

# ***Glyphosate Plus***

## ***Herbicide***

AVOID CONTACT OF HERBICIDE WITH FOLIAGE, GREEN STEMS, EXPOSED NON-WOODY ROOTS OR FRUIT OF CROPS (EXCEPT AS SPECIFIED FOR INDIVIDUAL ROUNDUP READY® CROPS), DESIRABLE PLANTS AND TREES, BECAUSE SEVERE INJURY OR DESTRUCTION MAY RESULT.

ACTIVE INGREDIENT:

\*Glyphosate, N-(phosphonomethyl)glycine, in the form of its isopropylamine salt..... 41.0%

OTHER INGREDIENTS: ..... 59.0%

TOTAL 100.0%

\*Contains 480 grams per liter or 4 pounds per U.S. gallon of the active ingredient glyphosate, in the form of its isopropylamine salt. Equivalent to 356 grams per liter or 3 pounds per U.S. gallon of the acid, glyphosate.

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

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

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

Not all products specified on this label are registered for use in California. Check the registration status of each product in California before using.

Read the "LIMIT OF WARRANTY AND LIABILITY" statement at the end of the label before buying or using. If terms are not acceptable, return at once unopened.

See label booklet for Additional Precautionary Statements and Directions for Use.

**Manufactured For:**

**TACOMA AG, LLC**

**P.O. Box 14073**

**Durham, NC 27709**

**EPA Reg. No. 83520-7**

# PRECAUTIONARY STATEMENTS

## Hazards to Humans and Domestic Animals

Harmful if inhaled. Causes moderate eye irritation. Avoid breathing spray mist. Avoid contact with eyes or clothing.

### 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 eye.
- Call a Poison Control Center or doctor for treatment advice.

#### IF INHALED

- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
- Call a Poison Control Center or doctor for further 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.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. This product is identified as Glyphosate Plus, EPA Registration No. 83520-7. You may also contact 1-800-222-1222 day or night, for emergency medical treatment information.

### Personal Protective Equipment (PPE)

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

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in 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:

Users should:

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

**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.

### 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.

### Physical or Chemical Hazards

Spray solutions of this product should 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.

### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in any manner inconsistent with its labeling. This product can only be used in accordance with the Directions for Use on this label or in separately published Supplemental Labeling.

**ENDANGERED SPECIES PROTECTION REQUIREMENTS:** This product may have effects on federally listed threatened or endangered species or their critical habitat in some locations. When using this product, you must follow the measures contained in the Endangered Species Protection Bulletin for the county or parish in which you are applying the pesticide. To determine whether your county or parish has a Bulletin, and to obtain that Bulletin, consult <http://www.epa.gov/espp/> or call 1-800-447-3813 no more than 6 months before using this product. Applicants must use Bulletins that are in effect in the month in which the pesticide will be applied. New Bulletins will generally be available from the above sources 6 months prior to their effective dates.

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

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 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 greater than 14 mils in thickness composed of materials such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber, shoes plus socks and protective eyewear.

## Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses. Keep people and pets off treated areas until spray solution has dried.

## STORAGE AND DISPOSAL

Do not contaminate water, foodstuffs, feed or seed by storage or disposal. **PESTICIDE STORAGE:** Keep container closed to prevent spills and contamination.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, state, or local procedures. Emptied container retains vapor and product residue. Observe all labeled safeguards until container is cleaned, reconditioned, or destroyed.

**CONTAINER DISPOSAL:** Non-refillable containers. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

**Non-refillable container less than or equal to 5 gallons:** Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

**Non-refillable container greater than 5 gallons:** Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 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 back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

**Pressure rinse as follows (all sizes):** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**Refillable container (250 gallon & bulk):** Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from the container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing process two more times.

## USE INFORMATION

This product is a postemergence, systemic herbicide with no soil residual 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. It may be applied through most standard industrial or field sprayers after dilution and thorough mixing with water or other carriers according to label instructions.

### Time to Symptoms

This product moves through the plant from the point of foliage contact to and into the root system. 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. Effects are visible on most annual weeds within 2 to 4 days, but on most perennial weeds effects may not be visible for 7 days or more. Extremely cool or cloudy weather following treatment may slow activity of this product and delay development of visual symptoms.

### 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 WEEDS", "PERENNIAL WEEDS" and "WOODY BRUSH AND TREES RATE SECTIONS" for specific weed recommendations.

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

Reduced weed control may result from treating weeds with disease or insect damage, weeds heavily covered with dust, or weeds under poor growing conditions.

### Cultural Considerations

Reduced control may result when applications are made to annual or 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 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 should be uniform and complete. Do not spray foliage to the point of runoff.

### Mode of Action

The active ingredient in this product inhibits an enzyme found only in plants and microorganisms that is essential to the 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. Un-emerged plants arising from unattached underground rhizomes or root stocks of perennials will not be affected by this herbicide and will continue to grow.

### Biological Degradation

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

### Annual Maximum Application Rates

The maximum application or use rates stated throughout this product's labeling are given in units of volume (fluid ounces, pints, or quarts) of this product per

acre. However, the maximum allowed application rates apply to this product combined with the use of any and all other herbicides containing the active ingredient glyphosate, whether applied separately or as tank mixtures, on a basis of total pounds of glyphosate (acid equivalents) per acre. If more than one glyphosate-containing product is applied to the same site within the same year, you must ensure that the total use of glyphosate does not exceed the maximum allowed. See the "INGREDIENTS" section of this label for necessary product information.

Except as otherwise specified in a crop section of this label, the combined total of all treatments must not exceed 8 quarts of this product (6 pounds of glyphosate acid) per acre per year. For applications in non-crop sites or in tree, vine, or shrub crops, the combined total of all treatments must not exceed 10.6 quarts of this product (8 pounds of glyphