine) in the form of its isopropylamine salt

41.0%

**INERT INGREDIENTS:**

59.0%

**TOTAL:**

100%

\* Glyphosate acid equivalent 30.38%

Contains 4 pounds per U.S. gallon of the active ingredient, glyphosate, in the form of its isopropylamine salt.

Equivalent to 356 grams per litre or 3 pounds per U.S. gallon of the acid, glyphosate.

## KEEP OUT OF REACH OF CHILDREN CAUTION

**FIRST AID**

**IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Call a Poison Control Center or doctor for treatment advice.

**IF SWALLOWED:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to by a poison control center or doctor. Do not give anything to an unconscious person.

**IF ON SKIN:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a Poison Control Center or doctor, or when going for treatment.

FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-9300

SEE BOOKLET FOR ADDITIONAL PRECAUTIONARY STATEMENTS AND USE DIRECTIONS

EPA Reg. No. 87845-2

EPA Est No. 86041-CHN-1

**NET CONTENTS:** \_\_\_\_\_

Lot No. \_\_\_\_\_

Manufactured for:  
Agromarketing Co. Inc.  
314 Estate Court  
Midland, ON Canada L4R 5H2  
913-416-0962

**NOTIFICATION**

87845-2

The applicant has certified that no changes, other than those reported to the Agency have been made to the labeling. The Agency acknowledges this notification by letter dated:

5/20/2024

**PRECAUTIONARY STATEMENTS**  
**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**  
**KEEP OUT OF REACH OF CHILDREN**

**CAUTION**

Causes moderate eye irritation. Harmful if absorbed through skin. Harmful if swallowed. Do not get in eyes, on skin, or on clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove contaminated clothing and wash clothing before re-use.

DOMESTIC ANIMALS: This product is considered to be relatively non-toxic to dogs and other domestic animals; however, ingestion of this product or large amounts of freshly sprayed vegetation may result in temporary gastrointestinal irritation (vomiting, diarrhea, colic, etc.). If such symptoms are observed, provide the animal with plenty of fluids to prevent dehydration. Call a veterinarian if symptoms persist for more than 24 hours.

FOR CHEMICAL SPILL, LEAK, FIRE OR EXPOSURE  
**CALL CHEMTREC (1-800-424-9300)**

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

**Applicators and other handlers must wear** long sleeved shirt and long pants, shoes, socks, and protective eyewear. Follow manufacturer's instructions for cleaning / maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**Engineering controls statement:** When handlers use closed system, enclosed cabs or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**USER SAFETY RECOMMENDATIONS:**

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if contaminated. Wash thoroughly and put on clean clothing.

**ENVIRONMENTAL HAZARDS**

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

**PHYSICAL OR CHEMICAL HAZARDS**

Spray solutions of this product must be mixed, stored and applied using only **stainless steel, aluminum, fiberglass, plastic or plastic-lined steel containers**.

DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS. This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

Read the entire label before using this product. Use only according to label instructions.

Read "CONDITIONS OF SALE AND WARRANTY" before buying or using. If terms are not acceptable, return product at once unopened.

## **DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulations.

### **Agricultural Use Requirements**

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

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil or water, is: coveralls, chemical resistant gloves such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber >14 mils, shoes and socks, and protective eyewear.

### **Non-Agricultural Use Requirements**

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

Keep people and pets off treated areas until spray solution has dried.

### **STORAGE AND DISPOSAL**

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

**Storage and Spill Procedures:** Store upright at room temperature. Avoid exposure to extreme temperatures. In case of spillage or leakages, soak up with an absorbent material such as sand, sawdust, earth, Fuller's earth, etc. Dispose of with chemical waste.

**Pesticide Disposal:** Pesticide, spray mixture or rinse water that cannot be used according to label instructions must be disposed of at or by an approved waste disposal facility.

**Container Handling:** *For Containers equal to or less than 5 Gallons* : Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. *For Containers greater than 5 Gallons:* 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. Offer for recycling if available. If recycling is not available, puncture and dispose of in a sanitary land fill or by incineration or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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

## PRODUCT INFORMATION

### Product Description:

This product is a post-emergent, systemic herbicide with no soil residue activity. It is generally non-selective and gives broad spectrum control of many annual weeds, perennial weeds, woody brush and trees. It is formulated as a water-soluble liquid. No additional surfactant, additives containing surfactant, buffering agents or pH adjusting agents are needed or specified. It may be applied through most standard industrial or field-type sprayers after dilution and thorough mixing with water or other carriers according to label instructions. Do not add surfactants, additives containing surfactants, buffering agents or pH adjusting agents to the spray solution when Nasa is the only pesticide used. Ammonium Sulfate may be used. See the **MIXING DIRECTIONS** section of this label for instructions.

### Time to Symptoms:

This product moves through the plant from the point of foliage contact to and into the root system. Visible effects on most annual weeds occur within 2 to 4 days, but on most perennial weeds may not occur for 7 days or more. Extremely cool or cloudy weather following treatment may slow activity of this product and delay development of visual symptoms. Visible effects are a gradual wilting and yellowing of the plant which advances to complete browning of above-ground growth and deterioration of underground plant parts.

### Stage of Weeds:

Annual weeds are easiest to control when they are small. Best control of most perennial weeds is obtained when treatment is made at late growth stages approaching maturity. Refer to the annual, perennial, woody brush and trees rate tables for specifications for specific weeds.

Always use the higher rate of this product per acre within the specified range when weed growth is heavy or dense or weeds are growing in an undisturbed (non-cultivated) area.

Do not treat weeds under poor growing conditions including drought stress, disease or insect damage, as reduced weed control may result. Reduced results may also occur when treating weeds heavily covered with dust.

### Cultural Considerations:

Reduced control may result when applications are made to annual and perennial weeds that have been mowed, grazed, or cut, and have not been allowed to regrow to the specified stage for treatment.

### Rainfastness:

Heavy rainfall or irrigation soon after application may wash this product off of the foliage and a repeat application may be required for adequate control.

### Spray Coverage:

For best results, spray coverage must be uniform and complete. Do not spray weed foliage to the point of runoff.

### Mode of Action:

The active ingredient in this product inhibits an enzyme found only in plants that is essential to formation of specific amino acids.

### No Soil Activity:

Weeds must be emerged at the time of application to be controlled by this product. Weeds germinating from seed after application will not be controlled. Unemerged plants arising from unattached underground rhizomes or root stocks of perennials will not be affected by the herbicide and will continue to grow.

### Biological Degradation:

Degradation of this product is primarily a biological process carried out by soil microbes.

### Volatility:

Nasa is non-volatile. Therefore it cannot move as a vapor after application to affect nearby vegetation.

### Tank Mixing:

This product does not provide residual weed control. For subsequent residual weed control, follow a label-

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

To the extent consistent with applicable law, Buyer and all users are responsible for all loss or damage in connection with the use or handling of mixtures of this product with herbicides or other materials that are not expressly directed in this labeling. Mixing this product with herbicides or other materials not directed on this label may result in reduced performance.

**Annual Maximum Use Rate:**

Except as otherwise specified in the crop section of this label, the combined total of all treatments must not exceed 8 quarts of this product per acre per year.\*

For non-crop uses, the combined total of all treatments must not exceed 10.6 quarts of this product per acre per year.\*

\* The annual maximum use rate stated throughout this product's labeling apply to this product combined with the use of all other herbicides containing glyphosate or sulfosate as the active ingredient, whether applied as mixtures or separately. Calculate application rates to ensure that the use of this and other glyphosate or sulfosate-containing products does not exceed maximum use rate.

**WEED RESISTANCE MANAGEMENT**

Glyphosate, the active ingredient in this product, is a group 9 herbicide. Weed resistance to Group 9 herbicides is rare; however, any weed population may contain plants naturally resistant to Group 9 herbicides. Weed species resistant to Group 9 herbicides may be effectively managed by using another herbicide from a different group or using other cultural practices.

Weed resistance management procedures for Group 9 herbicides are:

- Ensure optimum weed control by making applications at the right time (correct weed growth stage / size) and using the specified label rate for the most difficult-to-control weed in your field.
- Base decisions on local need and use the tools needed to obtain optimum weed control and minimize weed escapes.

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

- Rotate the use of Nasa Herbicide or other Group 9 herbicides within a growing season sequence or among growing seasons with different herbicide groups that control the same weeds in a field.
  - Use tank mixtures with herbicides from a different group if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.
  - Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use and crop rotation, and that considers tillage ( or other mechanical control methods), cultural ( e.g., higher crop seeding rates; precision fertilizer application method and timing to favor the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.
  - Scout after herbicide application to monitor weed populations for early signs of resistance development.
- Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method such as hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields and planting clean seed.
- If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy or herbicide with a different mode of action, if available.
  - Contact your local extension specialist or certified crop advisors for additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
  - For further information or to report suspected resistance, contact AgroShield LLC at 1-515-419-9524 or at [www.agroshield.com](http://www.agroshield.com). In addition to the guidance above, registrants are encouraged to incorporate the



appropriate elements of Best Management Practices from HRAC and WSSA on the label.

**ATTENTION** AVOID CONTACT OF HERBICIDE WITH FOLIAGE, GREEN STEMS, EXPOSED NON-WOODY ROOTS OR FRUIT OF CROPS, DESIRABLE PLANTS AND TREES BECAUSE SEVERE INJURY OR DESTRUCTION MAY RESULT.

AVOID DRIFT. EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS.

Do not allow the herbicide solution to mist, drip, drift or splash onto desirable vegetation since minute quantities of this product can cause severe damage or destruction to the crop, plants or other areas on which treatment was not intended. The likelihood of injury occurring from the use of this product is greatest when winds are gusty or in excess of 5 miles per hour or when other conditions, including lesser wind velocities, will allow spray drift to occur. When spraying, avoid combinations of pressure and nozzle type that will result in splatter or fine particles (mist) which are likely to drift. AVOID APPLYING AT EXCESSIVE SPEED OR PRESSURE.

**SEED POTATO PRECAUTION** Potatoes grown for seed are very sensitive to glyphosate at extremely low concentrations. Exposure of the seed potato crop can cause germination failure or deformities. Daughter tuber damage may occur at levels where mother crop symptoms are not visible. Multiple sprouting from eyes, weak and distorted stems, "little potato syndrome", cauliflower sprouts, root distortions, excessive root growth, suppressed tuber initiation and bulking, failure or delay in opening of eyes, and rotting of tubers in the field or store can result. Subsequent plantings of seed pieces from the exposed mother crop can result in delayed or no emergence or produce lower than normal yields.

Glyphosate can contaminate seed potato crops through carryover residue in application equipment or drift from applying glyphosate to nearby crops. Always follow good wash-out procedures using detergents or other suitable cleaning agents to remove all residual traces of glyphosate from application equipment that may be used to apply other products to seed potato crops.

**NOTE:** Use of this product in any manner not consistent with this label may result in injury to persons, animals or crops, or other unintended consequences. Keep container closed to prevent spills and contamination.

### MIXING DIRECTIONS

Clean sprayer parts immediately after using this product by thoroughly flushing with water.

**NOTE:** Reduced results may occur if water containing soil is used, such as visibly muddy water or water from ponds and ditches that is not clear.

#### Mixing with Water:

This product mixes readily with water. Mix spray solutions of this product as follows:

- Fill the mixing or spray tank with the required amount of water.
- Add the specified amount of this product near the end of the filling process and mix well. Use caution to avoid siphoning back into the carrier source. Use approved anti-back-siphoning devices required by State or local regulations.
- During mixing and application, foaming of the spray solution may occur. To prevent or minimize foam, avoid the use of mechanical agitators, terminate by-pass and return lines at the bottom of the tank and, if needed, use an approved anti-foam or defoaming agent.

**Tank Mixing Procedure:** Always predetermine the compatibility of labeled tank mixtures of this product with water carrier by mixing small proportional quantities in advance.

Mix labeled tank mixtures of this product as follows:

1. Place a 20 to 35 mesh screen or wetting basket over filling port.
2. Through the screen, fill the spray tank one-half full with water and start agitation.
3. If a wettable powder is used, make a slurry with the water carrier, and add it SLOWLY through the screen into the tank. Continue agitation.
4. If a flowable formulation is used, premix one part flowable with one part water. Add diluted mixture SLOWLY through the screen into the tank. Continue agitation.
5. If an emulsifiable concentrate formulation is used, premix one part emulsifiable concentrate with two parts water. Add diluted mixture slowly through the screen into the tank. Continue



- agitation.
6. Continue filling the sprayer tank with water and add the required amount of this product near the end of the filling process.
  7. Add individual formulations to the spray tank as follows: wettable powder, flowable, emulsifiable concentrate, drift control additive, water soluble liquid.

Maintain good agitation at all times until the contents of the tank are sprayed. If the spray mixture is allowed to settle, thorough agitation is required to resuspend the mixture before spraying is resumed.

Keep a by-pass line on or near the bottom of the tank to minimize foaming. Screen size in nozzle or line strainers must be no finer than 50 mesh.

Refer to the **Tank Mixing Procedure** section of **PRODUCT INFORMATION** for additional precautions.

#### **Mixing for Hand-Held Sprayers:**

Prepare the desired volume of spray solution by mixing the amount of this product in water as shown in the following table:

#### **Spray Solution**

<b>Desired Volume</b>	<b>Amount of Nasa Herbicide</b>					
	<b>1/2 %</b>	<b>1 %</b>	<b>1 1/2 %</b>	<b>2 %</b>	<b>5 %</b>	<b>10 %</b>
<b>1 Gallon</b>	2/3 oz.	1 1/3 oz.	2 oz.	2 2/3 oz.	6 1/2 oz.	13 oz.
<b>25 Gallon</b>	1 pt.	1 qt.	1 1/2 qt.	2 qt.	5 qt.	10 qt.
<b>100 Gallon</b>	2 qt.	1 gal.	1 1/2 gal.	2 gal.	5 gal.	10 gal.
2 tablespoons = 1 fluid ounce						

For use in knapsack sprayers, mix the listed amount of this product with water in a large container, then fill sprayer with the mixed solution.

#### **Ammonium Sulfate:**

The addition of 1 to 2 percent dry ammonium sulfate by weight or 8.5 to 17 pounds per 100 gallons of water may increase the performance of this product, particularly when tank mixed with certain residual herbicides on annual and perennial weeds. The equivalent rate of ammonium sulfate in a liquid formulation may also be used. Ensure that ammonium sulfate is completely dissolved in the spray tank before adding herbicides. Thoroughly rinse the spray system with clean water after use to reduce corrosion.

**NOTE:** When using ammonium sulfate, apply this product at rates specified in this label. Lower rates will result in reduced performance.

#### **Colorants and Dyes:**

Agriculturally-approved colorants or marking dyes may be added to this product. Colorants or dyes used in spray solutions of this product may reduce performance, especially at lower rates or dilutions. Use colorants or dyes according to the manufacturer's recommendations.

#### **Drift Control Additives:**

Drift control additives may be used with all equipment types, except wiper applicators, sponge bars and CDA equipment. When a drift control additive is used, read and carefully observe cautionary statements and all other information appearing on the additive label.

### **APPLICATION EQUIPMENT AND TECHNIQUES**

Do not apply this product through any type of irrigation system. This product may be applied with the following application equipment:

**Aerial** - Fixed Wing and Helicopter

**Ground Broadcast Spray** - Boom or boomless systems, pull-type sprayer, floaters, pick-up sprayers, spray coupes and other ground broadcast equipment.

**Hand-Held and High-Volume Spray Equipment** - Knapsack and backpack sprayers, pump-up pressure sprayers, handguns, handwands, mistblowers\*, lances and other hand-held and motorized spray equipment used to direct spray onto weed foliage.

\* THIS PRODUCT IS NOT REGISTERED IN CALIFORNIA OR ARIZONA FOR USE IN MISTBLOWERS.

**Selective Equipment** - Recirculating sprayers, shielded and hooded sprayers, wiper applicators and sponge bars.

**Injection Systems** - Aerial or ground injection sprayers.

**Controlled Droplet Applicators (CDA)** - Hand-held or boom-mounted applicators that produce a spray consisting of a narrow range of droplet sizes.

APPLY THESE SPRAY SOLUTIONS IN PROPERLY MAINTAINED AND CALIBRATED EQUIPMENT CAPABLE OF DELIVERING DESIRED VOLUMES.

### **AERIAL SPRAY DRIFT MANAGEMENT**

DRIFT MAY CAUSE DAMAGE TO ANY OTHER VEGETATION CONTACTED TO WHICH TREATMENT IS NOT INTENDED. TO PREVENT INJURY TO ADJACENT DESIRABLE VEGETATION, APPROPRIATE BUFFER ZONES MUST BE MAINTAINED.

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 and the grower are responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees. Where states have more stringent regulations, they must be observed.

The applicator must be familiar with and take into account the information covered in the **AERIAL SPRAY DRIFT MANAGEMENT** section.

#### **Importance of Droplet Size**

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversion sections of this label).

#### **Controlling Droplet Size**

- Volume - Use high flow rate nozzles to apply the highest practical spray volume.
- Nozzles with higher rated flows produce larger droplets.
- Pressure - Use the lower spray pressures specified for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of Nozzles - Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation - Orienting nozzles so that the spray is released backwards, parallel to the airstream, will produce larger droplets than other orientations. Significant deflection from the horizontal will reduce droplet size and increase drift potential.
- Nozzle Type - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles

- oriented straight back produce larger droplets than other nozzle types.
- Boom Length - For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.
- Application - Applications must not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

### **Swath Adjustment**

When applications are made with a cross-wind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance must increase, with increasing drift potential (higher wind, smaller drops, etc.).

### **Wind**

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application must be avoided below 2 mph due to variable wind direction and high inversion potential. Note: Local terrain can influence wind patterns. Every applicator must be familiar with local wind patterns and how they affect drift.

### **Temperature and Humidity**

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

### **Temperature Inversion**

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

### **Sensitive Areas**

Apply this product only when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

## **AERIAL EQUIPMENT**

DO NOT APPLY THIS PRODUCT USING AERIAL SPRAY EQUIPMENT EXCEPT UNDER CONDITIONS AS SPECIFIED WITHIN THIS LABEL.

Use the specified rates of this herbicide in 3 to 15 gallons of water per acre unless otherwise specified on this label. Unless otherwise specified, do not exceed 1 quart per acre. Aerial applications of this product may be made in annual cropping conventional tillage systems, fallow and reduced tillage systems, and preharvest applications. Refer to the individual use area sections of this label for specified volumes and application rates.

For aerial application in California and Fresno County California, refer to the **FOR AERIAL APPLICATION IN CALIFORNIA ONLY** and **FOR AERIAL APPLICATION IN FRESNO COUNTY CALIFORNIA ONLY** sections of this label for specific instructions, restrictions and requirements.

THIS PRODUCT plus DICAMBA TANK MIXTURES MAY NOT BE APPLIED BY AIR IN CALIFORNIA.

Avoid direct application to any body of water.

Avoid drift - do not apply during low-level inversion conditions, when winds are gusty or under any other condition which favors drift. Drift may cause damage to any other vegetation contacted to which treatment is not intended. To prevent injury to adjacent desirable vegetation, appropriate buffer zones must be maintained.

Coarse sprays are less likely to drift; therefore, do not use nozzles or nozzle configurations which dispense

spray as fine spray droplets. Do not angle nozzles forward into the airstream and do not increase spray volume by increasing nozzle pressure.

Ensure uniform application - To avoid streaked, uneven or overlapped application, use appropriate marking devices.

Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying and from spills. PROLONGED EXPOSURE OF THIS PRODUCT TO UNCOATED STEEL SURFACES MAY RESULT IN CORROSION AND POSSIBLE FAILURE OF THE PART. LANDING GEAR ARE MOST SUSCEPTIBLE. The maintenance of an organic coating (paint), which meets aerospace specification MIL-C-38413, may prevent corrosion.

### **FOR AERIAL APPLICATION IN CALIFORNIA ONLY**

This label must be in the possession of the user at the time of the herbicide application.

See **PRODUCT INFORMATION** and **MIXING DIRECTIONS** sections of this label for essential product performance information.

See the **CROPS** section of this label for specific recommendations on the use of this product.

EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OF SPRAY WITH FOLIAGE, GREEN STEMS, OR FRUIT OF DESIRABLE CROPS, PLANTS, TREES, OR OTHER DESIRABLE VEGETATION SINCE SEVERE DAMAGE OR DESTRUCTION MAY RESULT.

Aerial applications of this product are allowed in the following situations:

1. In fallow and reduced tillage systems prior to the emergence or transplanting of labeled crops.
2. In alfalfa and pasture renovation applications
3. Over-the-top applications in glyphosate tolerant corn and cotton
4. Preharvest in alfalfa, corn, cotton, wheat, glyphosate tolerant corn, and glyphosate tolerant cotton.

Do not plant subsequent crops other than those listed in this label for this product for 30 days following application.

When tank mixing this product with 2,4-D for aerial applications, only 2,4-D amine formulations may be used for fallow and reduced tillage systems and alfalfa and pasture renovation applications only.

When applied as specified, under the conditions described, this product controls annual and perennial weeds listed in this label.

DO NOT EXCEED A MAXIMUM RATE OF 2 QUARTS PER ACRE OF THIS PRODUCT WHEN MAKING APPLICATIONS BY AIR IN FALLOW AND REDUCED TILLAGE SYSTEMS.

DO NOT EXCEED A MAXIMUM RATE OF 1 QUART PER ACRE OF THIS PRODUCT WHEN MAKING APPLICATIONS BY AIR IN COTTON, PRIOR TO HARVEST.

### **AERIAL EQUIPMENT**

Use the specified rates of this product in 3 to 15 gallons of water per acre.

Do not apply to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

AVOID DRIFT - DO NOT APPLY WHEN WINDS ARE GUSTY OR UNDER ANY OTHER CONDITIONS WHICH FAVORS DRIFT. DRIFT MAY CAUSE DAMAGE TO ANY VEGETATION CONTACTED TO WHICH TREATMENT IS NOT INTENDED. TO PREVENT INJURY TO ADJACENT DESIRABLE VEGETATION, APPROPRIATE BUFFER ZONES MUST BE MAINTAINED.

Use the following guidelines when aerial applications are made near crops or desirable perennial vegetation after bud break and before total leaf drop, and/or near other desirable vegetation or annual crops.

1. Do not apply within 100 feet of all desirable vegetation or crop(s).
2. If wind up to 5 miles per hour is blowing toward desirable vegetation or crop(s), do not apply within 500 feet of the desirable vegetation or crop(s).
3. Winds blowing from 5 to 10 miles per hour toward desirable vegetation may require buffer zones in excess of 500 feet.
4. Do not apply when winds are in excess of 10 miles per hour or when inversion conditions exist.

Coarse sprays are less likely to drift; therefore, do not use nozzles or nozzle configurations which dispense spray as fine spray droplets. Do not angle nozzles forward into the airstream and do not increase nozzle pressure.

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.

**Ensure uniform application** - to avoid streaked, uneven or overlapped application, use appropriate marking devices.

Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying or from spills. **PROLONGED EXPOSURE OF THIS PRODUCT TO UNCOATED STEEL SURFACES MAY RESULT IN CORROSION AND POSSIBLE FAILURE OF THE PART. LANDING GEAR IS THE MOST SUSCEPTIBLE.** The maintenance of an organic coating (paint) which meets aerospace specification MIL-C-38413 may prevent corrosion.

### **FOR AERIAL APPLICATION IN FRESNO COUNTY, CALIFORNIA ONLY**

**From February 15 through March 31 Only**

This label must be in the possession of the user at the time of the herbicide application.

**EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OF THE SPRAY WITH FOLIAGE, GREEN STEMS, EXPOSED NON-WOODY ROOTS OR FRUIT OF DESIRABLE CROPS, PLANTS, TREES OR OTHER DESIRABLE VEGETATION, SINCE SEVERE DAMAGE OR DESTRUCTION MAY RESULT.**

See **PRODUCT INFORMATION** and **MIXING** sections of this label for essential product information.

#### **Applicable Area**

This supplement only applies to the area contained inside the following boundaries within Fresno County, California.

North: Fresno County line

South: Fresno County line

East: State Highway 99

West: Fresno County line

#### **Aerial Application in Fresno County, California Restrictions**

Always read and follow the label direction and precautionary statements for all products used in the aerial application.

Observe the following directions to minimize off-site movement during aerial application of this product.

Minimization of off-site movement is the responsibility of the grower, Pest Control Advisor and aerial applicator.

#### **Written Recommendations**

A written recommendation **MUST** be submitted by or on behalf of the applicator to the Fresno county Agricultural Commissioner 24 hours prior to the application. This written recommendation **MUST** state the proximity of surrounding crops, and that conditions of each manufacturer's product label and this label have been satisfied.

#### **Aerial Applicator Training and Equipment**

Aerial application of this product is limited to pilots who have successfully completed a Fresno County Agricultural Commissioner and California Department of Pesticide Regulation approved training program for aerial application of herbicides. All aircraft must be inspected, critiqued in flight and certified at a Fresno County Agricultural Commissioner approved fly-in. Test and calibrate spray equipment at intervals sufficient to insure that proper rates of herbicides and adjuvants are being applied during commercial use. Applicator must

document such calibrations and testing. Demonstration of performance at Fresno County Agricultural Commissioner approved fly-ins constitutes such documentation, or other written records showing calculations and measurements of flight and spray parameters acceptable to the Fresno County Agricultural Commissioner.

**Applications at Night** – Do not apply this product by air earlier than 30 minutes prior to sunrise and/or later than 30 minutes after sunset without prior permission from the Fresno County Agricultural Commissioner.

**Note:** For aerial application from April 1 through February 14, refer to the **FOR AERIAL APPLICATION IN CALIFORNIA ONLY** section of this label.

#### **ARKANSAS ONLY**

AVOID DRIFT. DO NOT APPLY INTO STILL AIR WHERE THERE IS A TEMPERATURE INVERSION LAYER LOW ENOUGH FOR FINE SPRAY PARTICLES TO BECOME SUSPENDED AND MOVE BEYOND THE TARGET AREA WHEN THE INVERSION LAYER MOVES. DO NOT APPLY WHEN WINDS ARE GUSTY OR UNDER ANY CONDITION THAT FAVORS DRIFT. DRIFT IS LIKELY TO CAUSE DAMAGE TO ANY VEGETATION CONTACTED. TO PREVENT INJURY TO ADJACENT DESIRABLE VEGETATION, APPROPRIATE BUFFER ZONES MUST BE MAINTAINED.

Use the specified rate of this product in 3 to 15 gallons of water per acre. Use sufficient carrier volume and appropriate equipment set-up to form droplets large enough to avoid drift potential. Use coarse droplets in the 300 to 500 (VMD) micron range.

Make applications with the nozzle release point at 8 to 15 feet above the top of the target plants, unless a greater height is required for aircraft safety. The distance of the outermost nozzles on the boom must not exceed 75% of the length of the wingspan or rotor. In many cases, reducing this to 65% of the wingspan or rotor will improve drift control without affecting the swath width.

Nozzles must always discharge backward parallel with the airstream, and never discharge downward more than 45 degrees on fixed-wing aircraft, or forward of the prevailing airflow on rotary wing aircraft. Avoid the use of nozzles with wide-angle discharge.

Do not apply this product when wind speed are in excess of 10 miles per hour. Do not apply when there is a low-level inversion where fine spray particles could be suspended and move outside the target area when the inversion layer moves. These conditions may occur when wind speeds are less than 2 mph.

Use the following guidelines when applications are made near crops or other desirable vegetation:

Do not apply within 100 feet of any desirable vegetation or crops.

If wind up to 5 mph is blowing toward desirable vegetation or crops, do not apply within 500 feet upwind of the desirable vegetation or crops.

Winds blowing from 5 to 10 mph toward desirable vegetation or crops will likely require buffer zones in excess of 500 feet.

#### **ARKANSAS, LOUISIANA, MISSISSIPPI, MISSOURI, AND TENNESSEE ONLY**

This product controls annual and perennial weeds listed on this label prior to planting or emergence of corn, cotton, rice, sorghum, and soybeans, and following the harvest of any crop in the fall via aerial applications in these locations.

Aerial applications of this product may be made in fallow systems and in conventional, reduced, and zero-tillage systems. For applications via aerial equipment, use the specified rates of this product in 3 to 10 gallons of water per acre. Do not exceed a rate of 3 quarts per acre.

The likelihood of injury to plants from use of this product is greatest when winds are gusty or in excess of 5 mph, or when other conditions, including lesser velocities, will allow spray drift to occur.

#### **Ground Broadcast Equipment**

Use the specified rates of this product in 3 to 40 gallons of water per acre as a broadcast spray unless otherwise specified. As density of weeds increases, increase spray volume within the specified range to ensure complete coverage. Carefully select proper nozzles to avoid spraying a fine mist. For best results with ground application equipment, use flat fan nozzles. Check for even distribution of spray droplets.



### **Hand-Held And High-Volume Equipment**

Apply to foliage of vegetation to be controlled. For applications made on a spray-to-wet basis, spray coverage must be uniform and complete. Do not spray to the point of runoff. Use coarse sprays only.

For control of weeds listed in the **ANNUAL WEEDS RATE TABLES**, apply a 0.5% solution of this product to weeds less than 6 inches in height or runner length. Apply prior to seedhead formation in grass or bud formation in broadleaf weeds. For annual weeds over 6 inches tall, or unless otherwise specified, use a 1% solution.

For best results, use a 2% solution on harder-to-control perennials, such as Bermuda grass, dock, field bindweed, hemp dogbane, milkweed and Canada thistle.

When using application methods which result in less than complete coverage, use a 5% solution for annual and perennial weeds and a 5 to 10% solution for woody brush and trees.

### **Selective Equipment**

This product may be applied through recirculating spray systems, shielded applicators, hooded sprayers, wiper applicators or sponge bars after dilution and thorough mixing with water to listed weeds growing in any noncrop site specified on this label and only when specifically specified in cropping systems.

A recirculating spray system directs the spray solution onto weeds growing above desirable vegetation, while spray solution not intercepted by weeds is collected and returned to the spray tank for reuse.

A shielded or hooded applicator directs the herbicide solution onto weeds, while shielding desirable vegetation from the herbicide.

A wiper or sponge applicator applies the herbicide solution onto the weeds by rubbing the weed with an absorbent material containing the herbicide solution.

### **AVOID CONTACT OF HERBICIDE WITH DESIRABLE VEGETATION.**

Contact of the herbicide solution to desirable vegetation may result in damage or destruction. Adjust applicators used above desirable vegetation so that the lowest spray stream or wiper contact point is at least 2 inches above the desirable vegetation. Droplets, mist, foam, or splatter of the herbicide solution settling on desirable vegetation may result in discoloration, stunting or destruction.

Make applications above the crops when the weeds are a minimum of 6 inches above the desirable vegetation. Better results may be obtained when more of the weed is exposed to the herbicide solution. Weeds not contacted by the herbicide solution will not be affected. This may occur in dense clumps, severe infestations or when height of the weeds varies so that not all weeds are contacted. In these instances, repeat treatments may be necessary.

### **Recirculating Spray Systems**

A recirculating spray system directs the spray solution onto weeds above desirable vegetation, while spray solution not intercepted by weeds is collected and returned to the spray tank for reuse.

### **Shielded and Hooded Applicators**

When applied under the conditions described in the following paragraphs for shielded and hooded applications, this product at specified rates will control those weeds listed in the "ANNUAL WEEDS RATE TABLE" and the "PERENNIAL WEEDS RATE TABLE" sections of this label. A hooded sprayer is a type of shielded applicator where the spray pattern is fully enclosed including top, sides, front, and back, thereby shielding desirable vegetation from the spray solution. Keep shields on these sprayers adjusted to protect desirable vegetation. When applying on raised beds, ensure that the hood is designed to completely enclose the spray solution. If necessary, extend the front and rear flaps to reach the ground in deep furrows. **EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OF HERBICIDE WITH DESIRABLE VEGETATION.**

This equipment must be set up and operated in a manner that avoids bouncing or raising the hoods off the ground in any way. If the hoods are raised, spray particles may come into contact with crop, causing damage or destruction of desirable vegetation. Avoid operation on rough or sloping ground where the hoods might be

raised off the ground.

Use hoods designed to minimize excessive dripping or runoff down the insides of the hoods. Use a single low pressure / low drift, flat fan nozzle with an 80 to 95 degree spray angle positioned at the top center of the hood. Use a spray volume of 20 to 30 gallons per acre.

The following procedures will reduce the potential for injury to desirable vegetation:

- The spray hoods must be operated on the ground or skimming across the ground
- Do not exceed 5 mph tractor speed
- Maximum wind speed 10 mph
- Use low drift nozzles that provide uniform coverage within the treated area

Injury to desirable vegetation can occur when it comes into contact the foliage of treated leaves. Do not apply when weed are growing in direct contact with desirable vegetation. Droplets, mist, foam, or splatter of the herbicide solution may contact desirable vegetation, and cause discoloration, stunting, or destruction.

### **Wiper Applicators and Sponge Bars**

Wiper applicators are devices that physically wipe appropriate amounts of this product directly onto the weed.

Equipment must be designed, maintained and operated to prevent the herbicide solution from contacting desirable vegetation. Operate this equipment at ground speeds no greater than 5 mph. Performance may be improved by reducing speed in areas of heavy weed infestations to ensure adequate wiper saturation. Better results may be obtained if 2 applications are made in opposite directions.

Avoid leakage or dripping onto desirable vegetation. Adjust height of applicator to ensure adequate contact of weeds. Keep wiping surfaces clean. Be aware that, on sloping ground, the herbicide solution may migrate, causing dripping on the lower end and drying of the wicks on the upper end of a wiper applicator.

Do not use wiper equipment when weeds are wet.

Mix only the amount of solution to be used during a 1-day period, as reduced activity may result from use of leftover solutions. Clean wiper parts immediately after using this product by thoroughly flushing with water.

Do not add surfactant to the herbicide solution.

**For rope or sponge wick applicators:** Mix 1 gallon of this product in 2 gallons of water to prepare a 33% solution. Apply this solution to weeds listed in this section.

**For porous-plastic applicators:** Solutions ranging from 33 to 100% of this product in water may be used in porous-plastic wiper applicators.

When applied as specified, this product **CONTROLS** the following weeds:

Corn, volunteer*	Sicklepod
Panicum, Texas	Spanishneedles
Rye, common	Starbur, bristly
Shattercane	

When applied as specified, this product **SUPPRESSES** the following weeds:

Beggarweed, Florida	Ragweed, common
Bermuda grass	Ragweed, giant
Dogbane, hemp	Smutgrass
Dogfennel	Sunflower
Guineagrass	Thistle, Canada
Johnsongrass	Thistle, musk
Milkweed	Vaseygrass
Nightshade, silverleaf	Velvetleaf
Pigweed, redroot	

\* Except volunteer glyphosate tolerant Corn.

### **Injection Systems**

This product may be used in aerial or ground injection spray systems. It may be used as a liquid concentrate or diluted prior to injecting into the spray stream. Do not mix this product with the concentrate of other products when using injection systems.

### **CDA Equipment**

The rate of this product applied per acre by vehicle-mounted CDA equipment must not be less than the amount specified in this label when applied by conventional broadcast equipment. For vehicle-mounted CDA equipment, apply 3 to 15 gallons of water per acre.

For the control of annual weeds with hand-held CDA units, apply a 20% solution of this product at a flow rate of 2 fluid ounces per minute and a walking speed of 1.5 mph (1 quart per acre). For the control of perennial weeds, apply a 20 to 40% solution of this product at a flow rate of 2 fluid ounces per minute and a walking speed of 0.75 mph (2 to 4 quarts per acre).

Controlled droplet application equipment produces a spray pattern that is not easily visible. Extreme care must be exercised to avoid spray or drift contacting the foliage or any other green tissue of desirable vegetation, as damage or destruction may result.

## **CROPS**

### **NON GLYPHOSATE TOLERANT CROPS**

NOTE: THIS SECTION GIVES DIRECTIONS THAT APPLY TO ALL CROPS LISTED BELOW, GROUPED ALPHABETICALLY. SEE THE INDIVIDUAL CROP CATEGORIES FOR SPECIFIC INSTRUCTIONS, PREHARVEST INTERVALS, AND ADDITIONAL PRECAUTIONS AND RESTRICTIONS.

Types of applications: Chemical fallow, preplant fallow beds, preplant, pre-emergence, at-planting, Selective equipment in row middles (hooded or shielded sprayers, or wiper applicators), and postharvest treatments.

### **Use Instructions:**

Apply this product during fallow intervals preceding planting, prior to planting or transplanting, at-planting, or pre-emergent to annual and perennial crops listed in this label, except where specifically limited. For any crop not listed in this label, applications must be made at least 30 days prior to planting. Unless otherwise specified, weed control applications may be made according to the rates listed in the annual, perennial and woody brush tables in this label. Repeat applications may be made up to a maximum of 8 quarts per acre per year.

Post-directed hooded sprayers and wiper equipment capable of preventing all crop contact with herbicide solutions may be used in mulched or un mulched row middles after crop establishment. Where specifically noted below, wipers may also be used above certain crops to control tall weeds. Refer to the

### **" Selective Equipment**

" section of this label for essential precautions when using hooded sprayers or wipers to avoid crop injury caused by leakage of spray mists or dripping onto crops. Crop injury is possible with these applications and shall be the sole responsibility of the applicator.

The maximum use rates stated throughout this product's labeling apply to this product combined with the use of all other herbicides containing glyphosate or sulfosate as the active ingredient, whether applied as mixtures or separately. Calculate the application rates and ensure that the total use of this and other glyphosate or sulfosate containing products does not exceed stated maximum use rate.

### **Precautions:**

Avoid contact of herbicide with foliage, green shoots or stems, bark, exposed roots (including those emerging from plastic mulch), or fruit of crops because severe injury or destruction may result. When making pre-emergence and at-planting applications, applications must be made before crop emergence to avoid severe crop injury. When applying this product prior to transplanting or direct-seeding crops into plastic mulch, take

care to remove residues of this product, which could cause crop injury, from the plastic prior to planting. Residues can be removed by a single 0.5 inch application of water, either by natural rainfall or via a sprinkler system. Broadcast applications made at emergence will result in injury or death to emerged seedlings. Apply before seed germination in coarse sandy soils to further minimize the risk of injury.

**Restrictions:**

Unless otherwise specified on this product's labeling, treatments with selective equipment including wipers and hooded sprayers must be made at least 14 days prior to harvest.

Postharvest or fallow applications must be made at least 30 days prior to planting any non-labeled crop. See "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label for additional information.

In crops where spot treatments are allowed, do not treat more than 10 percent of the total field to be harvested. The crop receiving spray in treated area will be killed. Avoid drift or spray outside the target area for the same reason.

For broadcast postemergent treatments, do not harvest or feed treated vegetation for 8 weeks following application, unless otherwise specified.

**Alfalfa, Clover, and Other Forage Legumes**

**Labeled crops:** Alfalfa, clover, kudzu, lespedeza, lupin, sainfoin, trefoil, velvet bean, vetch, crown vetch, milk vetch.

**Types of applications:** Dormant, preplant, pre-emergence, at-planting, spot treatment, wiper applications, renovation.

**Dormant (alfalfa only)**

**Use Instructions:** This product will control or suppress many weeds including quackgrass, downy brom, and cheatgrass in dormant alfalfa. Apply 8 - 12 ounces per acre of this product. Apply in spring to alfalfa that is dormant. Applications should be made after spring temperatures have warmed enough to encourage resumption of weed growth, but prior to initiation of trifoliate leaf expansion of the alfalfa. Applications made after expansion of the first trifoliate leaf of the alfalfa will cause reduced growth and reduction of crop yield.

**Precautions:** Do not use ammonium sulfate when spraying dormant alfalfa with Nasa . Slight discoloration of the alfalfa may occur, but the alfalfa will regreen and regrow under moist soil conditions as effects of this product wear off. Application of this product can cause crop injury. Any such crop injury is the responsibility of the applicator.

**Restrictions:** Do not use this product where a slight yield reduction in the first cutting of alfalfa cannot be tolerated. Do not make more than one application per year. Allow 36 hours after application before grazing livestock or harvesting.

**Preplant, Pre-emergence, and At-planting**

**Use instructions:** This product may be applied before, during or after planting alfalfa and clover. Applications must be made prior to emergence of the crop.

**Restrictions:** Remove domestic livestock before application and wait 8 weeks after application before grazing or harvesting.

**Spot Treatment or Wiper Applications (alfalfa and clover only)**

**Use instructions:** This product may be applied as a spot treatment in alfalfa or clover. This product may be applied with wiper applicators to control or suppress the weeds listed under **WIPER APPLICATORS** in the **SELECTIVE EQUIPMENT** section of this label. Applications may be made in the same area at 30-day intervals.

**Restrictions:** For spot treatment and wiper applications, apply in areas where the movement of domestic livestock can be controlled. Treat no more than one-tenth of an acre at one time. Remove domestic livestock before application and wait 14 days after application before grazing livestock or harvesting.

**Renovation**

**Use instructions:** This product may be applied as a broadcast spray to existing stands of alfalfa, clover, and other labeled forage legumes. Labeled crops may be planted into the treated area.

**Restrictions:** Remove domestic livestock before application and wait 8 weeks after application before grazing or harvesting.

**Asparagus**

**Types of applications:** Preplant, pre-emergence, spot treatment, postharvest.

**Preplant, Pre-emergence**

**Use instructions:** This product may be applied prior to the emergence of asparagus.

**Restrictions:** Do not apply within a week before the first spears emerge.

**Spot Treatment**

**Use instructions:** This product may be applied immediately after cutting, but prior to the emergence of new spears.

**Restrictions:** Do not treat more than 10 percent of the total field area to be harvested. Do not harvest within 5 days of treatment.

**Postharvest**

**Use instructions:** This product may be applied after the last harvest and all spears have been removed. If spears are allowed to regrow, delay application until ferns have developed. Apply delayed treatment as a directed or shielded spray in order to avoid contact of the spray with ferns, stems or spears.

**Precautions:** Direct contact of the spray with the asparagus may result in serious crop injury. Select and use specified types of spray equipment for post-emergence postharvest applications. A directed spray is any application where the spray pattern is aligned in such a way as to avoid direct contact of the spray with the crop. A shielded spray is any application where a physical barrier is positioned and maintained between the spray and the crop to prevent contact of spray with the crop.

**Cereal and Grain Crops**

**Labeled crops:** Barley, buckwheat, millet (pearl, proso), oats, rice, rye, teosinte, triticale, wheat (all), wild rice.

**Types of applications:** Preplant, pre-emergence, at-planting, spot treatment (except rice), postharvest, preharvest (wheat only), wiper applicators (wheat only).

Do not treat rice fields or levees when field contains flood water.

**Preplant, Pre-emergence and At-planting**

**Use instructions:** This product may be applied before, during or after planting of cereal crops. Applications must be made prior to emergence of the crop.

**Spot Treatment (except rice)**

**Use instructions:** This product may be applied as a spot treatment in cereal crops. Apply this product before heading in small grains.

**Precautions:** The crop receiving spray in the treated area will be killed. Take care to avoid drift or spray outside the target area for the same reason.

**Restrictions:** Do not treat more than 10% of the total field area to be harvested.

**Postharvest**

**Use instructions:** This product may be applied after harvest of cereal crops. Higher rates may be required for control of large weeds that were growing in the crop at the time of harvest. Tank mixtures with 2,4-D or dicamba may be used. The individual tank mix product must be registered for use on this site.

**Restrictions:** For any crop not listed on this label, applications must be made at least 30 days prior to planting the next crop. Do not harvest or feed treated vegetation for 8 weeks following application.

**Wiper Applications (wheat only)**

**Use instructions:** Wiper applications may be used in wheat. To control common rye or cereal rye, apply after the weeds have headed and achieved maximum growth, when the rye is at least 6 inches above the wheat crop.

**Restrictions:** Allow at least 35 days between application and harvest. Do not use roller applications.

**For nonselective control of listed annual weeds in small grain cropping systems (South Dakota only)**

**Use Instructions:** For ground applications, use 3 to 5 gallons of water per acre. For aerial applications, use 2 to 3 gallons of water per acre.

**Precautions:** The likelihood of injury occurring from the use of this product is greatest when winds are gusty or in excess of 5 miles per hour, or when other conditions, including lesser wind velocities, will allow spray drift to occur. Adjust boom height on ground equipment to prevent streaked, overlapped, or uneven applications. Avoid spraying when weeds are subject to moisture stress, when dust is on foliage, or when straw canopy covers the weeds.

### **Red Rice Control Prior to Planting Rice (Texas Only)**

**Use Instructions:** Apply 1.5 quarts of this product in 5 to 10 gallons of water per acre. Flush fields prior to application to obtain uniform germination and stand of red rice. Make application when the majority of red rice plants are in the 2-leaf stage and no more than 4 inches tall. Red rice plants with less than 2 true leaves may be only partially controlled.

**Precautions:** Avoid spraying during low humidity conditions, as reduced control may result.

**Restrictions:** DO NOT TREAT RICE FIELDS OR LEVEES WHEN THE FIELDS CONTAIN FLOOD WATER. DO NOT RE-FLOOD TREATED FIELDS FOR 8 DAYS FOLLOWING APPLICATION.

### **Christmas Trees and Ornamentals**

DO NOT USE THIS PRODUCT AS AN OVER-THE-TOP BROADCAST SPRAY IN ORNAMENTALS AND CHRISTMAS TREES.

**NOTE:** Desirable plants may be protected from the spray solution by using shields or coverings made of cardboard or other impermeable material.

When applied as instructed for the conditions described for **NON-CROP USES**, this product controls undesirable vegetation listed on this label prior to planting, within and around greenhouses and shadehouses, and as a postdirected spray around established ornamentals and Christmas trees.

For specific rates of application and instructions for control of various annual and perennial weeds, see the appropriate weeds rate table.

Where repeat applications are necessary, do not exceed 10.6 quarts of this product per year.

#### **Site Preparation**

Following preplant applications of this product, any ornamental or Christmas tree species may be planted. Take precautions to protect nontarget plants during site preparation applications.

### **Citrus Crops**

**Labeled crops:** Calamondin, chironja, citron, citrus hybrids, grapefruit, kumquat, lemon, lime, mandarin (tangerine), orange (all), pummelo, tangelo (ugli), tangor.

**Types of applications:** General weed control, middles (between rows of trees), strips (in row of trees), selective equipment

**NOTE:** FOR USE DIRECTIONS, SEE THE **TREE, NUT AND VINE CROPS** SECTION. THE FOLLOWING DIRECTIONS ARE SPECIFIC TO CITRUS CROPS.

**Florida and Texas only:** For burndown or control of the weeds listed below, apply the specified rates of this product in 3 to 30 gallons of water per acre. Where weed foliage is dense, use 10 to 30 gallons of water per acre.

For goatweed, apply 2 to 3 quarts of this product per acre. Apply in 20 to 30 gallons of water per acre when plants are actively growing. Use 2 quarts per acre when plants are less than 8 inches tall and 3 quarts when plants are greater than 8 inches tall. If goatweed is greater than 8 inches tall, the addition of Krovar® II or Karmex® may improve control. Refer to the individual product labels for specific crops, rates, geographic restrictions and precautionary statements.

#### **Perennial Weeds**

S = Suppression            B = Burndown  
PC = Partial Control        C = Control



Weed Species		Nasa Rate per Acre			
		1 QT	2 QT	3 QT	5 QT
Bermuda grass		B	-	PC	C
Guineagrass	Texas & Florida Ridge	B	C	C	C
	Florida Flatwoods	-	B	C	C
Paragrass		B	C	C	C
Torpedograss		S	-	PC	C

**Restrictions:** Allow a minimum of 1 day between last application and harvest.

#### **Conservation Reserve Program (CRP)**

**Types of applications:** Renovation (rotating out of CRP), site preparation, dormant, wiper.

#### **Rotating out of CRP, Site Preparation**

Use instructions: This product may be used to prepare CRP land for crop production.

#### **Dormant, Wiper**

**Restrictions:** This product may be used to suppress competitive growth and seed production of undesirable vegetation in CRP acres. Such applications may be made with wiper application equipment or as a broadcast or spot treatment to dormant CRP grasses. For selective applications with broadcast spray equipment, apply 12 to 16 fluid ounces of this product per acre in early spring before desirable CRP grasses, such as crested and tall wheatgrass, break dormancy and initiate green growth. Late fall applications can be made after desirable grasses have reached dormancy.

**Precautions:** Some stunting of CRP perennial grasses will occur if broadcast applications are made when plants are not dormant.

#### **Corn**

**Types of corn:** Field corn, seed corn, sweet corn and popcorn.

**Types of applications:** Preplant, pre-emergence, at-planting, spot treatment, postharvest.

#### **Preplant, Pre-emergence and At-planting**

**Use instructions:** This product may be applied before, during or after planting corn. Applications must be made prior to emergence of the crop.

The following tank mixtures may be applied before, during or after planting in conventional tillage systems, into a cover crop, established sod or in previous crop residue.

Apply these tank mixtures in 10 to 20 gallons of water or 10 to 60 gallons of nitrogen solution per acre. For Southern states, do not apply in nitrogen solutions to tough-to-control grasses such as barnyardgrass, fall panicum, broadleaf signalgrass, annual ryegrass and any perennial weeds. See the **ANNUAL WEEDS RATE TABLES** of this label for areas included in this recommendation.

2,4-D  
 ATRAZINE  
 ATRAZINE / DICAMBA  
 ATRAZINE / S-METOLACHLOR  
 ALACHLOR / ATRAZINE  
 ACETOCHLOR / ATRAZINE  
 DIMETHENAMID / ATRAZINE

S-METOLACHLOR  
 PINOXADEN  
 ISOXAFLUTOLE  
 DIMETHENAMID  
 ACETOCHLOR  
 ALACHLOR

DICAMBA  
 DIFLUFENZOPYR / DICAMBA  
 FLUFENACET / METRIBUZIN  
 LINURON  
 PENDIMETHALIN  
 FLUMETSULAM  
 SIMAZINE

For improved burndown, this product may be tank mixed with 2,4-D or dicamba.

Annual weeds: For difficult-to-control weeds such as fall panicum, barnyardgrass, crabgrass, shattercane and broadleaf signalgrass up to 2 inches tall, and Pennsylvania smartweed up to 6 inches tall, apply this product at 2 pints per acre in these tank mixtures. For other labeled annual weeds, apply 1 to 1.5 pints of this product per acre when weeds are less than 6 inches tall, and 2 to 3 pints when weeds are over 6 inches tall.

**Restrictions:** Applications of 2,4-D or dicamba must be made at least 7 days prior to planting. The individual tank mix product must be registered for use on this site.

THE TANK MIX RECOMMENDATIONS IN THIS SECTION ARE NOT REGISTERED IN CALIFORNIA.

### **Hooded Sprayers**

**Use instructions:** This product may be used through hooded sprayers for weed control between the rows of corn (all), including field corn, sweet corn and popcorn. Only hooded sprayers that completely enclose the spray pattern may be used. See additional instruction for the use of hooded sprayers in the

" **Selective Equipment**" section of this label.

**Precautions:** Contact of this product in any manner to any vegetation to which treatment is not intended may cause damage. Such damage shall be the sole responsibility of the applicator.

**Restrictions:** Corn must be at least 12 inches tall, measured without extending leaves. Do not apply more than 1 quart of this product per acre for each application and no more than 3 quarts per acre per year for hooded sprayer applications.

### **Spot Treatment**

**Use instructions:** For spot treatments, apply this product prior to silking of corn.

**Restrictions:** Do not treat more than 10 percent of total field area to be harvested. The crop receiving spray in the treated area will be killed. Take care to avoid drift or spray outside target area for the same reason.

### **Postharvest**

**Use instructions:** This product may be applied after harvest of corn. Higher rates may be required for control of large weeds which were growing in the crop at the time of harvest. Tank mixtures with 2,4-D or dicamba may be used. The individual tank mix product must be registered for use on this site.

**Restrictions:** Do not harvest or feed treated vegetation for 8 weeks following application.

## **Cotton**

**Types of applications:** Preplant, pre-emergence, at-planting, hooded sprayer, selective equipment, spot treatment.

### **Preplant, Pre-emergence, and At-planting**

**Use instructions:** This product may be applied before, during or after planting cotton. Applications must be made prior to emergence of the crop.

### **Hooded Sprayer, Selective Equipment**

**Use instructions:** This product may be applied through hooded sprayers, recirculating sprayers, shielded applicators or wiper applicators in cotton. Allow at least 7 days between application and harvest.

**Precautions:** See the **SELECTIVE EQUIPMENT** part of the **APPLICATION EQUIPMENT AND TECHNIQUES** section of this label for information on proper use and calibration of this equipment.

### **Spot Treatment**

**Use instructions:** For spot treatment, apply this product prior to boll opening of cotton.

**Restrictions:** Do not treat more than 10% of the total field area to be harvested. The crop receiving the spray in the treated area will be killed. Take care to avoid drift or spray outside target area for the same reason.

## **FALLOW SYSTEMS**

**Types of applications:** Chemical fallow, pre-plant fallow beds, aid-to-tillage.

### **Chemical Fallow**

**Use instructions:** This product may be applied during the fallow period prior to planting or emergence of any crop listed on this label, applications must be made at least 30 days prior to planting. This product may be used as a substitute for tillage to control annual weeds in fallow fields. Also, broadcast or spot treatments will control

or suppress many perennial weeds in fallow fields. Ground or aerial application equipment may be used. Tank mixtures with 2,4-D and dicamba may be used. The individual tank mix product must be registered for use on this site.

**Restrictions:** DO NOT APPLY DICAMBA OR 2,4-D TANK MIXTURES BY AIR IN CALIFORNIA.

Refer to specific product labels for crop rotation restrictions and cautionary statements of all products used in tank mixtures. Some crop injury may occur if Banvel is applied within 45 days of planting.

### **Preplant Fallow Beds**

**Use instructions:** This product may be applied to fallow beds prior to planting or emergence of any crop listed on this label. For any crop not listed on this label, applications must be made at least 30 days prior to planting. This product will control weeds listed in the annual, perennial and woody brush tables.

In addition, 12 fluid ounces of this product 2 to 3 ounces of Goal™ 2XL per acre will control the following weeds with the maximum height or length indicated: 3" - common cheeseweed, chickweed, groundsel; 6" - London rocket, shepherd's purse.

16 fluid ounces of this product 2 to 3 ounces of Goal 2XL per acre will control the following weeds with the maximum height or length indicated: 6" - common cheeseweed, groundsel, maretail (*Conyza canadensis*), 12" - chickweed, London rocket, shepherd's purse.

### **Aid-to-Tillage**

**Use instructions:** This product may be used in conjunction with tillage practices in fallow systems or preplant to labeled crops to control downy brome, cheat, volunteer wheat, tansy mustard and foxtail. Apply 8 fluid ounces of this product in 3 to 10 gallons of water per acre. Make applications before weeds are 6 inches in height. Application must be followed by conventional tillage practices no later than 15 days after treatment and before regrowth occurs. Allow at least 1 day after application before tillage.

**Precautions:** Tank mixtures with residual herbicides may result in reduced performance.

### **Grain Sorghum (Milo)**

**Type of applications:** Preplant, pre-emergence, at-planting, spot treatment, wiper applications, preharvest, postharvest.

### **Preplant, Pre-emergence, At-planting**

**Use instructions:** This product may be applied before, during or after planting grain sorghum. Applications must be made prior to emergence of the crop.

Apply these tank mixtures in 10 to 20 gallons of water or 10 to 60 gallons of nitrogen solution per acre:

ATRAZINE	S-METOLACHLOR
ATRAZINE / S-METOLACHLOR	ATRAZINE / ALACHLOR

For difficult to control annual weeds such as fall panicum barnyardgrass, crabgrass, shattercane and broadleaf signalgrass up to 2 inches tall, and Pennsylvania smartweed up to 6 inches tall, apply this product at 2 pints per acre in these tank mixtures. For other labeled annual weeds, apply 1.5 to 2 pints of this product per acre when weeds are less than 6 inches tall, and 2 to 3 pints when weeds are over 6 inches tall. When using nitrogen solutions as the carrier, the use rate may need to be increased for acceptable weed control.

### **Spot Treatment and Wiper Applications**

**Use instructions:** This product may be applied as a spot treatment in grain sorghum. Make spot treatments before heading of milo. This product may be applied with wiper applicators to control or suppress the weeds listed under **WIPER APPLICATORS** in the **SELECTIVE EQUIPMENT** section of this label.

**Restrictions:** For spot treatment, do not treat more than 10% of the total field area to be harvested. The crop receiving spray in treated area will be killed. Take care to avoid drift or spray outside target area for the same reason.

For wiper applicators, allow at least 40 days between application and harvest. Do not use roller applicators. Do not feed or graze treated milo fodder. Do not ensile treated vegetation.

### **Hooded Sprayers**

**Use instructions:** This product may be used through hooded sprayers for weed control between the rows of milo. Only hooded sprayers that completely enclose the spray pattern may be used. See additional instruction for the use of hooded sprayers in the "SELECTIVE EQUIPMENT" section of this label.

Crop injury may occur when the foliage of treated weeds comes into direct contact with leaves of the crop. Do not apply this product when the leaves of the crop are growing in direct contact with weeds to be treated. Droplets, mist, foam or splatter of the herbicide solution may contact the crop and cause discoloration, stunting or destruction.

**Precautions:** Treat before milo sends tillers between the drill rows. If such tillers are contacted with the spray solution, the main plant may be killed. Milo must be at least 12 inches tall, measured without extending leaves. Contact of this product in any manner to any vegetation to which treatment is not intended may cause damage. Such damage shall be the sole responsibility of the applicator.

**Restrictions:** Do not graze or feed milo forage or fodder following applications of this product through hooded sprayers. Do not apply more than 1 quart of this product per acre per application and no more than 3 quarts per acre per year for hooded sprayer applications.

### **Postharvest**

**Use instructions:** This product may be applied after harvest of grain sorghum. Higher rates may be required for control of large weeds that were growing in the crop at the time of harvest. Tank mixtures with 2,4-D or dicamba may be used. The individual tank mix product must be registered for use on this site.

This product may be applied to grain sorghum (milo) stubble following harvest to suppress or control regrowth. Apply 1 quart of this product per acre for control, or 1.5 pints of this product per acre for suppression.

**Restrictions:** Do not harvest or feed treated vegetation for 8 weeks following application.

### **Grass Seed or Sod Production**

**Labeled crops:** Any grass (Graminea family) except corn, sorghum, sugarcane and those listed in this label under "Cereal and Grain Crops".

**Types of applications:** Preplant, pre-emergence, at-planting, renovation, site preparation, shielded sprayers, wiper applications over-the-top, spot treatments, creating rows in annual ryegrass.

**Use instructions:** This product controls most existing vegetation prior to renovating turf or forage grass areas or establishing turf grass grown for sod. Make applications before, during, or after planting or for renovation. For maximum control of existing vegetation, delay planting to determine if any regrowth from escaped underground plant parts occurs. Where existing vegetation is growing under mowed turfgrass management, apply this product after omitting at least one regular mowing to allow sufficient growth for good interception of the spray. Where repeat treatments are necessary, sufficient regrowth must be attained prior to application. For warm-season grasses, such as bermudagrass, summer or fall applications provide best control. Broadcast equipment may be used to control sod remnants or other unwanted vegetation after sod is harvested.

**Precautions:** tillage or renovation techniques including vertical mowing, coring or slicing for 7 days after application to allow proper translocation into underground plant parts.

**Restrictions:** Do not disturb soil or underground plant parts before treatment. Delay If application rates total 3 quarts per acre or less, no waiting period between treatment and feeding or livestock grazing is required. If the rate is greater than 3 quarts per acre, remove domestic livestock before application and wait 8 weeks after application before grazing or harvesting. For any crop not listed for treatment in this label, applications must be made at least 30 days prior to planting. Applications must be made prior to the emergence of the crop to avoid crop injury.

### **Shielded Sprayers**

**Use instructions:** Apply 1 to 3 quarts of this product in 10 to 20 gallons of water per acre to control weeds between grass seed rows. Uniform planting in straight rows aid in shielded sprayer applications. Best results are obtained when the grass seed crop is small enough to easily pass by the protective shields. For additional instructions, see "Shielded and Hooded Applicators" in the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label.

**Precautions, restrictions:** Contact of this product in any manner to any vegetation to which treatment is

not intended may cause damage. To the extent consistent with applicable law, such damage shall be the sole responsibility of the applicator.

### **Wiper Applications Over-the-Top**

Use instructions: Adjust applicators so that the wiper contact point is at least 2 inches above the desirable vegetation. Weeds should be a minimum of 6 inches above the desirable vegetation. Better results may be obtained when more of the weed is exposed to the herbicide solution. Weeds not contacted by the herbicide solution will not be affected. This may occur in dense clumps, severe infestations, or when height of weeds varies so that not all weeds are contacted. In these instances, repeat treatments may be necessary. For additional instructions, see "Wiper Applicators" in the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label.

**Precautions:** Contact of the herbicide solution with desirable vegetation may result in damage or destruction.

### **Spot Treatments**

Use instructions: Use a 1.0 to 2.0% solution.

**Precautions:** Apply this product prior to heading of grasses grown for seed. The crop receiving the spray in the treated area will be killed. Take care to avoid drift or spray outside the target area for the same reason. Hand-held equipment may be used to control sod remnants or other unwanted vegetation after sod is harvested.

### **Creating Rows in Annual Ryegrass**

Use instructions: Use 1 to 2 pints of this product per acre. Use the higher rate when the ryegrass is greater than 6 inches tall. Best results are obtained when applications are made before the ryegrass reaches 6 inches in height.

**Restrictions:** Set nozzle heights to allow the establishment of the desired row spacing while preventing spray droplets, spray fines, or drift to contact the ryegrass plants not treated. Use of low pressure nozzles, or drop nozzles designed to target the application over a narrow band are required.

**To the extent consistent with applicable law, grower assumes all responsibility for crop losses from misapplication.**

## **Herbs**

**Types of herbs:** Peppermint, spearmint.

**Use instructions:** This product may be used as a spot treatment in spearmint and peppermint. Apply as a spray-to-wet treatment with hand-held equipment, including backpack and knapsack sprayers, pump-up pressure sprayers, handguns, hand wands or any other hand-held or motorized spray equipment used to direct the spray solution onto a limited area.

**Precautions:** The crop receiving spray in the treated area will be killed. Take care to avoid drift or spray outside the target area for this reason.

**Restrictions:** No more than one-tenth of any acre may be treated at one time. Allow at least 7 days between application and harvest. Further applications may be made in the same area at 30 day intervals

## **Pastures**

Labeled crops: Any grass (Gramineae family) except corn, sorghum, sugarcane and those listed in this label under "Cereal and Grain Crops". Grasses that may be treated include bahiagrass, bermudagrass, bluegrass, brome, fescue, guineagrass, kikuyu grass, orchardgrass, pangola grass, ryegrass, timothy, wheatgrass.

Types of applications: Preplant, pre-emergence, spot treatment, wiper applications over-the-top, pasture renovation, postemergent weed control (broadcast treatments).

### **Preplant, Pre-emergence and Pasture Renovation**

Use instructions: This product may be applied prior to planting or emergence of forage grasses. In addition, this product may be used to control perennial pasture species listed on this label prior to replanting. Precautions, restrictions: If application rates total 3 quarts per acre or less, no waiting period between treatment and feeding or livestock grazing is required. If the rate is greater than 3 quarts per acre, remove domestic livestock before application and wait 8 weeks after application before grazing or harvesting. Crops listed for treatment in this label may be planted into the treated area at any time; for other crops, wait 30 days between application and planting.



### **Spot Treatment and Wiper Applications Over-the-Top**

Use instructions: This product may be applied as a spot treatment or with wiper applicators in pastures. Applications may be made in the same area at 30-day intervals.

**Restrictions:** For spot treatments or wiper application methods using rates of 3 quarts per acre or less, the entire field or any portion of it may be treated. When spot treatments or wiper application are made using rates above 3 quarts per acre, no more than 10% of the total pasture may be treated at any one time. Remove domestic livestock before application and wait 7 days after application before grazing livestock or harvesting.

### **Postemergent Weed Control (Broadcast Treatments) •**

Use instructions: This product may be used to suppress competitive growth and seed production of annual weeds and undesirable vegetation in pastures. For selective applications with broadcast spray equipment, apply 12 to 16 fluid ounces of this product per acre in early spring before desirable perennial grasses break dormancy and initiate green growth. Late fall applications can be made after desirable perennial grasses have reached dormancy.

**Precautions:** Some stunting of perennial grasses will occur if broadcast applications are made when plants are not dormant.

**Restrictions:** No waiting period is required between application and grazing or harvesting for feed. Use of higher application rates will cause stand reductions. Do not apply more than 3 quarts per acre per year onto pasture grasses except for renovation uses (see instructions above). If replanting is needed due to severe stand reduction, applications must be made at least 30 days prior to planting any crop not listed for treatment in this label.

### **Rangelands**

#### **Types of applications:**

##### **Postemergence.**

This product will control or suppress many annual weeds growing in perennial cool and warm-season grass rangelands.

Preventing viable seed production is key to the successful control and invasion of annual grassy weeds in rangelands. Follow-up applications in sequential years should eliminate most of the viable seeds. Grazing of treated areas should be delayed to encourage growth of desirable perennials. Allowing desirable perennials to flower and reseed in the treated area will encourage successful transition.

Use instructions: Apply 12 to 16 fluid ounces of this product per acre to control or suppress many weeds, including downy brome, cheatgrass, cereal rye and jointed goatgrass in rangelands. Apply when most brome plants are in early flower and before the plants, including seedheads, turn color. Allowing for secondary weed flushes to occur in the spring following rain events further depletes the seed reserve and encourages perennial grass conversion on weedy sites. Fall applications are possible, and specified, where spring moisture is usually limited and fall germination allows for good weed growth.

For medusahead, apply 16 fluid ounces of this product per acre at the 3-leaf stage. Delaying applications beyond this stage will result in reduced or unacceptable control. Controlled burning may be useful in eliminating the thatch layer produced by slow decaying culms prior to application. Allow new growth to occur before spraying after a burn. Repeat applications in subsequent years may be necessary to eliminate the seedbank before reestablishing desirable perennial grasses in medusahead-dominated rangelands.

**Precautions:** Slight discoloration of the desirable grasses may occur, but they will regreen and regrow under moist soil conditions as effects of this product wear off.

**Restrictions:** Do not use ammonium sulfate when spraying rangeland grasses with this product. No waiting period between treatment and feeding or grazing of livestock is required. Do not apply more than 3 quarts per acre per year.

### **Peanuts**

**Types of applications:** Preplant, pre-emergence, at-planting.

**Use instructions:** This product may be applied before, during or after planting peanuts. Applications must be made prior to emergence of the crop.

### **SMALL FRUITS AND BERRIES**

**Labeled crops:** Blackberry, blueberry, boysenberry, cranberry, currant, dewberry, elderberry, gooseberry, huckleberry, loganberry, olallieberry, raspberry (black, red), youngberry.

**Types of applications:** Preplant, pre-emergence, directed spray (except cranberry), wiper application.



**Use instructions:** This product may be applied as a preplant or pre-emergence broadcast application or as a wiper application for crops listed in this section. Directed sprays may be applied to any crop except cranberries. For wick or wiper applicators, mix 1 gallon of this product in 4 gallons of water to prepare a 20% solution. In severe infestations, reduce equipment ground speed to ensure that adequate amounts of this product are wiped on the weeds. A second application in the opposite direction may be beneficial.

**Precautions:** Do not permit herbicide solution to contact desirable vegetation, including green shoots, canes and foliage.

**Restrictions:** Allow a minimum of 30 days between last application and harvest of cranberries. For other small fruits and berries, allow a minimum of 14 days between last application and harvest.

#### **Spot Treatment in Cranberry Production**

**Use instructions:** Spot treatments may be used to control weeds growing in dry ditches (interior and perimeter) of cranberry production areas. Hand-held sprayer or other appropriate application equipment listed under "APPLICATION EQUIPMENT AND TECHNIQUES" in this label may be used. Drop water level to remove standing water in ditches prior to application. In hand-held sprayers, use 1 to 2% solution of this product. Spray to wet vegetation, not to run-off.

**Precautions:** For treatments after draw down of water in dry ditches, allow 2 or more days after treatment before reintroduction of water to achieve maximum weed control. Apply this product within 1 day after draw down to ensure application to actively growing weeds.

**Restrictions:** Allow a minimum of 30 days between last application and harvest of cranberries. Do not apply this material through the irrigation system. Do not make applications by air. Do not apply directly to water. Use nozzles that emit medium to large-sized droplets to minimize drift in order to avoid crop injury.

#### **Postharvest Treatments in Cranberry Production**

**Use instructions:** Application of this product may be made after the harvest of cranberries to control weeds growing within the field. Best results will be obtained if applications are made to vines that appear dormant (after they have turned red). Hand-held sprayers, wipers, or other appropriate application equipment listed under "APPLICATION EQUIPMENT AND TECHNIQUES" in this label may be used. If using hand-held sprayers, use a 0.5 to 1 percent solution of this product. Spray to wet vegetation, not to run-off. If using hand-held boom sprayers, apply 2 to 4 quarts of this product per acre.

**Restrictions:** Make applications only after cranberries have been harvested. Do not treat more than 10% of the total bog. Allow a minimum of 6 months after last application and next harvest of cranberries. Do not apply this product through the irrigation system. Do not make applications by air. Do not apply directly to water. Even though vines appear dormant, contact of the herbicide solution with desirable vegetation may result in damage or severe plant injury. Cranberry plants that are directly sprayed may be killed.

#### **Soybeans**

**Types of applications:** Preplant, pre-emergence, at-planting, spot treatment, preharvest, selective equipment, hooded sprayers.

#### **Preplant, Pre-emergence and At-planting**

**Use instructions:** This product may be applied before, during or after planting soybeans. Applications must be made prior to emergence of the crop.

The following tank mixtures may be applied before, during or after planting in conventional tillage systems, into a cover crop, established sod or in previous crop residue.

CARFENTRAZONE-ETHYL	S-METOLACHLOR	PENDIMETHALIN / IMAZETHALPYR
2,6-DIISOPROPYLNAPHTHALENE	LINURON / CHLORIMURON- ETHYL	DIMETHENAMID
QUIZALOFOP-P-ETHYL	PENDIMETHALIN	FLUAZIFOP-P-BUTYL / FENOXAPROP-P-ETHYL
SULFENTRAZONE /	CHLORANSULAM-METHYL	METRIBUZIN

CHLORIMURON-ETHYL		
S-METOLACHLOR / METRIBUZIN	IMAZETHAPYR	ALACHLOR
METRIBUZIN / CHLORIMURON-ETHYL	FOMESAFEN	LINURON
CLOMAZONE	IMAZAQUIN	FLUMIOXAZIN
FLUFENACET / METRIBUZIN	MSMA	

For improved burndown, this product may be tank mixed with 2,4-D or 2,4-DB. See the 2,4-D label for intervals between application and planting.

**Annual weeds:** For difficult-to-control weeds such as fall panicum, barnyardgrass, crabgrass, shattercane and broadleaf signalgrass up to 2 inches tall, and Pennsylvania smartweed up to 6 inches tall, apply this product at 2 pints per acre in these tank mixtures. For other labeled annual weeds, apply 1 to 1.5 pints of this product per acre when weeds are less than 6 inches tall, and 2 to 3 pints when weeds are over 6 inches tall.

**Tank Mix Restrictions:** THE TANK MIX RECOMMENDATIONS IN THIS SECTION ARE NOT REGISTERED IN CALIFORNIA. The individual tank mix product must be registered for use on this site.

### Spot Treatment

**Use instructions:** For spot treatments, apply this product prior to initial pod set in soybeans.

**Precautions:** Take care to avoid drift or spray outside target area. The crop receiving spray in the treated area will be killed.

**Restrictions:** Do not treat more than 10% of the total field area to be harvested.

### Selective Equipment

**Use instructions:** This product may be applied through recirculating sprayers, shielded applicators, hooded sprayers, wiper applicators or sponge bars in soybeans. Allow at least 7 days between application and harvest.

**Precautions:** See the **SELECTIVE EQUIPMENT** part of the **APPLICATION EQUIPMENT AND TECHNIQUES** section of this label for information on proper use and calibration of this equipment.

### Sugarcane

**Types of applications:** Preplant, pre-emergence, spot treatment, fallow, hooded sprayers.

### Preplant, Pre-emergence

**Use instructions:** This product may be applied in or around sugarcane fields or in fields prior to the emergence of plant cane.

**Restrictions:** Do not apply to vegetation in or around ditches, canals or ponds containing water to be used for irrigation.

### Spot Treatment

**Use instructions:** This product may be applied as a spot treatment in sugarcane. For control of volunteer or diseased sugarcane, make a 1% solution of this product in water and spray to wet foliage of vegetation to be controlled when volunteer or diseased sugarcane has at least 7 new leaves.

**Precautions:** Avoid spray contact with healthy cane plants since severe damage or destruction may result.

**Restrictions:** Do not feed or graze treated sugarcane foliage following application.

### Fallow Treatments

**Use instructions:** This product may be used as a replacement for tillage in fields that are lying fallow between sugarcane crops. This product may also be used to remove the last stubble of ratoon cane. For removal of last stubble of ratoon cane, apply 4 to 5 quarts of this product in 10 to 40 gallons of water per acre to new growth having at least 7 new leaves. Allow 7 or more days after application before tillage.

### Hooded Sprayers

**Use instructions:** This product may be used through hooded sprayers for weed control between rows of sugarcane. A hooded sprayer is a type of shielded applicator. The spray pattern is completely enclosed on the top and all 4 sides by a hood, thereby shielding the crop from the spray solution.

Minimize the potential for spray particles to escape from under the hood by operating the sprayer at appropriate ground speeds, nozzle pressures and wind speeds. Operation on rough or sloping ground may result in spray

particles escaping from the hood.

When applying to sugarcane that is grown on raised beds, ensure that the hood is designed to completely enclose the spray. If necessary, extend the front and rear flaps of the hoods to reach the ground in furrows between the rows.

Equipment must be designed, maintained and operated to prevent the herbicide solution from contacting the crop. Contact of this product in any manner to any vegetation to which treatment is not intended may cause damage. **TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, SUCH DAMAGE SHALL BE THE SOLE RESPONSIBILITY OF THE APPLICATOR.**

**Precautions:** Droplets, mist, foam or splatter of the herbicide solution settling on the crop may result in discoloration, stunting or destruction.

**Restrictions:** Do not allow treated weeds to come in contact with the crop

## **SUNFLOWERS**

**Types of applications:** Preplant, pre-emergence.

**Use instructions:** This product may be applied before, during or after planting sunflowers. Applications must be made prior to the emergence of the crop.

**Restrictions:** Do not apply more than 1 quart of this product per acre for sunflowers. Make only one preplant or pre-emergent application per year. Do not feed or graze sunflower forage following application of this product.

## **Tree, Nut and Vine Crops**

**Labeled crops:** Grapes (raisin, table, wine), kiwi fruit, passion fruit, established citrus groves, tree fruit and tree nut groves, orchards, berries and vineyards.

Applications should not be made when green shoots, canes or foliage are in the spray zone. In the Northeast and Great Lakes regions, applications must be made prior to the end of bloom stage of grapes to avoid injury, or make applications with shielded sprayers or wiper equipment.

**Restrictions:** Allow a minimum of 14 days between last application and harvest in vine crops. Do not use selective equipment in kiwi.

**Types of applications:** General weed control, middles (between rows of trees), strips (in row of trees), selective equipment (except kiwi), perennial grass suppression.

**NOTE:** THIS SECTION GIVES GENERAL DIRECTIONS THAT APPLY TO ALL CITRUS CROPS, TREE FRUITS, TREE NUTS AND VINE CROPS. SEE THE INDIVIDUAL CROP SECTIONS FOR INSTRUCTIONS, PREHARVEST INTERVALS, PRECAUTIONS AND RESTRICTIONS FOR SPECIFIC CROPS.

### **Use Instructions:**

This product may be applied in middles, strips or for general weed control in established citrus groves, tree fruit and tree nut groves, orchards, berries and vineyards. It may also be used for site preparation prior to planting or transplanting of these crops. Apply 1 pint to 5 quarts per acre according to the "ANNUAL WEEDS RATE TABLE" and "PERENNIAL WEEDS RATE TABLE" sections of this label. Utilize rates at the higher end of the specified rate range when weeds are stressed, growing in dense populations or are greater than 12 inches tall. Repeat applications may be made up to a maximum of 10.6 quarts per acre per year.

**Precautions:** Extreme care must be exercised to avoid contact of herbicide solution, spray, drift or mist with foliage or green bark of trunk, branches, suckers, fruit or other parts of trees, canes and vines. Avoid applications when recent pruning wounds or other mechanical injury has occurred. Contact of this product with other than matured brown bark can result in serious crop damage or destruction. For applications in strips (within rows of trees), use only selective equipment (directed sprays, hooded sprayers, shielded applicators, or wipers) to minimize the potential for leakage or drift of herbicide sprays onto crops. See "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label for additional directions and precautions.

Allow a minimum of 3 days between application and transplanting.

**Restrictions:** Use only shielded or directed sprayers in crops with potential for crop contact, and then only where there is sufficient clearance.

For berry crops, hooded or shielded sprayers must be fully enclosed including top, sides, front and back. Only wiper or shielded applicators capable of preventing all contact with crop may be used.

The maximum use rates stated throughout this product's labeling apply to this product combined with the use of all other herbicides containing glyphosate or sulfosate as the active ingredient, whether applied as mixtures or

separately. Calculate the application rates and ensure that the total use of this and other glyphosate or sulfosate containing products does not exceed stated maximum use rate.

### **Middles (between rows)**

**Use instructions:** This product will control or suppress annual and perennial weeds and ground covers growing between the rows of labeled tree and vine crops. If weeds are under drought stress, irrigate prior to application. Reduced control may result if weeds have been mowed prior to application.

A tank mixture of this product + oxyfluorfen may be used for annual weeds in middles between rows of citrus crops, tree fruits, tree nuts and vine crops. This mixture is specified when weeds are stressed or growing in dense populations. 16 to 32 oz/A of this product 3 to 12 oz/A of Goal 2XL will control annual weeds with a maximum height or diameter of 6 inches, including crabgrass, hairy fleabane (*Conyza bonariensis*), common groundsel, junglerice, common lambsquarters, redroot pigweed, London rocket, common ryegrass, shepherd's purse, annual sowthistle, common cheeseweed (malva), filaree (suppression), horseweed/marestail (*Conyza canadensis*), stinging nettle and common purslane (suppression). 12 to 32 oz/A of this product 3 to 12 oz/A of oxyfluorfen will control common cheeseweed (malva) with a maximum height or diameter of 3 inches.

### **Strips (in rows)**

**Use instructions:** This product may be applied in rows of tree or vine crops and may also be tank mixed with the following products:

NAPROPAMIDE	SIMAZINE	DIURON
OXYFLUORFEN	BROMACIL / DIURON	NORFLURAZON
ORYZALIN	PENDIMETHALIN	

Do not apply these tank mixtures in Puerto Rico.

Refer to individual product labels for specific crops, rates, geographic restrictions and precautionary statements. The individual tank mix product must be registered for use on this site.

Apply 1 pint to 5 quarts of this product per acre in these tank mixtures. Use rates at the higher end of the specified rate range when weeds are stressed, growing in dense populations or are greater than 12 inches tall.

### **Perennial Grass Suppression**

This product will suppress perennial grasses such as bahiagrass, Bermuda grass, tall fescue, orchardgrass, Kentucky bluegrass, and quackgrass that are grown as ground covers in tree and vine crops.

For suppression of tall fescue, fine fescue, orchardgrass and quackgrass, apply 8 fluid ounces of this product in 10 to 20 gallons of water per acre.

For suppression of Kentucky bluegrass covers, apply 6 fluid ounces of this product per acre. Do not add ammonium sulfate.

For best results, mow cool season grass covers in the spring to even their height and apply this product 3 to 4 days after mowing.

For suppression of vegetative growth and seedhead inhibition of bahiagrass for approximately 45 days, apply 6 fluid ounces of this product in 10 to 25 gallons of water per acre. Apply 1 to 2 weeks after full green-up or after mowing to a uniform height of 3 to 4 inches. This application must be made prior to seedhead emergence.

For suppression up to 120 days, apply 4 fluid ounces of this product per acre, followed by an application of 2 to 4 fluid ounces per acre about 45 days later. Make no more than 2 applications per year.

For burndown of Bermuda grass, apply 1 to 2 quarts of this product in 3 to 20 gallons of water per acre. Use this treatment only if reduction of the Bermuda grass stand can be tolerated. When burndown is required prior to harvest, allow at least 21 days to ensure sufficient time for burndown to occur.

For suppression of Bermuda grass, apply 6 to 16 fluid ounces of this product per acre east of the Rocky Mountains and 16 fluid ounces of this product to the west of the Rocky Mountains. Apply in a total spray volume

of 3 to 20 gallons per acre, no sooner than 1 to 2 weeks after full green-up. If the Bermuda grass is mowed prior to application, maintain a minimum of 3 inches in height. Sequential applications may be made when regrowth occurs and Bermuda grass injury and stand reduction can be tolerated. East of the Rocky Mountains, use rates of 6 to 10 fluid ounces per acre in shaded conditions or where lesser degree of suppression is desired.

### **Selective Equipment**

Shielded and wiper applications may be used in tree crops and grapes. Refer to individual crop sections for time interval between application and harvest.

**PRECAUTIONS:** FOR ALL USES IN THIS SECTION, EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OF HERBICIDE SOLUTION, SPRAY, DRIFT OR MIST WITH FOLIAGE OR GREEN BARK OF TRUNK, BRANCHES, SUCKERS, FRUIT OR OTHER PARTS OF TREES AND VINES. CONTACT OF THIS PRODUCT WITH OTHER THAN MATURED BROWN BARK CAN RESULT IN SERIOUS CROP DAMAGE.

AVOID PAINTING CUT STUMPS WITH THIS PRODUCT AS INJURY RESULTING FROM ROOT GRAFTING MAY OCCUR IN ADJACENT TREES.

### **Cut Stump (tree crops)**

Use instructions: Cut stump applications of this product may be made during site preparation or site renovation, prior to transplanting tree crops. This product will control regrowth of cut stumps and resprouts of many types of tree species, some of which are listed below.

Citrus trees: Calamondin, chironja, citron, citrus hybrids, grapefruit, kumquat, lemon, lime, mandarin (tangerine), orange (all), pummel°, tangelo, tangor.

### **Tree Fruits**

**Labeled crops:** Apple, apricot, cherry (sweet, sour), crabapple, loquat, mayhaw, nectarine, olive, peach, pear, plum/prune (all), quince.

**Types of applications:** General weed control, middles (between rows of trees), strips (in row of trees), selective equipment.

**NOTE:** FOR USE DIRECTIONS, SEE THE **Tree, Nut and Vine Crops** SECTION. THE FOLLOWING DIRECTIONS ARE SPECIFIC TO TREE FRUITS.

### **Restrictions on Application Equipment:**

For cherries, any application equipment listed in this section may be used in all states.

For citron and olives, apply as a post-directed spray only.

Any application equipment listed in this section may be used in apricots, nectarines, peaches and plums/prunes growing in Arizona, California, Colorado, Idaho, Kansas, Kentucky, New Jersey, North Dakota, Oklahoma, Oregon, Texas, Utah and Washington, except for peaches grown in the states specified in the following paragraph. In all other states use wiper equipment only.

For peaches grown in Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina and Tennessee only, apply with a shielded boom sprayer or shielded wiper applicator, which prevents any contact of this product with the foliage or bark of trees. Apply no later than 90 days after first bloom. Applications made after this time may result in severe damage. Remove suckers and low-hanging limbs at least 10 days prior to application. Avoid applications near trees with recent pruning wounds or other mechanical injury. Apply only near trees that have been planted in the orchard for 2 or more years. EXTREME CARE MUST BE TAKEN TO ENSURE NO PART OF THE PEACH TREE IS CONTACTED.

**Restrictions:** Allow a minimum of 1 day between last application and harvest for apple, crabapple, loquat, mayhaw, pear and quince.

Allow a minimum of 17 days between last application and harvest for apricot, cherry, nectarine, olive, peach and plum/prune.

### **Tree Nuts**

**Labeled crops:** Almond, beechnut, Brazil nut, butternut, cashew, chestnut, chinquapin, filbert (hazelnut), hickory nut, macadamia, pecan, pistachio, walnut (black, English).



**Types of applications:** General weed control, middles (between rows of trees), strips (in row of trees), selective equipment.

**NOTE:** FOR USE DIRECTIONS, SEE THE **TREE, NUT AND VINE** SECTION. THE FOLLOWING DIRECTIONS ARE SPECIFIC TO TREE NUTS.

**Restrictions:** Allow a minimum of 3 days between last application and harvest of tree nuts.

#### **Tropical Crops**

**Labeled crops:** Atemoya, avocado, banana, Barbados cherry (acerola), breadfruit, canistel, carambola, cherimoya, cocoa beans, coconuts, coffee, dates, figs, guava, jaboticaba, jackfruit, longan, lychee, mango, marmaladebox (genip), papaya, passion fruit, persimmon, pineapple, plantain, pomegranate, sapodilla, sapote (black, marmey, white), soursop, sugar apple, tamarind, tea.

**Use instructions:** This product may be applied for general weed control or for site preparation prior to transplanting crops listed in this section. In coffee and banana, delay applications 3 months after transplanting to allow the new coffee or banana plant to become established.

**Restrictions:** Allow a minimum of 14 days between last application and harvest of acerola, atemoya, avocado, breadfruit, canistel, carambola, cherimoya, cocoa beans, coconuts, dates, figs, genip, jaboticaba, jackfruit, longan, lychee, mango, mayhaw, passion fruit, persimmon, pomegranate, sapodilla, sapote, soursop, sugar apple, tamarind and tea.

Allow a minimum of 28 days between last application and harvest of plantain and coffee.

Allow a minimum of 1 day between last application and harvest of banana, guava and papaya.

Do not feed or graze treated pineapple forage following application.

#### **Vegetable Crops**

**Labeled crops:** Amaranth, arugula, artichoke (Jerusalem), beans (all), beet greens, garden beets, broccoli (all), Brussels sprouts, cabbage (all), cabbage (Chinese), cantaloupe, cardoon, cavalo broccolo, carrot, cauliflower, casaba melon, celery, celery (Chinese), celeriac, celtuce, chard (Swiss), chayote, chervil, chick peas, chicory, chrysanthemum, collards, corn salad, crenshaw melon, cress, cucumber, dandelion, dock (sorrel), eggplant, endive, fennel (Florence), garlic, gherkin, ginseng, gourds, ground cherry, guar, honeydew melon, honey ball melon, horseradish, kale, kohlrabi, leek, lentils, lettuce, mango melon, melons (all), mizuna, muskmelon, mustard greens, okra, onion, oriental radish, parsley, parsnips, peas (all), pepinos, pepper (all), Persian melon, potato (Irish), pumpkin, purslane, radish, rape greens, rhubarb, rutabaga, salsify, shallot, spinach (all), mustard spinach, squash (summer, winter), sugar beets, sweet potato, tomatillo, tomato, turnip, watercress, watermelon, yams.

**Types of applications:** Chemical fallow, preplant fallow beds, preplant, pre-emergence, prior to transplanting vegetables, at-planting, selective equipment in row middles (hooded or shielded sprayers, or wiper applicators), directed applications (in nonbearing ginseng), over-the-top wipers (rutabagas only).

**Use instructions:** This product may be applied prior to the emergence of direct seeded vegetables or prior to transplanting vegetables.

**Precautions:** When applying this product prior to transplanting crops into plastic mulch, care must be taken to remove residues of this product from the plastic prior to transplanting.

**Restrictions:** Residues must be removed by a single 0.5 inch natural rainfall event or by applying at least 0.5 inch of water via a sprinkler system. For the following crops, apply only prior to planting. Allow at least 3 days between application and planting of cantaloupe, casaba melon, crenshaw melon, cucumber, eggplant, garlic, gherkin, gourds, ground cherry, honeydew melon, honey ball melon, mango melon, melons (all), muskmelon, pepper (all), Persian melon, pumpkin, squash (summer, winter), tomatillo, tomato, watercress, and watermelon.

**Nonbearing ginseng:** This product may be used for general weed control in established nonbearing ginseng. Direct applications so that there is no contact of this product with the ginseng plant. Applications may be made with boom equipment, CDA, shielded sprayers, hand-held and high-volume wands, lances, orchard guns or with wiper application equipment. Applications must be made at least one year prior to harvest. Extreme care must be exercised to avoid contact of herbicide solution, spray drift or mist with foliage or green bark of trunk, branches, suckers, fruit or other parts of desirable plants. Contact of this product with other than matured brown bark can result in serious crop damage.



Wiper applications may be used in rutabagas. Allow at least 14 days between application and harvest.

### **Farmsteads**

**Types of applications:** General non-selective weed control, trim-and-edge, chemical mowing, cut stumps, habitat management.

#### **Non-selective Weed Control, Trim-and-edge**

**Use instructions:** This product may be used to control annual weeds, perennial weeds and woody brush that are found in any part of the farmstead, including building foundations, along and in fences, in dry ditches and canals, along ditch banks, farm roads, shelterbelts, prior to landscape plantings and equipment storage areas.

This product may be tank mixed with the following products. Refer to these product labels for approved farmstead sites and application rates. For annual weeds, use 1 quart per acre of this product when weeds are less than 6 inches tall and 1.5 quarts per acre when weeds are greater than 6 inches tall. For perennial weeds, apply 2 to 5 quarts per acre in these tank mixes. For tank mixtures with these products through backpack sprayers, handguns or other high-volume spray-to-wet applications, see the **Hand-Held and High-Volume Spray Equipment** section of this label for specified rates.

DICAMBA MIXTURES MAY NOT BE APPLIED BY AIR IN CALIFORNIA.  
The individual tank mix product must be registered for use on this site.

#### **Chemical Mowing**

**Use instructions:** This product will suppress perennial grasses listed in this section to serve as a substitute for mowing. Apply this product at a rate of 6 to 8 fluid ounces per acre. Use 8 fluid ounces of this product per acre when treating tall fescue, fine fescue, orchardgrass or quackgrass covers. Use 6 fluid ounces of this product per acre when treating Kentucky bluegrass. Apply treatments in 10 to 20 gallons of spray solution per acre. Chemical mowing applications may be made along farm ditches and other parts of farmsteads.

**Precautions:** Use only in areas where some temporary injury or discoloration of perennial grasses can be tolerated.

#### **Cut Stumps**

**Types of application:** Treating cut stumps in any noncrop site listed on this label.

**Use instructions:** This product will control regrowth of cut stumps and resprouts of many types of woody brush and tree species. Apply this product using suitable equipment to ensure coverage of the entire cambium. Cut trees or resprouts close to the soil surface. Apply a 50 to 100% solution of this product to the freshly cut surface immediately after cutting. Delays in application may result in reduced performance. For best results, make applications during periods of active growth and full leaf expansion.

**Precautions:** Do not make cut stump applications when the roots of desirable woody brush or trees may be grafted to the roots of the cut stump. Some sprouts, stems or trees may share the same root system. Adjacent trees having a similar age, height and spacing may signal shared roots. Whether grafted or shared, injury is likely to occur to non-treated stems / trees when one or more trees sharing common roots are treated.

#### **Habitat Management:**

Types of uses: Habitat restoration and Maintenance, wildlife food plots.

#### **Habitat Restoration and Maintenance**

**Use instructions:** This product may be used to control exotic and other undesirable vegetation in habitat management areas. Applications can be made to allow recovery of native plant species, prior to planting desirable native species, and for similar broad spectrum vegetation control requirements in habitat management areas. Spot treatments can be made to selectively remove unwanted plants for habitat maintenance and enhancement. The tank mixtures listed in this "NONCROP USES AROUND THE FARMSTEAD" section of this label may be used for habitat restoration and maintenance.

#### **Wildlife Food Plots**

**Use instructions:** This product may be used as a site preparation treatment to control annual and perennial

weeds prior to planting wildlife food plots. Any wildlife food species may be planted after applying this product, or native species may be allowed to repopulate the area. If tillage is needed to prepare a seedbed, wait 7 days after application before tillage.

### NON-CROP USES

See **PRODUCT INFORMATION**, **MIXING INSTRUCTIONS** and **APPLICATION EQUIPMENT AND TECHNIQUES** sections of this label for essential product performance information and the following **NON-CROP USES** sections for specific specified uses.

EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OF SPRAY WITH FOLIAGE, GREEN STEMS, EXPOSED NON-WOODY ROOTS OR FRUIT OF CROPS, DESIRABLE TURFGRASSES, TREES, SHRUBS OR OTHER DESIRABLE VEGETATION SINCE SEVERE DAMAGE OR DESTRUCTION MAY RESULT.

Repeat treatments may be necessary to control weeds regenerating from underground parts or seeds.

Where repeat applications are necessary, do not exceed 10.6 quarts of this product per acre per year.

This product does not provide residual weed control. For subsequent weed control, follow a label-approved herbicide program.

Read and carefully observe all cautionary statements and all other information appearing on the labels of all herbicides used.

### INDUSTRIAL, RECREATIONAL AND PUBLIC AREAS

When applied as directed for **NON-CROP USES**, under conditions described, this product controls annual and perennial weeds listed on this label growing in areas including airports, ditch banks, dry ditches, dry canals, fencerows, golf courses, highways, industrial plant sites, lumberyards, parking areas, parks, petroleum tank farms and pumping installations, pipelines, power and telephone rights-of-way, railroads, roadsides, schools, storage areas, utility substations..

For specific rates of application and instructions for control of various annual and perennial weeds and woody brush and trees, see the weeds rates tables.

This product may be applied with recirculating sprayers, shielded applicators, or wiper applicators in any noncrop site specified on this label. See the **SELECTIVE EQUIPMENT** part of the **APPLICATION EQUIPMENT AND TECHNIQUES** section of this label for information on proper use and calibration of this equipment.

### Tank Mixtures for Industrial Sites and Forestry Site Preparations

#### Nasa + Sulfometuron

Use on industrial sites including airports, industrial plants, lumberyards, petroleum tank farms, pumping stations, pipelines, railroads, roadsides.

This tank mixture may also be used as a site preparation treatment for sites to be planted to jack pine, loblolly pine, red pine, slash pine and Virginia pine.

When applied as directed for **NON-CROP USES** under the conditions described, this product Sulfometuron-methyl provides control of annual weeds listed in this product label and in the Sulfometuron-methyl label, and control or partial control of the perennial weeds listed below.

Apply 1 to 2 quarts of this product with 2 to 4 ounces of Sulfometuron-methyl in 10 to 40 gallons of spray solution per acre as a broadcast spray to actively growing weeds.

This mixture may be applied by aerial equipment in site prep operations. When applied by air, use the specified rates in 5 to 15 gallons of spray solution per acre.

THIS PRODUCT + SULFOMETURON-METHYL TANK MIXTURES MAY NOT BE APPLIED BY AIR IN CALIFORNIA.

For control of annual weeds, use the lower rates of these products.

For control on the listed perennial weeds, use the higher rates of both products. For partial control, use the lower rates.

#### Bahiagrass

*Paspalum notatum*

#### Dogfennel

*Eupatorium capilliflorum*

#### Quackgrass

*Elytrigia repens*

#### Bermuda grass\*

*Cynodon dactylon*

#### Fescue, tall

*Festuca arundinacea*

#### Trumpetcreeper\*

*Campsis radicans*

**Broomsedge**  
*Andropogon virginicus*

**Johnsongrass\*\***  
*Sorghum halepense*

**Vaseygrass**  
*Paspalum urvillei*

**Dock, curly**  
*Rumex crispus*

**Poorjoe\*\***  
*Diodia teres*

**Vervain, blue**  
*Verbena hastata*

\* Suppression at higher rates only.

\*\* Control at the lower rates.

Read and carefully observe the cautionary statements and all other information appearing on the labels of all herbicides used.

### **Tank Mixtures - Non-crop Sites**

When applied as a tank mixture, this product provides control of the emerged annual weeds and partial control of the emerged perennial weeds listed in this label. When applied as a tank mixture, the following residual herbicides will provide preemergence control of the weeds listed in the individual product labels.

**Nasa + DIURON**

**Nasa + BROMACIL / DIRUON**

**Nasa + SIMAZINE**

**Nasa + ORYZALIN**

Read and carefully observe the label claims, cautionary statements, specified use rates and all other information on the labels of all products used in these tank mixtures. Use according to the most restrictive label directions for each product in the mixture. The individual tank mix product must be registered for use on this site.

### **Control of Emerged Weeds**

**NOTE:** For backpack sprayer and handgun applications, see the **HAND-HELD AND HIGH-VOLUME EQUIPMENT** section for specified rates.

**Annual weeds:** Apply 1 quart per acre of this product in these tank mixtures when weeds are less than 6 inches tall and 1.5 quarts per acre when weeds are more than 6 inches tall.

**Perennial weeds:** For partial control of perennial weeds using tank mixtures, apply 2 to 5 quarts per acre of this product. Follow the recommendations in the **PERENNIAL WEEDS RATE TABLE** for stage of growth and rate of application for specific perennial weeds.

### **Preemergence Weed Control**

For preemergence weed control, refer to the individual product labels for specific non-crop sites, rates, carrier volumes and precautionary statements.

Mix only the quantity of spray solution that can be used during the same day. Do not allow these tank mixtures to stand overnight as this may result in reduced weed control.

Apply these tank mixtures through conventional broadcast equipment only.

### **Farm Ditches**

This product will suppress perennial grasses along farm ditches. Apply this product at a rate of 6 to 8 fluid ounces per acre. Use 8 fluid ounces per acre when treating tall (coarse) fescue, fine fescue, orchardgrass or quackgrass covers. For best suppression of these species, add ammonium sulfate at a rate of 1.7 pounds per 10 gallons of spray solution. Use 6 fluid ounces per acre without ammonium sulfate when treating Kentucky bluegrass.

Apply treatments in 10 to 20 gallons of spray solution per acre to actively growing perennial grass covers. For best spray distribution and coverage, use flat fan nozzles.

Where broadleaf weed control or suppression is desired, tank mix this product with the appropriate, labeled broadleaf weed herbicide.

### **HABITAT MANAGEMENT**

This product is registered for the restoration and/or maintenance of native habitats and in wildlife management areas. Apply as specified in the **NON-CROP USES** section of this label.

### Habitat Restoration and Maintenance

When applied as directed, exotic and other undesirable vegetation may be controlled in habitat management areas. Applications can be made to allow recovery of native plant species, prior to planting desirable native species, and for similar broad spectrum vegetation control requirements in habitat management areas. Spot treatments can be made to selectively remove unwanted plants for habitat maintenance and enhancement. For spot treatments, keep spray off of desirable plants.

### Wildlife Food Plots

This product may be used as a site preparation treatment prior to planting wildlife food plots. Any wildlife food species may be planted after applying this product, or native species may be allowed to repopulate the area. If tillage is needed to prepare a seedbed, wait 7 days after applying this product before tilling.

### Greenhouse / Shadehouse Use

This product may be used to control weeds listed on this label that are growing inside greenhouses. Desirable vegetation must not be present during application and air circulation fans must be turned off.

### Postdirected Spray

Use as a postdirected spray around established woody ornamental species or Christmas trees including those listed below. Care must be exercised to avoid contact of spray, drift or mist with foliage or green bark of established ornamental species.

#### Arborvitae

*Thuja spp.*

#### Jobba

*Simmondsia chinensis*

#### Oak

*Quercus spp.*

#### Azalea

*Rhododendron spp.*

#### Hollies

*Ilex spp.*

#### Privet

*Ligustrum spp.*

#### Boxwood

*Buxus spp.*

#### Lilac

*Syringa spp.*

#### Pine

*Pinus spp.*

#### Crabapple

*Malus spp.*

#### Magnolia

*Magnolia spp.*

#### Spruce

*Picea spp.*

#### Euonymus

*Euonymus spp.*

#### Maple

*Acer spp.*

#### Yew

*Taxus spp.*

#### Fir

*Abies spp.*

*Pseudotsuga spp.*

### SILVICULTURAL SITES AND RIGHTS-OF-WAY

**NOTE:** NOT SPECIFIED FOR USE AS AN OVER-THE-TOP BROADCAST SPRAY IN SILVICULTURAL NURSERIES.

When applied as directed for **Non-Crop Uses** under conditions described, this product controls undesirable vegetation listed on this label. This product also suppresses or controls undesirable vegetation listed on this label when applied at specified rates for release of established coniferous species listed on this label.

For specific rates of application and instructions for control of various brush, annual and perennial weeds, see the appropriate weeds rate table. For specific rates of application for release of listed coniferous species, see the **Conifer Release** part of this section of this label.

Where repeat applications are necessary, do not exceed 10.6 quarts of this product per acre per year.

### Aerial Application

This product may be applied using aerial spray equipment for silvicultural site preparation, conifer release and rights-of-way treatments. See the **Application Equipment And Techniques** part of the **MIXING DIRECTIONS** section of this label for information on how to apply this product by air.

DO NOT APPLY THIS PRODUCT BY AIR TO RIGHTS-OF-WAY SITES IN THE STATE OF CALIFORNIA.

To reduce the aerial application drift hazard to aquatic sites\*, to nontarget sites or any site containing desirable vegetation, always maintain appropriate buffer zones. A buffer zone of the following minimum distances must be maintained:

- Helicopters using a Microfoil™ boom, a Thru-Valve™ boom (TVB-45), or equivalent drift control systems, should maintain at least a 50-foot buffer zone.
- When using other aerial equipment:
  - a. Maintain at least a 75-foot buffer zone for applications using 2 quarts or less per acre of this product.
  - b. Maintain at least a 125-foot buffer zone for applications using more than 2 quarts per acre of this product.
  - c. Maintain at least a 400-foot buffer zone for applications on rights-of-way when applied from 75 feet or more above ground level.

These distances must be increased if conditions favoring drift exist.

\*Aquatic sites include all lakes, ponds and streams used for significant domestic purposes or angling.

### Site Preparation

Following preplant applications of this product, any silvicultural species may be planted.

### Postdirected Spray

In established silvicultural sites, use a spray on the foliage of undesirable vegetation. Care must be exercised to avoid contact of spray, drift or mist with foliage or green bark of desirable species.

### Conifer Release

For release, apply only where conifers have been established for more than one year. Do not disturb vegetation prior to treatment or until visual symptoms appear after treatment. Symptoms of treatment are slow to appear, especially in woody species treated in late fall. Injury may occur to conifers treated for release, especially where spray patterns overlap or the higher rates are applied or when applications are made during periods of active conifer growth.

Applications must be made after formation of final conifer resting buds in the fall or prior to initial bud swelling in spring. Some autumn colors on undesirable deciduous species are acceptable provided no major leaf drop has occurred. Use the following rates for conifer release to control or partially control the weeds listed in this label.

#### For release of the following conifer species:

##### **Douglas fir**

*Pseudotsuga menziesii*

##### **Hemlock**

*Tsuga spp.*

##### **Spruce**

*Picea spp.*

##### **Fir**

*Abies spp.*

##### **Pines\***

*Pinus spp.*

\* Includes all species except Eastern white pine, loblolly pine or slash pine.

Apply 1.5 to 2 quarts of this product per acre except in Washington and Oregon, west of the crest of the Cascade Mountains. For spring treatments west of the crest of the Cascade Mountains, apply 1 quart of this product per acre before conifer bud swell for control of annual weeds. For fall treatments in Washington and Oregon, west of the crest of the Cascade Mountains, apply 1 to 1.5 quarts of this product per acre before any major leaf drop of deciduous species.

For release of western hemlock, apply 1 quart of this product per acre.

#### For release of the following conifer species:

##### **Loblolly pine**

*Pinus taeda*

##### **Eastern white pine**

*Pinus strobus*

##### **Slash pine**

*Pinus elliottii*

**Late season application** - Apply 1.5 to 2 quarts of this product in a minimum of 5 gallons of spray solution per acre in early autumn. Applications made prior to September 1 or when conditions are conducive to rapid growth of conifers will create the potential for increased injury in the form of tip and/or needle burn. Injury may decrease with later applications. Some autumn colors are acceptable at the time of application. Apply prior to frost or leaf

drop of undesirable plants. Applications made according to label directions will release loblolly pine, eastern white pine and slash pine by reducing competition from the following species:

<b>Ash</b> <i>Fraxinus spp.</i> <b>Cherry:</b> <b>black</b> <i>Prunus serotina</i> <b>pin</b> <i>Prunus pensylvanica</i> <b>Elm</b> <i>Ulmus spp.</i> <b>Hawthorn</b> <i>Crataegus spp.</i> <b>Locust, black</b> <i>Robina pseudoacacia</i>	<b>Maple, red</b> <i>Acer rubrum</i> <b>Persimmon</b> <i>Diospyros spp.</i> <b>Poplar, yellow</b> <i>Liriodendron tulipifera</i> <b>Oak:</b> <b>black</b> <i>Quercus velutina</i> <b>post</b> <i>Quercus stellata</i> <b>southern red</b> <i>Quercus falcata</i> <b>white</b> <i>Quercus alba</i>	<b>Sassafras</b> <i>Sassafras albidum</i> <b>Sourwood</b> <i>Oxydendrum arboreum</i> <b>Sumac:</b> <b>poison</b> <i>Rhus vernix</i> <b>smooth</b> <i>Rhus glabra</i> <b>winged</b> <i>Rhus copallina</i> <b>Sweetgum</b> <i>Liquidambar styraciflua</i>
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Apply only to those sites where woody brush and trees listed in this label constitute the majority of the undesirable species.

#### **Nasa + sulfometuron-methyl Tank Mixtures for Conifer Release from Herbaceous Weeds**

To release **loblolly pines** from herbaceous weeds, tank mixtures of this product with Sulfometuron-methyl will provide control of annual weeds listed in this product label and in the Sulfometuron-methyl label, and partial control of the perennial weeds listed below.

Apply 16 to 24 fluid ounces of this product with 2 to 4 ounces of sulfometuron-methyl in 10 to 30 gallons of spray solution per acre. Make application to actively growing weeds as a broadcast spray over the top of the young loblolly pines.

THIS PRODUCT + SULFOMETURON-METHYL TANK MIXTURES MAY NOT BE APPLIED BY AIR IN CALIFORNIA.

This tank mixture may be applied using aerial equipment. When applying by air, use the specified rate in 5 to 15 gallons of spray solution per acre.

For control of annual weeds below 12 inches in height (or runner length on annual vines), use the lower rates of both products. Use higher rates of both products when annual weeds are in more advanced stages of growth and approaching flower or seed formation.

Use the higher rates of both products for partial control of the following perennial weeds. Use the lower rates for suppression of growth.

**Bahiagrass**  
*Paspalum notatum*

**Fescue, tall**  
*Festuca arundinacea*

**Trumpet creeper\*\***  
*Campsis radicans*

**Broomsedge**  
*Andropogon virginicus*

**Johnsongrass\***  
*Sorghum halepense*

**Vaseygrass**  
*Paspalum urvillei*

**Dock, curly**  
*Rumex crispus*

**Poorjoe\***  
*Diodia teres*

**Vervain, blue**  
*Verbena hastata*

**Dogfennel**  
*Eupatorium capilliflorum*

\* Control at higher rates.

\*\* Suppression at higher rates only.

Pine damage may occur or can be accentuated if treatment takes place when young trees are under stress from drought, flood water, insects or disease.

Read and observe the cautionary statements and all other information appearing on the labels of all herbicides used.



## **GLYPHOSATE TOLERANT CROPS**

The following instructions include all applications which can be made onto the specified glyphosate tolerant crops during the complete cropping season. Do NOT combine these instructions with those listed for crop varieties that do not contain the genetic modification to be glyphosate tolerant, in the sections of this label that do not specify glyphosate tolerant crops.

Applying this product to crop varieties that are not designated as glyphosate tolerant will result in severe crop injury and yield loss. Avoid contact with foliage, green stems, or fruit of crops, or any desirable plants that do not contain a glyphosate tolerant gene, since severe injury or destruction will result.

**For Ground Applications with broadcast equipment**, apply this product in 5 to 20 gallons of spray solution per acre. Carefully select proper nozzle and spray pressure to avoid spraying a fine mist. For best results with ground application equipment use flat spray nozzles. Check for even distribution of spray droplets.

**For Aerial Applications** apply this product in 3 to 15 gallons of water per acre. See the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label for procedures to avoid spray drift that may cause injury to any vegetation not intended for treatment. Use of appropriate buffer zones will help prevent injury to adjacent vegetation.

**ATTENTION: AVOID DRIFT. EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS WHICH DO NOT CONTAIN A GLYPHOSATE TOLERANT GENE.**

See the "MIXING and APPLICATION EQUIPMENT AND TECHNIQUES" sections of this label for additional directions and restrictions on the application of this product.

Tank mixtures with other herbicides, insecticides, fungicides, micronutrients or fertilizers may result in reduced weed control or crop injury and are NOT to be used for over-the-top applications of this product unless otherwise specified in this product label.

Ammonium sulfate may be mixed with this product for applications to glyphosate tolerant crops. Refer to the "MIXING" section for USE DIRECTIONS for ammonium sulfate.

Sprayer Preparation: It is important that sprayer and mixing equipment be clean and free of pesticide residue before making applications of this product. Follow the cleaning procedures specified on the label of the product(s) previously used.

**THOROUGHLY CLEAN THE SPRAY TANK AND ALL LINES AND FILTERS TO ELIMINATE POTENTIAL CONTAMINATION FROM OTHER HERBICIDES PRIOR TO MIXING AND APPLYING THIS PRODUCT.**

**NOTE:** The following Use Directions are based on a clean start at planting by using a burndown application or tillage to control existing weeds before crop emergence. In no-till and stale seedbed systems, use a preplant burn-down treatment of this product to control existing weeds prior to crop emergence. Some weeds, such as black nightshade, broadleaf signalgrass, sicklepod, Texas panicum, sandbur, annual morningglory, woolly cupgrass, shattercane, wild proso millet, burcucumber, and giant ragweed with multiple germination times or suppressed (stunted) weeds may require a second

application of this product for complete control. The second application should be made after some regrowth has occurred and at least 10 days after a previous application of this product.

GLYPHOSATE TOLERANT ALFALFA		
FOR POSTEMERGENCE APPLICATION ONLY ON ALFALFA VARIETIES DESIGNATED AS CONTAINING A GLYPHOSATE TOLERANT GENE. The glyphosate tolerant designation indicates that the alfalfa contains a patented gene, which provides tolerance to this product. Information on glyphosate tolerant alfalfa varieties may be obtained from your seed supplier. Glyphosate tolerant crop varieties must be purchased from an authorized licensed seed supplier.		
TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS

<p>Pre-plant, At-planting, Pre-emergence and Post-emergence</p>	<p>This product will control many troublesome emerged weeds with over-the-top applications in glyphosate tolerant alfalfa. For ground applications with broadcast equipment, apply this product in 3 to 40 gallons of spray solution per acre. Carefully select proper nozzle and spray pressure to avoid spraying a fine mist. For best results with ground application equipment, use flat fan nozzles. Check for even distribution of spray droplets. For aerial application: Use the labeled rates of this product in 3 to 15 gallons of spray solution per acre.</p> <p><b>A. New Stand Establishment (seeding year)</b> Prior to First Cutting During New Stand Establishment: From emergence up to 4 trifoliolate leaves 2.0 quarts per acre. From 5 trifoliolate leaves up to 5 days before first cutting: 2.0 quarts per acre After First Cutting in Newly Established Stands: In-crop application, per cutting, up to 5 days before cutting: 2.0 quarts per acre</p> <p><b>B. Established Stands (non-seeding year)</b> In-Crop applications, per cutting, up to 5 days before cutting: 2.0 quarts per acre During stand establishment, due to the biology and breeding constraints of alfalfa, up to 10% of the seedlings may not contain the glyphosate tolerant gene and will not survive after the first application of this product. To eliminate the undesirable effects of stand gaps created by the loss of plants not containing a glyphosate tolerant gene, a single application of at least 1.0 quart per acre of this product should be applied at or before the 3 to 4 trifoliolate growth stage. In both newly seeded and established stands, in order to maximize yield and quality potential of forage and hay, applications of this product should be made after weeds have emerged but before alfalfa growth or re-growth interferes with application spray coverage of the target weeds. In addition to those weeds listed in the NASA Herbicide label booklet, this product will suppress or control the parasitic weed, dodder (<i>Cuscuta</i> spp.) in glyphosate tolerant alfalfa. Repeat applications may be necessary for complete control.</p>	<p>DO NOT EXCEED 2.0 QUARTS OF THIS PRODUCT PER ACRE WHEN MAKING APPLICATIONS BY AIR. Any single over-the-top application of this product must not exceed 2.0 quarts (64 fluid ounces) per acre. Sequential applications of this product must be at least 7 days apart. The combined total per year for all in-crop applications in newly established and established stands must not exceed 6.0 quarts (192 fluid ounces) per acre. Remove domestic livestock before application and wait a minimum of 5 days after last application before grazing, or cutting and feeding of glyphosate tolerant alfalfa forage and hay.</p>
<p>Over-the-top applications</p>	<p>This product may be applied post-emergence to glyphosate tolerant alfalfa from emergence until 5 days prior to cutting. Any single over-the-top applications of this product must not exceed 2.0 quarts per acre. PRECAUTION: Where glyphosate tolerant alfalfa is grown with a companion or cover crop, or is over seeded with a second species, over-the-top applications of this product will eliminate the non- glyphosate tolerant species. Tank mixtures with other herbicides, insecticides, or fungicides may result in crop injury or reduced weed control and must not be used for over-the-top applications of this product.</p>	<p>Sequential applications of this product must be at least 7 days apart.</p>

<p>MAXIMUM ALLOWABLE APPLICATION RATES FOR POSTEMERGENCE APPLICATION ONLY ON ALFALFA VARIETIES DESIGNATED AS CONTAINING A GLYPHOSATE TOLERANT GENE.</p> <p>The glyphosate tolerant designation indicates that the alfalfa contains a patented gene, which provides tolerance to this product. Information on glyphosate tolerant alfalfa varieties may be obtained from your seed supplier. glyphosate tolerant crop varieties must be purchased from an authorized licensed seed supplier.</p>		
TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Combined total per year for all applications, including pre-plant during year of establishment		7.75 quarts per acre
Combined total per year for in-crop applications for newly established and established stands		6.0 quarts per acre
Pre-plant, At-planting and Pre-emergence single applications		2.0 quarts per acre

GLYPHOSATE TOLERANT CANOLA (Spring Varieties)		
<p>REGISTERED CROPS: glyphosate tolerant spring canola is defined as those glyphosate tolerant canola varieties that are seeded in the spring and harvested in the fall and do not enter a winter dormancy period.</p> <p>DO NOT USE THIS PRODUCT ON SPRING CANOLA WITH A GLYPHOSATE TOLERANT GENE PLANTED IN THE FOLLOWING STATES: ALABAMA, DELAWARE, FLORIDA, GEORGIA, KENTUCKY, MARYLAND, NEW JERSEY, NORTH CAROLINA, SOUTH CAROLINA, TENNESSEE, VIRGINIA AND WEST VIRGINIA, EXCEPT FOR USES IN WILDLIFE FOOD PLOTS THAT WILL NOT BE FOR HUMAN OR LIVESTOCK FOOD</p>		
TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Pre-plant, At-planting, Pre-emergence	This product may be applied before, during or after planting glyphosate tolerant spring canola.	Maximum quantity of this product that may be applied for all pre-plant, at-planting and pre-emergence applications combined is 2 quarts per acre per season.
Post-emergence (In-crop)	<p>This product may be applied post-emergence to glyphosate tolerant spring canola from emergence through the 6-leaf stage of development. Applications made during bolting or flowering may result in crop injury and yield loss. To maximize yield potential, make applications early to eliminate competing weeds.</p> <p><b>Single Application</b> – Apply 11 to 16 fluid ounces of this product per acre no later than the 6-leaf stage for the control of annual weeds. Avoid overlapping applications as this may result in temporary yellowing, delayed flowering, and or growth reduction. Similar crop injury may result when applications of more than 11 fluid ounces per acre are applied after the 4-leaf stage.</p> <p><b>Sequential Application</b> – Apply 11 fluid ounces of this product per acre to 1- to 3-leaf canola followed by a sequential application at a minimum interval of 10 days, but no later than the 6-leaf stage. Sequential applications can be made for early emerged annual weeds and perennial weeds such as Canada thistle and quackgrass, or when multiple applications are needed for adequate weed control</p>	<p>No more than two in-crop (over-the-top) broadcast applications may be made from crop emergence through the 6-leaf stage of development and the total of all in-crop applications must not exceed 22 fluid ounces of this product per acre.</p> <p>Allow a minimum of 60 days between last application and canola harvest.</p>
MAXIMUM ALLOWABLE APPLICATION RATES		
Total of all Pre-plant, At Planting, Pre-emergence applications		2 quarts per acre

Total of all In-crop applications from emergence to 6-leaf stage		1 quart per acre
GLYPHOSATE TOLERANT CANOLA (Fall and Winter Varieties)		
<p>REGISTERED CROPS: glyphosate tolerant winter canola is defined as those glyphosate tolerant canola varieties that are seeded in early fall and harvested the following spring or summer. Winter canola varieties are intended to enter a cold period dormancy in the winter.</p> <p>DO NOT USE THIS PRODUCT ON SPRING CANOLA WITH A GLYPHOSATE TOLERANT GENE PLANTED IN THE FOLLOWING STATES: ALABAMA, DELAWARE, FLORIDA, GEORGIA, KENTUCKY, MARYLAND, NEW JERSEY, NORTH CAROLINA, SOUTH CAROLINA, TENNESSEE, VIRGINIA AND WEST VIRGINIA, EXCEPT FOR USES IN WILDLIFE FOOD PLOTS THAT WILL NOT BE FOR HUMAN OR LIVESTOCK FOOD</p>		
TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Pre-plant, At-planting, Pre-emergence	This product may be applied before, during or after planting glyphosate tolerant winter canola.	Maximum quantity of this product that may be applied for all pre-plant, at-planting and pre-emergence applications combined is 2 quarts per acre per season.
Post-emergence (In-crop)	<p>This product may be applied to glyphosate tolerant winter canola varieties from emergence to canopy closure in the fall and prior to bolting in the spring. Applications made during or after bolting may result in crop injury and yield loss. To maximize yield potential, make applications early to eliminate competing weeds. Some weeds with multiple germination times, or suppressed (stunted) weeds, or weeds that have overwintered may require sequential applications of this product for control. The second application should be made after some re-growth has occurred and at least 60 days after a previous application of this product.</p> <p><b>Single Application</b> – Apply 22 to 32 fluid ounces of this product per acre in the fall. Applications in the fall should be made when weeds are small and actively growing. Use the higher rate in the labeled range when weed densities are high, when weeds have overwintered or when weeds become large and well established. Applications of greater than 16 fluid ounces per acre prior to the 6- leaf stage may result in reduced crop growth in the fall. Avoid overlaps. Spray overlaps may result in temporary yellowing and/or growth reduction.</p> <p><b>Sequential Applications</b> -- Apply 16 to 32 fluid ounces of this product per acre to 2-leaf or larger canola in the fall, followed by a sequential application at the same rate and at a minimum interval of 60 days, but before bolting in the spring. Sequential applications can be made for early emerging annual weeds and winter emerging weeds such as downy brome, jointed goatgrass and ryegrass, and for weeds that have overwintered. This product will control or suppress most perennial weeds. For some perennial weeds, sequential applications may be required to reduce competition with the crop.</p>	<p>No more than two over-the-top broadcast applications may be made from crop emergence up to the onset of bolting, and the total in-crop application must not exceed 2 quarts of this product per acre. Applications of greater than 24 fluid ounces per acre prior to the 6-leaf stage may result in reduced crop growth in the fall.</p> <p>Allow a minimum of 60 days between last application and harvest of canola grain.</p> <p>No waiting period is required between application and open grazing of livestock.</p>
MAXIMUM ALLOWABLE APPLICATION RATES		

Total of all Pre-plant, At Planting, Pre-emergence applications	2 quarts per acre
Total of all In-crop applications from emergence to canopy closure or prior to bolting in the spring	2 quarts per acre

GLYPHOSATE TOLERANT CORN		
TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Pre-plant, At-planting, Pre-emergence	<p>This product may be applied alone or in a tank-mixture before, during or after planting corn.</p> <p>TANK MIXTURES: This product may be tank mixed with alachlor / atrazine, acetochlor, or alachlor at 50 to 100 percent of labeled rate. Refer to the specific product label and observe all precautions and limitations on the label for any pre-emergence herbicide application, including application timing restrictions, soil restrictions, minimum recropping interval and rotational guidelines - the more restrictive requirements apply.</p> <p>NOTE: For maximum weed control, a post-emergence (in crop) application of this product should be applied following the use of less than labeled rates of the pre-emergence residual products listed above.</p> <p>MAKE APPLICATIONS ACCORDING TO THE RATES LISTED IN "ANNUAL WEEDS", PERENNIAL WEEDS", AND WOODY BRUSH &amp; TREES RATE TABLES" IN THIS LABEL.</p>	<p>Applying this product to crop varieties that are not designated as glyphosate tolerant will result in severe crop injury and yield loss. Do not allow contact with foliage, green stems, or fruit of crops, or any desirable plants that do not contain a glyphosate tolerant gene, since severe injury or destruction will result.</p> <p>AVOID DRIFT.</p> <p>EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS WHICH DO NOT CONTAIN A GLYPHOSATE TOLERANT GENE. See the "MIXING and APPLICATION EQUIPMENT AND TECHNIQUES" sections of this label for additional directions and restrictions on the application of this product.</p>
Post-emergence (In-crop)	<p>When applied as directed, this product controls labeled annual grass and broadleaf weeds in glyphosate tolerant corn. Many perennial grasses and broadleaf weeds will be controlled or suppressed with one or more application of this product. The post-emergent application of 0.75 to 1.5 quarts per acre of this product should be made before the weeds reach a height and/or density that the weeds become competitive with the crop, generally 4 inch tall weeds or less.</p> <p>This product may be applied over-the-top to glyphosate tolerant Ready corn from emergence through the V8 stage (8 leaves with collars) or until corn height reaches 48 inches, whichever comes first.</p> <p>Use drop nozzles when corn height is 24 to 30 inches</p>	<p>Single in-crop applications of this product are not to exceed 1.5 quarts per acre.</p> <p>The maximum combined total of multiple in-crop applications from emergence through the 48-inch stage is 3 quarts per acre Allow a minimum of 10 days between in-crop</p>

	<p>(free standing), for optimum spray coverage and weed control.</p> <p>For corn heights 30 to 48 inches (free standing), apply this product ONLY using ground application equipment with drop nozzles adjusted to avoid spraying into the whorls of the corn plants. If product is applied to whorls of corn, plant injury and yield reduction can occur.</p> <p>Maximum single in-crop application rate of this product up to 48-inch corn is 48 fluid ounces per acre.</p> <p>See the "<u>GLYPHOSATE TOLERANT CROPS</u>" section of this label for additional instructions for use in glyphosate tolerant crops.</p> <p>TANK MIXTURES: This product may be applied in tank mixture with alachlor / atrazine, acetochlor, or alachlor at 50 to 100 percent of labeled rate. This product may be applied in tank mixture with halosufuron-methyl and atrazine at labeled rates.</p> <p>Refer to the specific product label and observe all precautions and limitations on the label for all products used in tank mixtures, including application timing restrictions, soil restrictions, minimum re-cropping interval and rotational guidelines - the more restrictive requirements apply.</p> <p>Tank-mix                      <u>Maximum Height of Corn For Application Partner</u></p> <table><tr><td>acetochlor / atrazine</td><td>11 inches</td></tr><tr><td>acetochlor</td><td></td></tr><tr><td>Bullet (EPA Reg No 524-418)</td><td>5 inches</td></tr><tr><td>Micro-Tech (EPA Reg. No. 524-344)</td><td></td></tr><tr><td>Atrazine</td><td>12 inches</td></tr></table> <p>* Bullet and Micro-Tech are not registered for use as a post-emergence application in Texas.</p>	acetochlor / atrazine	11 inches	acetochlor		Bullet (EPA Reg No 524-418)	5 inches	Micro-Tech (EPA Reg. No. 524-344)		Atrazine	12 inches	<p>applications of this product.</p> <p>Allow a minimum of 50 days between application of this product and harvest of corn forage.</p>
acetochlor / atrazine	11 inches											
acetochlor												
Bullet (EPA Reg No 524-418)	5 inches											
Micro-Tech (EPA Reg. No. 524-344)												
Atrazine	12 inches											
Pre-harvest	<p>In glyphosate tolerant corn, up to 1 quart per acre of this product can be applied pre-harvest. Make applications at 35 percent grain moisture or less. Ensure that maximum kernel fill is complete and the corn is physiologically mature (black layer formed).</p>	<p>Allow a minimum of 7 days between application and harvest.</p>										
Post-harvest	<p>This product may be applied after harvest of corn. Higher rates may be required for control of large weeds that were growing in the crop at the time of harvest. Tank mixtures with 2,4-D or dicamba may be used.</p>	<p>Allow a minimum of 7 days between treatment and harvest or feeding of treated vegetation.</p>										
MAXIMUM ALLOWABLE APPLICATION RATES												
Combined total per year for all applications		8 quarts per acre										
Total of all Pre-plant, At Planting, Pre-emergence applications		5 quarts per acre										
Total in-crop applications from emergence through 48-inch corn		3 quarts per acre										
Maximum pre-harvest application rate after maximum kernel fill is complete and the crop is physiologically mature (black layer formation) until 7 days before harvest		1 quart per acre										

GLYPHOSATE TOLERANT COTTON



TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Pre-plant, At-planting, Pre-emergence	This product may be applied before, during or after planting cotton. MAKE APPLICATIONS ACCORDING TO THE RATES LISTED IN "ANNUAL WEEDS", PERENNIAL WEEDS", AND WOODY BRUSH & TREES RATE TABLES" IN THIS LABEL.	See the " GLYPHOSATE TOLERANT CROPS" section of this label for additional instructions for use in glyphosate tolerant crops.
Post-emergence (over-the-top)	<p>This product may be applied by aerial or ground application equipment at rates up to 1 quart per acre per application postemergence to glyphosate tolerant cotton from the ground cracking stage until the 4-leaf (node) stage of development (until the fifth true leaf reaches the size of a quarter). Over-the-top applications made after the 4-leaf (node) stage of development may result in boll loss, delayed maturity and/or yield loss.</p> <p><b>Salvage Treatment.</b> This treatment may be used after the 4-leaf stage of development and must only be used where weeds threaten to cause the loss of the crop. One quart per acre may be applied either as an over-the-top applications or as a postdirected treatments sprayed higher on the cotton plants and over the weeds.</p> <p>NOTE: SALVAGE TREATMENTS WILL RESULT IN SIGNIFICANT BOLL LOSS, DELAYED MATURITY AND/OR YIELD LOSS. NO MORE THAN ONE SALVAGE TREATMENT MAY BE USED PER GROWING SEASON.</p>	<p>See the " GLYPHOSATE TOLERANT " section of this label for additional instructions for use in glyphosate tolerant crops. The combined total application of this product from cotton emergence until harvest must not exceed 6 quarts per acre.</p> <p>NO MORE THAN TWO OVER-THE-TOP BROADCAST APPLICATIONS MAY BE MADE FROM CROP EMERGENCE THROUGH THE 4-LEAF (NODE) STAGE OF DEVELOPMENT.</p> <p>NO MORE THAN TWO APPLICATIONS MAY BE MADE FROM THE 5-LEAF STAGE THROUGH LAYBY.</p> <p>SEQUENTIAL IN-CROP OVER-THE-TOP OR POST-DIRECTED APPLICATIONS OF THIS PRODUCT MUST BE AT LEAST 10 DAYS APART AND COTTON MUST HAVE AT LEAST TWO NODES OF INCREMENTAL GROWTH BETWEEN APPLICATIONS.</p> <p>ALLOW A MINIMUM OF 7 DAYS BETWEEN APPLICATION AND HARVEST.</p>

Selective Equipment	This product may be applied using precision post-directed or hooded sprayers at rates up to 1 quart per acre per application to glyphosate tolerant cotton through layby. At this stage, postdirected equipment must be used which directs the spray to the base of the cotton plants. Contact of the spray with cotton leaves should be avoided to the maximum extent possible. To minimize spray onto the leaves of the cotton plants, place nozzles in a low position directing a horizontal spray pattern under the cotton leaves to contact weeds in the row, and maintain low spray pressure (less than 30 psi). For best results, make applications while weeds are small (less than 3 inches).	See the "SELECTIVE EQUIPMENT" part of the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label for information on proper use and calibration of this equipment.
Pre-harvest	This product may be applied for pre-harvest annual and perennial weed control as a broadcast treatment to glyphosate tolerant cotton after 20 percent boil crack. Up to 2 quarts of this product may be applied using either aerial or ground spray equipment. TANK MIXTURES: This product may be tank mixed with S, S, S-tributyl phosphorotrithioate, thiadiazuron / diruon, or ethephon. NOTE: This product will not enhance the performance of these harvest aids when applied to glyphosate tolerant cotton.	Allow a minimum of 7 days between application and harvest of cotton. Do not apply this product to cotton grown for seed, as a reduction in germination or vigor may occur. REFER TO MANUFACTURERS LABELS FOR USE OF ADDITIVES (such as surfactants, stickers and spreaders) FOR PREHARVEST APPLICATION TO COTTON.

#### MAXIMUM ALLOWABLE APPLICATION RATES

Combined total per year for all applications	8 quarts per acre
Total of all Pre-plant, At Planting, Pre-emergence applications	5 quarts per acre
Total in-crop applications from ground cracking to layby	4 quarts per acre
Maximum pre-harvest application rate	2 quarts per acre

#### GLYPHOSATE TOLERANT FLEX™ COTTON

ATTENTION: USE OF THIS PRODUCT IN ACCORDANCE WITH LABEL DIRECTIONS IS EXPECTED TO RESULT IN NORMAL GROWTH OF GLYPHOSATE TOLERANT COTTON, HOWEVER, VARIOUS ENVIRONMENTAL CONDITIONS, AGRONOMIC PRACTICES AND OTHER FACTORS MAKE IT IMPOSSIBLE TO ELIMINATE ALL RISKS ASSOCIATED WITH THIS PRODUCT, EVEN WHEN APPLICATIONS ARE MADE IN CONFORMANCE WITH THE LABEL SPECIFICATIONS. IN SOME CASES, THESE FACTORS CAN RESULT IN BOLL LOSS, DELAYED MATURITY AND/OR YIELD LOSS.		
TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS

Pre-plant, At-planting, Pre-emergence	<p>This product may be applied before, during or after planting glyphosate tolerant Flex cotton. Always plant into a weed free seedbed. In no-till and stale seedbed systems, always burn down existing weeds before cotton emerges.</p> <p>MAKE APPLICATIONS ACCORDING TO THE RATES LISTED IN "ANNUAL WEEDS", PERENNIAL WEEDS", AND WOODY BRUSH &amp; TREES RATE TABLES" IN THIS LABEL.</p>	See the " <b><u>GLYPHOSATE TOLERANT CROPS</u></b> " section of this label for additional instructions for use in glyphosate tolerant crops.
Post-emergence (over-the-top)	<p>When applied in accordance with this label, NASA Herbicide will control labeled annual grasses and broadleaf weeds in glyphosate tolerant Flex cotton. To maximize yield potential spray cotton early to eliminate competing weeds. Many perennial weeds will be controlled or suppressed with one or more applications of this product.</p> <p>Make an initial application of 1.0 quart per acre on 1 to 3 inch tall annual grass and broadleaf weeds. This product may be applied by ground application equipment at rates up to 1.5 quarts per acre per application post-emergence to glyphosate tolerant Flex™ cotton. In addition to broadcast applications, post-directed equipment may be used to achieve weed coverage.</p> <p>NOTE: For specific rates of application and instructions, refer to the "<b><u>ANNUAL WEEDS</u></b>" and "<b><u>PERENNIAL WEEDS RATE</u></b>" sections in the label.</p> <p>PRECAUTION: In-crop application rates above 1.0 quart per acre made alone or with the addition of other crop chemical products containing surfactant may cause a crop response including leaf speckling or leaf necrosis. Application after 10th leaf or 10th node may result in plant injury and yield loss.</p>	<p>The maximum rate for any single in-crop application of this product is 1.5 quart per acre made using ground application equipment.</p> <p>Except for pre-harvest use, do not exceed a maximum rate of 1.0 quart per acre of this product when making applications by air.</p> <p>Between layby and 60 percent open bolls, the maximum combined total rate of this product that may be applied is 2.0 quarts per acre.</p> <p>The maximum combined total of all applications made from crop emergence through 60 percent open bolls must not exceed 6.0 quarts per acre.</p>
Pre-harvest	<p>This product may be applied for pre-harvest annual and perennial weed control as a broadcast treatment to glyphosate tolerant Flex™ cotton after 60 percent boll crack. Up to 2.0 quarts of this product may be applied using either aerial or ground spray equipment.</p> <p>NOTE: This product will not enhance the performance of harvest aids when applied to glyphosate tolerant Flex cotton.</p>	<p>Allow a minimum of 7 days between application and harvest of cotton.</p> <p>Do not apply this product to cotton grown for seed, as a reduction in germination or vigor may occur.</p> <p>THE USE OF ADDITIVES, OTHER THAN THOSE LISTED ON THIS LABEL, FOR PREHARVEST APPLICATION TO COTTON IS PROHIBITED.</p>
MAXIMUM ALLOWABLE APPLICATION RATES		
Combined total per year for all applications (Calculate the combined rate to be used for all pre-plant, in-crop and pre-harvest applications)		8 quarts per acre

Total of all Pre-plant, At Planting, Pre-emergence applications	5 quarts per acre
Total in-crop applications from ground cracking to 60% open bolls	6 quarts per acre
Maximum allowed from 60 percent bolls open to 7 days prior to harvest	2 quarts per acre

GLYPHOSATE TOLERANT SOYBEANS		
THE USE OF THIS PRODUCT FOR IN-CROP APPLICATIONS OVER GLYPHOSATE TOLERANT SOYBEANS MAY NOT BE PRACTICED IN CALIFORNIA UNLESS THE APPLICATOR HAS AT THE TIME OF APPLICATION A CALIFORNIA APPROVED SUPPLEMENTAL LABEL SPECIFYING THE ACCEPTED DIRECTION FOR USE.		
TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Pre-plant, At-planting, Pre-emergence	This product may be applied before, during or after planting soybeans. MAKE APPLICATIONS ACCORDING TO THE RATES LISTED IN "ANNUAL WEEDS", PERENNIAL WEEDS", AND WOODY BRUSH & TREES RATE TABLES" IN THIS LABEL.	See the " <b><u>GLYPHOSATE TOLERANT CROPS</u></b> " section of this label for additional instructions for use in glyphosate tolerant crops.
Post-emergence (in crop)	<p>When applied as directed, this product will control labeled annual grasses and broadleaf weeds in glyphosate tolerant soybeans. Applications of this product can be made in glyphosate tolerant soybeans from emergence (cracking) throughout flowering. Refer to the "ANNUAL WEEDS RATE TABLE" in this label for specific rates on various annual weeds. Make an initial application of 1 quart per acre on 2- to 8-inch tall weeds. Weeds will generally be 2 to 8 inches tall, 2 to 5 weeks after planting. If the initial application is delayed and weeds are larger, apply a higher rate of this product. This product may be used up to 2 quarts per acre in any single in-crop application for control of annual weeds and where heavy weed densities exist.</p> <p>Single or multiple applications of this product at 1- to 2-quarts per acre will control or suppress perennial weeds such as: bermudagrass, Canada thistle, common milkweed, field bindweed, hemp dogbane, horsenettle, marestail (horseweed), nutsedge, quackgrass, rhizome johnsongrass, redbone, trumpetcreeper, swamp smartweed and wirestem muhly. For best results, allow perennial weed species to achieve at least 6 inches of growth before spraying with this product.</p> <p>Under adverse growing conditions such as drought, hail, wind damage or a poor soybean stand that slows or delays canopy closure, a sequential application of this may be necessary to control late flushes of weeds. IN THE SOUTHERN STATES, A SEQUENTIAL APPLICATION OF THIS PRODUCT WILL BE REQUIRED TO CONTROL NEW FLUSHES OF WEEDS IN THE GLYPHOSATE TOLERANT SOYBEAN CROP. To control giant ragweed, apply up to 1 quart per acre of this product when the weed is 8 to 12 inches tall to increase control and possibly avoid the need for a sequential application.</p>	<p>The combined total application from crop emergence through harvest must not exceed 3 quarts per acre.</p> <p>The maximum rate for any single in-crop application is 2 quarts per acre. The maximum combined total of this product that can be applied during flowering is 2 quarts per acre.</p>

Pre-harvest	<p>This product provides weed control when applied prior to harvest of soybeans. Up to 1 quart per acre of this product can be applied by aerial or ground application.</p> <p>PRECAUTION: Care should be taken to avoid excessive seed shatter loss due to ground application equipment.</p>	<p>The combined total application from crop emergence through harvest must not exceed 3 quarts per acre.</p> <p>The maximum rate for any single in-crop application is 2 quarts per acre. The maximum combined total of this product that can be applied during flowering is 2 quarts per acre.</p> <p>Allow a minimum of 14 days between final application and harvest of soybean grain or feeding of soybean grain, forage or hay.</p>
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#### MAXIMUM ALLOWABLE APPLICATION RATES

Combined total per year for all applications	8 quarts per acre
Total of all Pre-plant, At Planting, Pre-emergence applications	5 quarts per acre
Total in-crop applications from ground cracking through flowering	3 quarts per acre
Maximum pre-harvest application rate	1 quart per acre

#### GLYPHOSATE TOLERANT SUGAR BEETS

The glyphosate tolerant designation indicates that the sugar beet contains a patented gene, which provides tolerance to this product. Information on glyphosate tolerant sugarbeet may be obtained from your seed supplier. Glyphosate tolerant crop varieties must be purchased from an authorized licensed seed supplier.

Do NOT combine these instructions with those listed for crop varieties that do not contain a glyphosate tolerant gene listed in the "ANNUAL AND PERENNIAL CROPS (Alphabetical)" sections of the NASA Herbicide label booklet.

TYPES OF APPLICATIONS	USE DIRECTIONS	RESTRICTIONS
Pre-plant, At-planting, Pre-emergence	<p>This product may be applied before, during or after planting of glyphosate tolerant sugar beets.</p> <p>MAKE APPLICATIONS ACCORDING TO THE RATES LISTED IN "ANNUAL WEEDS", PERENNIAL WEEDS", AND WOODY BRUSH &amp; TREES RATE TABLES" IN THIS LABEL.</p>	<p>Maximum quantity of this product that may be applied for all pre-plant, at-planting and pre-emergence applications combined is 5.0 quarts per acre per season.</p>

Post-emergence (in crop)	This product may be applied over the top of glyphosate tolerant sugar beets for control of annual grasses and broadleaf weeds from emergence to 30 days prior to harvest. To maximize yield potential, spray sugar beets early to eliminate competing weeds. Up to 4 sequential applications of this product may be made with at least 10 days between applications. This product will control or suppress most perennial weeds. For some perennial weeds, repeat applications may be required to eliminate crop competition throughout the growing season.	The combined total application from crop emergence through harvest must not exceed 4.5 quarts per acre. The maximum rate for any single application between emergence to the 8 leaf stage is 1.5 quarts per acre. The maximum rate for any single application between the 8 leaf stage and canopy closure is 1.0 quart per acre. Allow a minimum of 30 days between last application and sugar beet harvest.
MAXIMUM ALLOWABLE APPLICATION RATES		
Combined total per year for all applications		8 quarts per acre
Total of all Pre-plant, At Planting, Pre-emergence applications		5 quarts per acre
Emergence to 8 leaf stage		2.5 quarts per acre
Between 8 leaf stage and canopy closure		2 quarts per acre

## **NON-CROP USES**

### **NOTE TO USER**

This product must not be used in areas where adverse impact on federally designated endangered/threatened plant or aquatic species is likely.

Prior to making applications, the user of this product must determine no such species are located in or immediately adjacent to the area to be treated.

### **Cut Stump Treatments**

Woody vegetation may be controlled by treating freshly cut stumps of trees and resprouts with this product. Apply this product using suitable equipment to ensure coverage of the entire cambium. Cut vegetation close to the soil surface. Apply a 50 to 100 percent solution of this product to the freshly-cut surface immediately after cutting. Delays in application may result in reduced performance. For best results, make applications during periods of active growth and full leaf expansion.

When used according to directions for cut stump application, this product will CONTROL, PARTIALLY CONTROL or SUPPRESS many types of woody brush and tree species, some of which are listed below:

#### **Alder**

*Alnus spp.*

#### **Oak**

*Quercus spp.*

#### **Sweetgum**

*Liquidambar densiflorus*

#### **Eucalyptus**

*Eucalyptus spp.*

#### **Reed, giant**

*Arundo donax*

#### **Tanoak**

*Lithocarpus densiflorus*

#### **Madrone**

*Arbutus menziesii*

#### **Saltcedar**

*Tamarisk spp.*

#### **Willow**

*Salix spp.*



**Precautions:** Do not make cut stump applications when the roots of desirable woody brush or trees may be grafted to the roots of the cut stumps. Injury resulting from root grafting may occur in adjacent woody brush or trees.

### **Injection and Frill Applications**

Woody vegetation may be controlled by injection or frill application of this product. Apply this product using suitable equipment that must penetrate into living tissue. Apply the equivalent of 1 ml of this product per each 2 to 3 inches of trunk diameter (DBH). This is best achieved by applying a 50 to 100 percent concentration of this material either to a continuous frill around the tree or as cuts evenly spaced around the tree below all branches. As tree diameter increases in size, better results are achieved by applying diluted material to a continuous frill or more closely spaced cuttings. Avoid application techniques that allow runoff to occur from frill or cut areas in species that exude sap freely after frills or cutting. In species such as this, make frill or cuts at an oblique angle so as to produce a cupping effect and use undiluted material. For best results, make application during periods of active growth and after full leaf expansion.

This treatment WILL CONTROL the following woody species:

#### **Oak**

*Quercus spp.*

#### **Sweetgum**

*Liquidambar styraciflua*

#### **Sycamore**

*Platanus occidentalis*

#### **Poplar**

*Populus spp.*

This treatment WILL SUPPRESS the following woody species:

#### **Black gum**

*Nyssa sylvatica*

#### **Hickory**

*Carya spp.*

#### **Maple, red**

*Acer rubrum*

#### **Dogwood**

*Cornus spp.*

### **Turfgrasses and Grasses for Seed Production**

#### **Preplant and Renovation**

When applied as directed for **NON-CROP USES**, under conditions described, this product controls most existing vegetation prior to the planting or renovation of either turfgrasses or grass seed production areas.

For specific rates of application and instructions for control of various annual and perennial weeds, and woody brush and trees, see the weeds rate tables.

For maximum control of existing vegetation, delay planting to determine if any regrowth from escaped underground plant parts occurs. Where repeat treatments are necessary, sufficient regrowth must be attained prior to application. For warm-season grasses, such as Bermuda grass, summer or fall applications provide best control.

DO NOT DISTURB SOIL OR UNDERGROUND PLANT PARTS BEFORE TREATMENT. Tillage or renovation techniques including vertical mowing, delay coring or slicing for 7 days after application to allow proper translocation into underground plant parts.

**Turfgrasses:** Where existing vegetation is growing in a field or unmowed situation, apply this product to actively growing weeds at the stages of growth listed in the weeds rate tables of this label.

Where existing vegetation is growing under mowed turfgrass management, apply this product after omitting at least one regular mowing to allow sufficient growth for good interception of the spray.

Desirable turfgrasses may be planted following the above procedures.

**Grasses for seed production:** Apply this product to actively growing weeds at the stages of growth specified in the weeds rate tables prior to planting or renovation of turf or forage grass areas grown for seed production.

DO NOT feed or graze treated areas within 8 weeks after application.

#### **Annual Weed Control in Dormant Bermuda Grass and Bahiagrass Turf**

When applied as directed for **NON-CROP USES** under the conditions described, this product will provide control or suppression of many winter annual weeds and tall fescue for effective release of dormant Bermuda grass and bahiagrass turf. Refer to the rate table for **Weeds Controlled or Suppressed with Nasa Alone** under the

**RELEASE OF BERMUDA GRASS OR BAHIAGRASS** section of this label for specified rates and volumes on the species to be suppressed or controlled. Treat only when turf is dormant and prior to spring greenup. Spot treatments or broadcast applications of this product in excess of 16 fluid ounces per acre may result in injury or delayed greenup in highly maintained turfgrass areas; i.e., golf courses, lawns, etc. **DO NOT APPLY TANK MIXTURES** of this product with sulfometuron-methyl in highly maintained turfgrass areas.

#### Release of Bermuda Grass or Bahiagrass

**NOTE:** Use only in areas where Bermuda grass or bahiagrass are desirable ground covers and where some temporary injury or discoloration can be tolerated. Use tank mixtures of this product with sulfometuron-methyl only on railroads, highways, utility plant sites, or other right-of-way areas.

When applied as directed for **NON-CROP USES** under the conditions described, this product will provide control or suppression of many winter annual weeds and tall fescue for effective release of dormant Bermuda grass or bahiagrass. This product may be tank-mixed with sulfometuron-methyl as specified for residual control. Make applications to dormant Bermuda grass or bahiagrass. Tank mixtures of this product with sulfometuron-methyl may delay greenup. To avoid delays in greenup and minimize injury, do not add more than 1 ounce per acre of Sulfometuron-methyl on Bermuda grass or more than 0.5 ounce per acre on bahiagrass, or treat when these grasses are in semi-dormant condition.

For best results on winter annuals, treat when plants are in an early growth stage (below 6 inches in height) after most have germinated. For best results on tall fescue, treat when fescue is in or beyond the 4- to 6-leaf stage.

#### Weeds Controlled

Rates for control or suppression of winter annuals and tall fescue are listed below:

Apply the specified rates of this product alone or as a tank mixture in 10 to 25 gallons of water per acre.

For the best recommendation for the mixture of weeds within your geographic area, contact your sales representative.

#### Weeds Controlled or Suppressed with Nasa Alone\*

Note: C = Control  
S = Suppression

Weed Species	Nasa Fluid oz/acre					
	8	12	16	24	32	64
<b>Barley, little</b> <i>Hordeum pusillum</i>	S	C	C	C	C	C
<b>Bedstraw, catchweed</b> <i>Galium aparine</i>	S	C	C	C	C	C
<b>Bluegrass, annual</b> <i>Poa annua</i>	S	C	C	C	C	C
<b>Chervil</b> <i>Chaerophyllum tainturieri</i>	S	C	C	C	C	C
<b>Chickweed, common</b> <i>Stellaria media</i>	S	C	C	C	C	C
<b>Clover, crimson</b> <i>Trifolium incarnatum</i>	do not use	S	S	C	C	C
<b>Clover, large hop</b> <i>Trifolium campestre</i>	do not use	S	S	C	C	C
<b>Fescue, tall</b> <i>Festuca arundinaceae</i>	do not use	do not use	do not use	do not use	S	S
<b>Geranium, Carolina</b> <i>Geranium carolinianum</i>	do not use	do not use	S	S	C	C
<b>Henbit</b> <i>Lamium amplexicaule</i>	do not use	S	C	C	C	C
<b>Ryegrass, Italian</b> <i>Lolium multiflorum</i>	do not use	do not use	S	C	C	C
<b>Speedwell, corn</b> <i>Veronica arvensis</i>	S	C	C	C	C	C
<b>Vetch, common</b> <i>Vicia sativa</i>	do not use	do not use	S	C	C	C

\* These rates apply only to sites where an established competitive turf is present.

### Weeds Controlled or Suppressed with Nasa plus sulfometuron-methyl

Note: C = Control  
S = Suppression

Weed Species	Nasa (fl. oz/a) + Sulfometuron-methyl (oz/a)						
	8 + 1/4	12 + 1/4	12 + 1/2	16 + 1/4	16 + 1/2	12 + 1	16 + 1
<b>Barley, little</b> <i>Hordeum pusilium</i>	C	C	C	C	C	C	C
<b>Bedstraw, catchweed</b> <i>Galium aparine</i>	C	C	C	C	C	C	C
<b>Bluegrass, annual</b> <i>Poa annua</i>	S	C	C	C	C	C	C
<b>Chervil</b> <i>Chaerophyllum tainturieri</i>	C	C	C	C	C	C	C
<b>Chickweed, common</b> <i>Stellaria media</i>	S	C	C	C	C	C	C
<b>Clover, crimson</b> <i>Trifolium incarnatum</i>	S	S	S	S	C	C	C
<b>Clover, large hop</b> <i>Trifolium campestre</i>	do not use	do not use	S	S	S	C	C
<b>Fescue, tall</b> <i>Festuca arundinaceae</i>	do not use	do not use	do not use	do not use	do not use	S	S
<b>Geranium, Carolina</b> <i>Geranium carolinianum</i>	do not use	S	S	C	C	C	C
<b>Henbit</b> <i>Lamium amplexicaule</i>	do not use	S	C	C	C	C	C
<b>Ryegrass, Italian</b> <i>Lolium multiflorum</i>	do not use	S	S	C	C	C	C
<b>Speedwell, corn</b> <i>Veronica arvensis</i>	S	C	C	C	C	C	C
<b>Vetch, common</b> <i>Vicia sativa</i>	C	C	C	C	C	C	C

\* These rates or mixtures of rates apply only to sites where an established competitive turf is present.

### Release of Actively Growing Bermuda Grass

When applied as directed, this product will aid in the release of Bermuda grass by providing control of annual species listed in this product label and in the Sulfometuron-methyl label, and suppression or partial control of certain perennial weeds.

For control or suppression of those annual species listed on this label, use 1 to 3 pints of this product as a broadcast spray in 10 to 25 gallons of spray solution per acre. Use the lower rate when treating annual weeds below 6 inches in height (or length of runner in annual vines). Use the higher rate as weeds increase in size or as they approach flower or seedhead formation.

Use the higher rate of this product for partial control of the following perennial species. Use the lower rates for suppression of growth. For best results, see the **PERENNIAL WEEDS RATE TABLE** of this label for proper stage of growth.

**Bahiagrass**  
*Paspalum notatum*

**Fescue, tall**  
*Festuca arundinacea*

**Trumpet creeper\*\***  
*Campsis radicans*

**Bluestem, silver**  
*Andropogon saccharoides*

**Johnsongrass\***  
*Sorghum halepense*

**Vaseygrass**  
*Paspalum urvillei*

\* Control at higher rates.

\*\* Suppression at higher rates only.

This product may be tank-mixed with sulfometuron-methyl. If tank-mixed, use no more than 1 to 2 pints per acre of this product with 1 to 2 ounces of 75% sulfometuron-methyl per acre.

Use the lower rates of both mixtures to control annual weeds below 6 inches in height (or runner length in

annual vines) that are listed in this product label and in the sulfometuron-methyl label. Use the higher rates as annual weeds increase in size and approach the flower and seedhead stages. Use the higher rates of this product to provide partial control of the following perennial weeds. Use the lower rates for suppression of growth.

**Bahiagrass**  
*Paspalum notatum*

**Dogfennel**  
*Eupatorium capilliflorum*

**Trumpet creeper\***  
*Campsis radicans*

**Bluestem, silver**  
*Andropogon saccharoides*

**Fescue, tall**  
*Festuca arundinacea*

**Vaseygrass**  
*Paspalum urvillei*

**Broomsedge**  
*Andropogon virginicus*

**Johnsongrass\***  
*Sorghum halepense*

**Vervain, blue**  
*Verbena hastata*

**Dock, curly**  
*Rumex crispus*

**Poorjoe\*\***  
*Diodia teres*

\* Suppression at higher rates only.  
\*\* Control at the higher rates.

Use only on well-established Bermuda grass. Bermuda grass injury may result from the treatment but regrowth will occur under moist conditions. Repeat applications in the same season are not specified, since severe injury may result.

Read and carefully observe all cautionary statements and all other information appearing on the labels of all herbicides used.

### Cool Season Turf Growth Regulation

When applied as directed, this product will suppress growth and seedhead development of listed turf species in industrial areas.

This product is registered for management of coarse turf on roadside rights-of-way or industrial areas. Do not use on high-quality turf or other areas where turf color changes cannot be tolerated. Slight turf discoloration may occur but turf will regreen and regrow under moist conditions as effects of this product will wear off.

Apply 4 to 6 fluid ounces of this product per acre alone or in a specified tank mixture. Spray volumes of 10 to 40 gallons per acre are specified.

This product can be used for growth and seedhead suppression of:

**Tall Fescue**

**Smooth Brome**

For best results, apply this product in a specified tank mixture to actively growing turfgrasses after greenup in the spring of the year. For suppression of seedheads, applications must be made before boot-to-seedhead stage of development. Applications made from seedhead emergence until maturity may result in turf discoloration or injury.

After mowing or removal of seedheads, this product in a specified tank mixture may also be used to suppress the growth of certain turfgrasses. Allow turf to recover from stress caused by heat, drought or mowing before making applications. Applications made to turf under stress may increase the potential for discoloration or injury.

### Annual Grasses

For growth suppression of some annual grasses such as annual ryegrass, wild barley and wild oats, apply 3 to 4 fluid ounces of this product in 10 to 40 gallons of spray solution per acre. Make applications when annual grasses are actively growing and before the seedheads are in the boot stage of development. Treatments made after seedhead emergence may cause injury to the desired grasses.

### Tank Mixtures

For the following tank mixtures, consult each product label for weeds controlled and the correct stage of application. Do not treat turf under stress.

**Tank mixtures 2,4-D Amine:** For additional weed control benefits, up to 1 pound active ingredient per acre of 2,4-D amine may be added to the following tank mixtures. Consult the label for 2,4-D amine for weeds controlled. The individual tank mix product must be registered for use on this site.

### Tall Fescue

**Nasa plus chlorsulfuron:** For suppression of tall fescue growth and seedheads, and control or partial control of some annual weeds, apply this tank mixture after greenup and prior to boot-to-seedhead stage of development. Use up to 0.5 ounce of chlorsulfuron per acre.  
This tank mixture can also be applied after mowing or removal of tall fescue seedheads for turf growth suppression. Make only one of the above applications per growing season.

**Nasa plus sulfometuron-methyl:** For suppression of tall fescue growth and seedheads, and control or partial control of some annual weeds, apply this tank mixture after greenup and prior to boot-to-seedhead stage of development. Use up to 0.25 ounce of 75% sulfometuron-methyl per acre.

**Nasa plus metsulfuron-methyl:** This tank mixture can be applied after mowing or removal of tall fescue seedheads for turf growth suppression and control or partial control of some annual weeds. Use up to 1/3 ounce of 60% metsulfuron-methyl per acre.

**NOTE:** THIS PRODUCT IS NOT REGISTERED FOR USE WITH METSULFURON-METHYL IN CALIFORNIA.

### Smooth Brome

**Nasa plus sulfometuron-methyl:** For suppression of smooth brome growth and seedheads and control or partial control of some annual weeds, apply this tank mixture after greenup and prior to **boot-to-seedhead** stage of development. Use up to 0.25 ounce of 75% sulfometuron-methyl per acre.

### BAHIAGRASS SEEDHEAD AND VEGETATIVE SUPPRESSION

When applied as directed in the indicated non-crop areas (roadsides, airports, golf course roughs, and plant sites), this product will provide significant inhibition of seedhead emergence and will suppress vegetative growth for a period of approximately 45 days with single applications and approximately 120 days with sequential applications.

Apply this product 1 to 2 weeks after full greenup of bahiagrass or after bahiagrass has been mowed to a uniform height of 3 to 4 inches. Applications must be made prior to seedhead emergence. Apply 6 fluid ounces per acre of this product in 10 to 25 gallons of water per acre.

Sequential applications of this product may be made at approximately 45 day intervals to extend the period of seedhead and vegetative growth suppression. For continued seedhead suppression, sequential applications must be made prior to seedhead emergence. Apply no more than 2 sequential applications per year. As a first sequential application, apply 4 fluid ounces of this product per acre. A second sequential application of 2 to 4 fluid ounces per acre may be made approximately 45 days after the last application.

A tank mixture of this product Sulfometuron-methyl **may be applied only on roadsides** for seedhead inhibition and vegetative suppression. Apply 6 fluid ounces per acre of this product 0.25 ounce per acre of sulfometuron-methyl 1 to 2 weeks following an initial spring mowing. When using this product + sulfometuron-methyl for suppression of bahiagrass, make only 1 application per year.

### ANNUAL WEEDS RATE TABLE

Use water carrier volumes of 3 to 10 gallons per acre for ground applications and 3 to 5 gallons per acre for aerial applications.

Apply to actively growing annual weeds.

Do not tank mix with soil residual herbicides when using these rates unless otherwise specified.

For weeds that have been mowed, grazed or cut, allow regrowth to occur prior to treatment.

For those rates less than 48 fluid ounces per acre, this product may be used up to 48 fluid ounces per acre where heavy weed densities exist.

Weeds Species	Nasa Rate - Fluid Ounces per Acre				
	16	24	32	40	48
	Maximum Height/Length				
Ammania, purple	3"	6"	12"	-	18"
Annoda, spurred	-	2"	3"	5"	8"
Barley	18"	18" +	-	-	-

Barnyardgrass	-	3"	6"	7"	9"
Bassia, fivehook	-		6"		
Beggarweed, Florida	-	5"	8"		
Bittercress	12"	20"	-	-	-
Bluegrass, annual	10"	-	-	-	-
Bulegrass, bulbous	6"	-	-	-	-
Brome, downy <sup>1,2</sup>	6"	12"	-	-	-
Brome, Japanese	6"	12"	24"	-	-
Browntop panicum	6"	8"	12"	-	24"
Buckwheat, wild <sup>3</sup>	-	1"	2"	-	-
Burcucumber	-	6"	12"	-	18"
Buttercup	12"	20"	-	-	-
Carolina foxtail	10"	-	-	-	-
Carolina geranium	-	-	4"	-	9"
Carpetweed	-	6"	12"	-	-
Cheat <sup>2</sup>	6"	20"	-	-	-
Chervil	20"	-	-	-	-
Chickweed	12"	18"	-	-	-
Cocklebur	12"	18"	24"	-	36
Copperleaf, hophornbeam	-	2"	4"	-	6"
Copperleaf, Virginia	-	2"	4"	-	6"
Coreopsis, plains	-	6"	12"	-	18"
Corn (volunteer)	6"	12"	20"	-	-
Corn speedwell	12"	-	-	-	-
Crabgrass	3"	6"	12"	-	-
Crowfootgrass	-	-	6"		12"
Cutleaf, evening primrose	-	-	3"	-	6"
Devil's claw (unicorn plant)	-	3"	6"	-	-
Dwarf dandelion	12"	-	-	-	-
Eastern mannagrass	8"	12"	-	-	-
Eclipta	4"	8"	12"	-	-
Fall panicum	4"	-	6"	-	12"



Falsedandelion	-	20"	-	-	-
Falseflax, small seed	12"	-	-	-	-
Fiddleneck	-	6"	-	12"	-
Field pennycress	6"	12"	-	-	-
Filaree	-	-	6"	-	12"
Fleabane, annual	6"	20"	-	-	-
Fleabane, hairy ( <i>Conyza bonariensis</i> )	-	-	6"	-	10"
Fleabane, rough	3"	6"	12"	-	-
Florida, pusley	-	-	4"	-	6"
Foxtail (giant, bristley, yellow)	6"	12"	20"	-	-
Foxtail, Carolina	10"	-	-	-	-
Foxtail, green (wild millet)	10"	-	-	-	-
Goatgrass, jointed	6"	12"	-	-	-
Goosegrass	-	3"	6"	-	12"
Grain sorghum (milo)	-	6"	12"	20"	-
Groundcherry	-	3"	6"	-	9"
Groundsel, common	-	6"	10"	-	-
Hemp sesbania	-	2"	4"	6"	8"
Henbit	-	-	6"	-	12"
Horseweed / Maretail <sup>5</sup> ( <i>Conyza canadensis</i> )	-	6"	12"	-	18"
Itchgrass	6"	8"	12"	-	18"
Jimsonweed	-	-	12"	-	18"
Johnsongrass, seedling	6"	12"	18"	-	24"
Junglerice	-	3"	7"	7"	9"
Knotweed	-	-	6"	-	12"
Kochia <sup>4</sup>	-	3 - 6"	12"	-	-
Lambsquarters	-	6"	12"	-	20"
Little barley	20"	-	-	-	-
London rocket	6"	12"	-	-	-
Mayweed	-	2"	6"	12"	18"
Morning glory ( <i>Ipomoea spp.</i> )	-	-	3"	-	6"
Mustard, blue	6"	12"	18"	-	-

Mustard, tansy	6"	12"	18"	-	-
Mustard, tumble	6"	12"	18"	-	-
Mustard, wild	6"	12"	18"	-	-
Nightshade, black	4"	6"	-	12"	-
Nightshade, hairy	4"	6"	-	12"	-
Oats	3	6"	18"	-	-
Pigweed	-	12"	18"	24"	-
Prickly lettuce	-	6"	12"	-	-
Purslane	-	-	3"	-	6"
Ragweed, common	-	6"	12"	-	18"
Ragweed, giant	-	6"	12"	-	18"
Red rice	-	-	4"	-	-
Russian thistle <sup>5</sup>	-	6"	12"	-	-
Rye (volunteer) <sup>2</sup>	6"	18	18" +	-	-
Ryegrass	-	-	6"	-	12"
Sandbur, field	6"	12"	-	-	-
Shattercane	6"	12"	20"	-	-
Shepherd's purse	6"	12"	-	-	-
Sicklepod	-	2"	4"	-	8"
Signalgrass, broadleaf	-	3"	6"	7"	9"
Smartweed, ladysthumb	-	-	6"	-	9"
Smartweed, Pennsylvania	-	-	6"	-	9"
Sowthistle, annual	-	-	6"	-	12"
Spanishneedles	-	-	6"	-	12"
Speedwell, purslane	12"	-	-	-	-
Sprangletop	6"	12"	20"	-	-
Spurge, prostrate		6"	12"	-	-
Spurge, spotted	-	6"	12"	-	-
Spurry, umbrella	6	-	-	-	-
Stinkgrass	-	12"	-	-	-
Swinecress	-	5"	12"	-	-
Sunflower	12"	18"	-	-	-

Teaweed / Prickly sida	-	2"	4"	-	6"
Texas panicum	6"	8"	12"	-	24"
Velvetleaf	-	-	6"	-	12"
Virginia pepperweed	-	18"	-	-	-
Waterhemp	6"	12"	18"	-	-
Wheat <sup>2</sup>	6"	12"	18"	-	-
Wheat (overwintered)		6"	12"	-	18"
Wild oats	3"	6"	18"	-	-
Wild proso millet	-	6"	12"	-	18"
Witchgrass	-	12"	-	-	-
Woolly cupgrass	-	6"	12"	-	-
Yellow rocket	-	12"	20"	-	-

<sup>1</sup> For control of downy brome in no-till systems, use 24 fl.oz. per acre

<sup>2</sup> Performance is better if application is made before this weed reaches the boot stage of growth.

<sup>3</sup> Use 24 fl.oz. per acre of this product to control wild buckwheat in the cotyledon to 2-leaf stage of growth. Use 32 fl. oz. per acre to control 2 to 4 leaf wild buckwheat. For improved control of wild buckwheat over 2 inches in size, use sequential treatments of 32 fl. oz. followed by another 32 fl. oz. per acre.

<sup>4</sup> Do not treat kochia in the button stage.

<sup>5</sup> Control of Russian thistle may vary based on environmental conditions and spray coverage. Whenever possible, a tank mixture with 2,4-D as described below may improve control.

<sup>6</sup> For control of glyphosate resistant horseweed / marestalk in cotton, corn and soybeans refer to "CONTROL AND MANAGEMENT OF GLYPHOSATE RESISTANT HORSEWEED (MARESTAIL, Conyza Canadensis) IN CORN, COTTON AND SOYBEANS" section below.

#### **Annual Weeds — Rates for 10 to 40 Gallons per Acre**

Apply 1 to 2 quarts of this product per acre. Use 1 quart per acre if weeds are less than 6 inches tall, 1.5 quarts per acre if weeds are over 6 to 12 inches tall, and 2 quarts per acre if weeds are greater than 12 inches tall. These rates will provide control of weeds listed in the "ANNUAL WEEDS RATE TABLE" when water carrier volumes are 10 to 40 gallons per acre for ground applications. Older, mature (hardened) annual weed species may require higher rates even if they meet the size requirements.

#### **Annual Weeds — Tank Mixtures with 2,4-D, Dicamba or picloram**

12 to 16 fluid ounces of this product plus 0.25 pound a.i. of dicamba or 0.5 pound a.i. of 2,4-D or 1 to 2 fluid ounces of picloram 24.4% per acre will control the following weeds with maximum height or length indicated: 6" - prickly lettuce, marestalk or horseweed (*Conyza canadensis*), morningglory (*Ipomoea* spp.), kochia (dicamba only), wild buckwheat (picloram 24.4%); 12" - cocklebur, lambsquarters, pigweed, Russian thistle (2,4-D only).

**DO NOT APPLY DICAMBA OR 2,4-D TANK MIXTURES BY AIR IN CALIFORNIA.**

#### **Annual Weeds — Hand-Held or High-Volume Equipment**

For control of weeds listed in the "ANNUAL WEEDS RATE TABLE", apply a 0.5 percent solution of this product to weeds less than 6 inches in height or runner length. Apply prior to seedhead formation in grass or bud formation in broadleaf weeds. For annual weeds over 6 inches tall, or unless otherwise specified, use a 1% solution.

For best results, use a 2% solution on harder-to-control perennials, such as bermudagrass, dock, field bindweed, hemp dogbane, milkweed and Canada thistle.

When using application methods that result in less than complete coverage, use a 5% solution for annual and perennial weeds and a 5 to 10% solution for woody brush and trees.

#### **Annual Weeds — Tank Mixtures with Atrazine for Fallow and Reduced Tillage Systems**

For use only in Colorado, Kansas, Nebraska, Oklahoma, Oregon, South Dakota and Washington — In

Oregon and Washington, do not exceed 1 pound of atrazine per acre.

24 to 28 fluid ounces of this product plus 1 to 2 pounds of atrazine per acre will control the following weeds: Barnyardgrass (requires 28 fluid ounces for control), downy brome, green foxtail, lambsquarters, prickly lettuce, tansy mustard, pigweed, field sandbur, stinkgrass, Russian thistle, volunteer wheat, witchgrass and kochia (add 0.20 pound a.i. of dicamba for control).

### **Control and Management of Glyphosate Resistant Horseweed (Marestail, *Conyza canadensis*) in Corn, Cotton and Soybeans**

#### **Cotton**

##### **Preplant**

For control of horseweed, apply this product (32 fluid ounces per acre) in a tank-mix with Clarity® (8 fluid ounces per acre). This application must be made 21 to 35 days before planting and before horseweed reaches 6 inches in height. In order to avoid crop injury, a minimum interval of 21 days during which there is at least 1 inch of cumulative rainfall must be observed between Clarity application and planting of cotton.

#### **Soybeans**

##### **Preplant**

Apply a tank mixture of this product (32 fluid ounces per acre) with 2,4-D (0.5 pounds a.i. per acre) before horseweed exceeds 6 inches in height. See the 2,4-D product label for time intervals that are required between application and planting. For areas where 2,4-D cannot be applied due to application restrictions or proximity to a sensitive crop, contact your local retailer.

#### **Corn**

##### **Preplant, At-Planting, Preemergence**

Apply a tank mixture of this product (32 fluid ounces per acre) 2,4-D (0.5 pounds a.i. of per acre) before horseweed exceeds 6 inches in height. See the 2,4-D product label for time intervals that are required between application and planting.

Atrazine (1 to 2 pounds active ingredient per acre) may be included in the tank-mixture to provide residual control. Refer to the atrazine product label for specific use instructions.

### **PERENNIAL WEEDS RATE TABLE**

Apply to actively growing perennial weeds.

**NOTE:** If weeds have been mowed or tilled, do not treat until plants have resumed active growth and have reached the specified stages.

Repeat treatments may be necessary to control weeds regenerating from underground parts or seed. Repeat treatments must be made prior to crop emergence.

Unless otherwise stated, allow 7 or more days after application before tillage.

Do not treat when weeds are under drought stress as good soil moisture is necessary for active growth.

For hand-held sprayers, prepare the desired volume of spray solution by mixing the amount of this product in water as shown in the following table.

#### **Spray Solution**

<b>Desired Volume</b>	<b>Amount of Nasa</b>					
	<b>1/2 %</b>	<b>1 %</b>	<b>1 1/2 %</b>	<b>2%</b>	<b>5%</b>	<b>10%</b>
<b>1 Gallon</b>	2/3 oz.	1 1/3 oz.	2 oz.	2 2/3 oz.	6 1/2 oz.	13 oz.
<b>25 Gallon</b>	1 pt.	1 qt.	1 1/2 qt.	2 qt.	5 qt.	10 qt.
<b>100 Gallon</b>	2 qt.	1 gal.	1 1/2 gal.	2 gal.	5 gal.	10 gal.
<b>2 tablespoons = 1 fluid ounce</b>						

<b>Weeds Species</b>	<b>Nasa Rate (QT/A)</b>	<b>Water Volume (GPA)</b>	<b>Hand-Held % Solution</b>	<b>Comments</b>
Alfalfa	1	3 - 10	2%	Make applications after the last hay cutting in the fall. Allow alfalfa to regrow to a height of 6 to 8 inches or more prior to treatment. Follow

				with deep tillage at least 7 days after treatment, but before soil freeze-up.
Alligatorweed	4	3 - 20	1.5%	Partial control. Apply when most of the plants are in bloom. Repeat applications will be required to maintain control.
Anise (fennel)	-	-	1 - 2%	Apply as a spray-to-wet treatment. Optimum results are obtained when plants are treated at the bud to full-bloom stage of growth.
Bahiagrass	3 - 5	3 - 20	2%	Apply when most plants have reached the early head stage.
Bentgrass	1.5	10 - 20	2%	For suppression in grass seed production areas. For ground applications only. Ensure entire crown area has resumed growth prior to a fall application. Bentgrass should have at least 3 inches of growth. Avoid tillage prior to treatment. Tillage 7 to 10 days after application is specified for best results.
Bermuda grass	3 - 5	3 - 20	2%	For control, apply 5 quarts of this product per acre. For partial control, apply 3 quarts per acre. Treat when Bermuda grass is actively growing and seedheads are present. Retreatment may be necessary to maintain control.
Bermuda grass, water (knotgrass)	1 - 1.5	5 - 10	2%	Apply 1.5 quarts of this product in 5 to 10 gallons of water per acre. Apply when water Bermuda grass is 12 to 18 inches in length. Allow 7 or more days before tilling, flushing or flooding the field. Fall applications only: Apply 1 quart of this product in 5 to 10 gallons of water per acre. Fallow fields should be tilled prior to application. Apply prior to frost on water Bermuda grass that is 12 to 18 inches in length. This product is not registered in California for use on water Bermuda grass.
Bindweed, field	0.5 - 5	3 - 20	2%	Do not treat when weeds are under drought stress as good soil moisture is necessary for active growth. For control, apply 4 to 5 quarts of this product per acre west of the Mississippi River and 3 to 4 quarts east of the Mississippi River. Apply when weeds are at or beyond full bloom. For best results, apply in late summer or fall. Fall treatments must be applied before a killing frost. Also for control, apply 2 quarts of this product 0.5 pound active ingredient of Banvel in 10 to 20 gallons of water per acre. Do not apply by air. For suppression on irrigated agricultural land, apply 1 to 2 quarts of this product 1 pound active ingredient 2,4-D in 10 to 20 gallons of water per acre with ground equipment only. The individual tank mix product must be registered for use on this site. Applications should be made following harvest or in fall fallow ground when the bindweed is actively growing and the majority of runners are 12 inches or more in length. The use of at least one irrigation will promote active bindweed growth. For suppression, apply 16 fluid ounces of this product 0.5 pound active ingredient of 2,4-D in 3 to 10 gallons of water per acre for ground applications and 3 to 5 gallons of water per acre for aerial applications. Apply by air in fallow and reduced tillage systems only. Delay applications until maximum emergence has occurred and when vines are between 6 to 18 inches in length. The individual tank mix product must be registered for use on this site. <b>In California only</b> , apply 1 to 5 quarts of this product per acre. Actual rate needed for suppression or control will vary within this range depending on local conditions. For suppression on irrigated land where annual tillage is performed, apply 1 quart of this product in 3 to 10 gallons of water per acre. Apply to bindweed that has reached a length of 12 inches or greater. Allow a maximum weed emergence and runner growth. Allow 3 or more days after application before tillage.
Bluegrass, Kentucky	1 - 2	3 - 40	2%	Apply 2 quarts of this product in 10 to 40 gallons of water per acre when most plants have reached boot-to-early seedhead development. For partial control in pasture or hay crop renovation, apply 1 to 1.5 quarts of this product in 3 to 10 gallons of water per acre. Apply to actively growing plants when most have reached 4 to 12 inches in height.

Blueweed, Texas	3 - 5	3 - 40	2%	Apply 4 to 5 quarts of this product per acre west of the Mississippi River and 3 to 4 quarts per acre east of the Mississippi River. Apply when plants are at or beyond full bloom. New leaf development indicates active growth. For best results, apply in late summer or fall. Fall treatments must be applied before a killing frost.
Brackenfern	3 - 4	3 - 40	1 - 1.5%	Apply to fully expanded fronds which are least 18 inches long.
Bromegrass, smooth	1 - 2	3 - 40	2%	Apply 2 quarts of this product in 10 to 40 gallons of water per acre when most plants have reached boot-to-early seedhead stage of development. For partial control in pasture or hay crop renovation, apply 1 to 1.5 quarts of this product in 3 to 10 gallons of water per acre. Apply to actively growing plants when most have reached 4 to 12 inches in height.
Bursage, woolly-leaf	See comments	3 - 20	2%	For control, apply 2 quarts of this product 1 pint of Banvel per acre. For partial control, apply 1 quart of this product 1 pint of Banvel per acre. Apply when plants are producing new active growth which has been initiated by moisture for at least 2 weeks and when plants are at or beyond flowering.
Canarygrass, reed	2 - 3	3 - 40	2%	For best results, apply when most plants have reached the boot-to-head stage of growth.
Cattail	3 - 5	3 - 40	2%	Apply when most plants have reached the early head stage.
Clover; red, white	3 - 5	3 - 20	2%	Apply when most plants have reached the early bud stage.
Cogongrass	3 - 5	10 - 40	2%	Apply when cogongrass is at least 18 inches tall in late summer or fall. Due to uneven stages of growth and the dense nature of vegetation preventing good spray coverage, repeat treatments may be necessary to maintain control.
Dallisgrass	3 - 5	3 - 20	2%	Apply when most plants have reached the early head stage.
Dandelion	3 - 5	3 - 40	2%	Apply when most plants have reached the early bud stage. Also for control, apply 16 fluid ounces of this product 0.5 pound active ingredient 2,4-D in 3 to 10 gallons of water per acre. The individual tank mix product must be registered for use on this site.
Dock, curly	3 - 5	3 - 40	2%	Apply when most plants have reached the early bud stage of growth. Also for control, apply 16 fluid ounces of this product 0.5 pound active ingredient 2,4-D in 3 to 10 gallons of water per acre. The individual tank mix product must be registered for use on this site.
Dogbane, hemp	4	3 - 40	2%	Apply when most plants have reached the late bud to flower stage of growth. Following crop harvest or mowing, allow weeds to regrow to a mature stage prior to treatment. For best results, apply in late summer or fall. For suppression, apply 16 fluid ounces of this product 0.5 pound active ingredient of 2,4-D in 3 to 10 gallons of water per acre for ground applications and 3 to 5 gallons of water per acre for aerial applications. Delay applications until maximum emergence of dogbane has occurred. The individual tank mix product must be registered for use on this site.
Fescue (except tall)	3 - 5	3 - 20	2%	Apply when most plants have reached the early head stage.
Fescue, tall	1 - 3	3 - 40	2%	Apply 3 quarts of this product per acre when most plants have reached boot-to-early seedhead stage of development. Fall applications only: Apply 1 quart of this product in 3 to 10 gallons of water per acre. Apply to fescue in the fall when plants have 6 to 12 inches of new growth. A sequential application of 1 pint per acre of this product will improve long-term control and control of seedlings germinating after fall treatments or the following spring.
Guineagrass	3	3 - 40	1%	Apply when most plants have reached at least the 7-leaf stage of growth. Ensure thorough coverage when using hand-held equipment.
Horsenettle	3 - 5	3 - 20	2%	Apply when most plants have reached the early bud stage.
Horseradish	4	3 - 40	2%	Apply when most plants have reached the late bud to flower stage of growth. For best results, apply in late summer or fall.



Iceplant	-	-	1.5 - 2%	Iceplant should be at or beyond the early bud stage of growth. Thorough coverage is necessary for best control.
Jerusalem artichoke	3 - 5	3 - 20	2%	Apply when most plants are in the early bud stage.
Johnsongrass	0.5 - 3	3 - 40	1%	In annual cropping systems apply 1 to 2 quarts of this product per acre. Apply 1 quart of this product in 3 to 10 gallons of water per acre. Use 2 quarts of this product when applying 10 to 40 gallons of water per acre. In non-crop, or areas where annual tillage (no-till) is not practiced, apply 2 to 3 quarts of this product in 10 to 40 gallons of water per acre. For best results, apply when most plants have reached boot-to-head stage of growth or in the fall prior to frost. Allow 7 or more days after application before tillage. Do not tank-mix with residual herbicides when using 1 quart per acre rate. For burndown of Johnsongrass, apply 1 pint of this product in 3 to 10 gallons of water per acre before the plants reach a height of 12 inches. For this use, allow at least 3 days after treatment before tillage. Spot treatment (partial control or suppression) - Apply a 1 percent solution of this product when Johnsongrass is 12 to 18 inches in height. Coverage should be uniform and complete.
Kikuyugrass	2 - 3	3 - 40	2%	Spray when most kikuyugrass is at least 8 inches in height (3 or 4 leaf stage of growth). Allow 3 or more days after application before tillage.
Knapweed	4	3 - 40	2%	Apply when most plants have reached the late bud to flower stage of growth. For best results, apply in late summer or fall.
Lantana	-	-	1 - 1.25%	Apply at or beyond the bloom stage of growth. Use the higher application rate for plants that have reached the woody stage of growth.
Lespedeza	3 - 5	3 - 20	2%	Apply when most plants have reached the early bud stage.
Milkweed (common)	3	3 - 40	2%	Apply when most plants have reached the late bud to flower stage of growth.
Muhly, wirestem	1 - 2	3 - 40	2%	Use 1 quart of this product in 3 to 10 gallons of water per acre. Use 2 quarts of this product when applying 10 to 40 gallons of water per acre or in pasture, sod or non-crop areas. Spray when the wirestem muhly is 8 inches or more in height. Do not till between harvest and fall applications or in the fall or spring or prior to spring applications. Allow 3 or more days after application before tillage.
Mullein, common	3 - 5	3 - 20	2%	Apply when most plants are in the early bud stage.
Napiergrass	3 - 5	3 - 20	2%	Apply when most plants are in the early head stage.
Nightshade, silverleaf	2	3 - 10	2%	Apply when at least 60% of the plants have berries. Fall treatments must be applied before a killing frost.
Nutsedge; purple, yellow	0.5 - 3	3 - 40	1 - 2%	Apply 3 quarts of this product per acre or apply a 1 to 2% solution for control of nutsedge plants and immature nutlets attached to treated plants. Treat when plants are in flower or when new nutlets can be found at rhizome tips. Nutlets which have not germinated will not be controlled and may germinate after treatment. Repeat treatments will be required for long-term control of ungerminated tubers. Sequential applications: 1 to 2 quarts of this product in 3 to 10 gallons of water per acre will also provide control. Make applications when a majority of the plants are in the 3 to 5-leaf stage (less than 6 inches tall). Repeat this application, as necessary, when newly emerging plants reach the 3 to 5-leaf stage. Subsequent applications will be necessary for long-term control. For partial control of existing plants, apply 1 pint to 2 quarts of this product in 3 to 40 gallons of water per acre. Treat when plants have 3 to 5 leaves and most are less than 6 inches tall. Repeat treatments will be required to control subsequent emerging plants or regrowth of existing plants.
Orchardgrass	1 - 2	3 - 40	2%	Apply 2 quarts of this product in 10 to 40 gallons of water per acre when most plants have reached boot-to-early seedhead stage of development. For partial control in pasture or hay crop renovation, apply 1 to 1.5 quarts of this product in 3 to 10 gallons of water per

				acre. Apply to actively growing plants when most have reached 4 to 12 inches in height. Orchardgrass sods going to no-till corn: Apply 1 to 1.5 quarts of this product in 3 to 10 gallons of water per acre. Apply to orchardgrass that is a minimum of 12 inches tall for spring applications and 6 inches tall for fall applications. Allow at least 3 days following application before planting. A sequential application of atrazine will be necessary for optimum results. The individual tank mix product must be registered for use on this site.
Pampasgrass	-	-	1.5 - 2%	Pampasgrass should be at or beyond the boot stage of growth. Thorough coverage is necessary for best control.
Paragrass	3 - 5	3 - 20	2%	Apply when most plants are in the early head stage.
Phragmites	3 - 5	10 - 40	1 - 2%	For partial control. For best results, treat during late summer or fall months or when plants are actively growing and in full bloom. Treatment before or after this stage may lead to reduced control. Due to the dense nature of the vegetation, which may prevent good spray coverage or uneven stages of growth, repeat treatments may be necessary to maintain control. Visual control symptoms will be slow to develop.
Poison hemlock	-	-	1 - 2%	Apply as a spray-to-wet treatment. Optimum results are obtained when plants are treated at the bud to full-bloom stage of growth.
Quackgrass	1 - 3	3 - 40	2%	In annual cropping systems, or in pastures and sods followed by deep tillage: Apply 1 quart of this product in 3 to 10 gallons of water per acre. For 10 to 40 gallons of water per acre, apply 2 quarts of this product. Do not tank mix with residual herbicides when using 1 quart rate. Spray when quackgrass is 6 to 8 inches in height. Do not till between harvest and fall applications or in fall or spring prior to spring application. Allow 3 or more days after application before tillage. In pastures or sods, use a moldboard plow for best results. In pastures, sods or non-crop areas where deep tillage does not follow application: Apply 2 to 3 quarts of this product in 10 to 40 gallons of water per acre when quackgrass is greater than 8 inches tall.
Redvine	0.75 - 2	5 - 10	2%	For suppression, apply 24 fluid ounces of this product per acre at each of two applications 7 to 14 days apart or a single application of 2 quarts per acre. Apply specified rates in 5 to 10 gallons of water per acre. Apply in late September or early October to plants which are at least 18 inches tall and have been growing 45 to 60 days since the last tillage operation. Make applications at least 1 week before a killing frost.
Reed, giant	-	-	2%	Best results are obtained when applications are made in the late summer to fall.
Ryegrass, perennial	1 - 3	3 - 40	1%	In annual cropping systems apply 1 to 2 quarts of this product per acre. Apply 1 quart of this product in 3 to 10 gallons of water per acre. Use 2 quarts of this product in 10 to 40 gallons of water per acre. In non-crop, or areas where annual tillage is not practiced (no-till), apply 2 to 3 quarts of this product in 10 to 40 gallons of water per acre. For best results, apply when most plants have reached the boot-to-head stage of growth or in the fall prior to frost. Do not tank-mix with residual herbicides when using 1 quart per acre rate.
Smartweed, swamp	3 - 5	3 - 40	2%	Apply when most plants have reached the early bud stage of growth. Also for control, apply 16 fluid ounces of this product 0.5 pound active ingredient of 2,4-D in 3 to 10 gallons of water per acre in the late summer or fall. The individual tank mix product must be registered for use on this site.
Spurge, leafy	-	3 - 10	2%	For suppression, apply 16 fluid ounces of this product 0.5 pound active ingredient 2,4-D in 3 to 10 gallons of water per acre in the late summer or fall. If mowing has occurred prior to treatment, apply when most of the plants are 12 inches tall. The individual tank mix product must be registered for use on this site.
Starthistle, yellow	2	10 - 40	2%	Best results are obtained when applications are made during the rosette, bolting and early flower stages.
Sweet potato, wild	-	-	2%	Partial control. Apply to plants that are at or beyond the bloom stage of growth. Repeat applications may be required.

Thistle, artichoke	-	-	2%	Partial control. Apply to plants that are at or beyond the bloom stage of growth. Repeat applications may be required.
Thistle, Canada	2 - 3	3 - 40	2%	Apply when most plants are at or beyond the bud stage of growth. After harvest, mowing or tillage in the late summer or fall, allow at least 4 weeks for initiation of active regrowth and rosette development prior to the application of this product. Fall treatments must be applied before a killing frost. Allow 3 or more days after application before tillage. For suppression, apply 1 quart of this product, or 1 pint of this product 0.5 pound active ingredient 2,4-D, in 3 to 10 gallons of water per acre in the late summer or fall after harvest, mowing or tillage. Allow rosette regrowth to a minimum of 6 inches in diameter before treating. Applications can be made as long as leaves are still green and plants are actively growing at the time of application. Allow 3 or more days after application before tillage. The individual tank mix product must be registered for use on this site.
Timothy	2 - 3	3 - 40	2%	For best results, apply when most plants have reached the boot-to-head stage of growth.
Torpedograss	4 - 5	3 - 40	2%	For partial control. Apply when most plants are at or beyond the seedhead stage of growth. Repeat applications will be required to maintain control. Fall treatments must be applied before frost.
Trumpet creeper	2	5 - 10	2%	Partial control. Apply in late September or October, to plants which are at least 18 inches tall and have been growing 45 to 60 days since the last tillage operation. Make applications at least 1 week before a killing frost.
Vaseygrass	3 - 5	3 - 20	2%	Apply when most plants are in the early head stage.
Velvetgrass	3 - 5	3 - 20	2%	Apply when most plants are in the early head stage.
Wheatgrass, western	2 - 3	3 - 40	2%	For best results, apply when most plants have reached the boot-to-head stage of growth.

### **WOODY BRUSH AND TREES RATE TABLE**

Apply this product after full leaf expansion, unless otherwise directed. Use higher rate for larger plants and/or dense areas of growth. On vines, use the higher rate for plants that have reached the woody stage of growth. Best results are obtained when application is made in late summer or fall after fruit formation.

In arid areas, best results are obtained when applications are made in the spring to early summer when brush species are at high moisture content and are flowering.

Ensure thorough coverage when using hand-held equipment. Symptoms may not appear prior to frost or senescence with fall treatments.

Allow 7 or more days after application before tillage, mowing or removal. Repeat treatments may be necessary to control plants regenerating from underground parts or seed. Some autumn colors on undesirable deciduous species are acceptable provided no major leaf drop has occurred. Reduced performance may result if fall treatments are made following a frost.

Weeds Species	Nasa (QT/A)	Water Volume (GPA)	Hand-Held % Solution	Comments
Alder	3 - 4	3 - 40	1 - 1.5%	For control
Ash	2 - 5	3 - 40	1 - 2%	Partial control
Aspen, quaking	2 - 3	3 - 40	1 - 1.5%	For control
Bearmat (Bearclover)	2 - 5	3 - 40	1 - 2%	Partial control
Beech	2 - 5	3 - 40	1 - 2%	Partial control
Birch	2	3 - 40	1%	For control
Blackberry	3 - 4	10 - 40	1 - 1.5%	For control. Make applications after plants have reached full leaf maturity. Best results are obtained

				when applications are made in late summer or fall. Applications may also be made after leaf drop and until a killing frost or as long as stems are green. After berries have set or dropped in late fall, blackberry can be controlled by applying a 3/4% solution of this product. For control of blackberries after leaf drop and until killing frost or as long as stems are green, apply 3 to 4 quarts of this product in 10 to 40 gallons of water per acre.
Blackgum	2 - 5	3 - 40	1 - 2%	For control
Bracken	2 - 5	3 - 40	1 - 2%	For control
Broom: French, Scotch	-	-	1.5 - 2%	For control
Buckwheat, California	-	-	1 - 2%	For partial control. Thorough coverage of foliage is necessary for best results.
Cascara	2 - 5	3 - 40	1 - 2%	Partial control
Catsclaw	-	-	1 - 1.5%	Partial control
Ceanothus	2 - 5	3 - 40	1 - 2%	Partial control
Chamise	-	-	1%	For control. Thorough coverage of foliage is necessary for best results.
Cherry: bitter, black, pin	2 - 3	3 - 40	1 - 1.5%	For control
Coyote brush	-	-	1.5 - 2%	For control. Apply when at least 50% of the new leaves are fully developed.
Dogwood	2 - 5	3 - 40	1 - 2%	Partial control
Elderberry	2	3 - 40	1%	For control
Elm	2 - 5	3 - 40	1 - 2%	Partial control
Eucalyptus	-	-	2%	For control of eucalyptus resprouts, apply when resprouts are 6 to 12 feet tall. Ensure complete coverage. Avoid application to drought-stressed plants.
Florida holly (Brazilian peppertree)	2 - 5	3 - 40	1 - 2%	Partial control
Gorse	2 - 5	3 - 40	1 - 2%	Partial control
Hazardia	-	-	1 - 2%	Partial control. Thorough coverage of foliage is necessary for best results.
Hawthorn	2 - 3	3 - 40	1 - 1.5%	For control
Hazel	2	3 - 40	1%	For control
Hickory	2 - 5	3 - 40	1 - 2%	Partial control
Honeysuckle	3 - 4	3 - 40	1 - 1.5%	For control
Hornbeam, American	2 - 5	3 - 40	1 - 2%	Partial control
Kudzu	4	3 - 40	2%	For control. Repeat applications may be required to maintain control.
Locust, black	2 - 4	3 - 40	1 - 2%	Partial control
Madrone resprouts	-	-	2%	Partial control. Apply to resprouts that are 3 to 6 feet tall. Best results are obtained with spring or early summer treatments.
Manzanita	2 - 5	3 - 40	1 - 2%	Partial control

Maple, red	2 - 4	3 - 40	1 - 1.5%	For control, apply a 1 to 1.5% solution when at least 50% of the new leaves are fully developed. For partial control, apply 2 to 4 quarts of this product per acre.
Maple, sugar	-	-	1 - 1.5%	For control. Apply when at least 50% of the new leaves are fully developed.
Monkey flower	-	-	1 - 2%	Partial control. Thorough coverage of foliage is necessary for best results.
Oak; black, white	2 - 4	3 - 40	1 - 2%	Partial control
Oak, post	3 - 4	3 - 40	1 - 1.5%	For control
Oak; northern, pin	-	-	1 - 1.5%	For control. Apply when at least 50% of the new leaves are fully developed.
Oak, southern red	2 - 3	3 - 40	1 - 1.5%	For control
Persimmon	2 - 5	3 - 40	1 - 2%	Partial control
Pine	2 - 5	3 - 40	1 - 2%	For control
Poison ivy / Poison oak	4 - 5	3 - 40	2%	For control. Repeat applications may be required to maintain control. Fall treatments must be applied before leaves lose green color.
Poplar, yellow	2 - 5	3 - 40	1 - 2%	Partial control
Redbud, eastern	2 - 5	3 - 40	1 - 2%	For control
Rose, multiflora	2	3 - 40	1%	For control. Treatments should be made prior to leaf deterioration by leaf-eating insects.
Russian olive	2 - 5	3 - 40	1 - 2%	Partial control
Sage, black	-	-	1%	For control. Thorough coverage of foliage is necessary for best results.
Sage, white	2 - 5	3 - 40	1 - 2%	Partial control
Sagebrush, California	-	-	1%	For control. Thorough coverage of foliage is necessary for best results.
Salmonberry	2	3 - 40	1%	For control
Saltcedar	2 - 5	3 - 40	1 - 2%	For control
Sassafras	2 - 5	3 - 40	1 - 2%	Partial control
Sourwood	2 - 5	3 - 40	1 - 2%	Partial control
Sumac; poison, smooth, winged	2 - 4	3 - 40	1 - 2%	Partial control
Sweetgum	2 - 3	3 - 40	1 - 1.5%	For control
Swordfern	2 - 5	3 - 40	1 - 2%	Partial control
Tallowtree, Chinese	-	-	1%	For control. Thorough coverage of foliage is necessary for best results.
Tan oak resprouts	-	-	2%	For partial control. Apply to resprouts that are less than 3 to 6 feet tall. Best results are obtained with fall applications.
Thimbleberry	2	3 - 40	1%	For control
Tobacco, tree	-	-	1 - 2%	Partial control
Trumpet creeper	2 - 3	3 - 40	1 - 1.5%	For control
Vine maple	2 - 5	3 - 40	1 - 2%	Partial control

Virginia creeper	2 - 5	3 - 40	1 - 2%	For control
Waxmyrtle, southern	2 - 5	3 - 40	1 - 2%	Partial control
Willow	3	3 - 40	1%	For control



**DISCLAIMER**

The label instructions for use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application all of which are beyond the control of **Agromarketing Co. Inc.**. To the extent permitted under applicable law, all risks shall be assumed by the user.

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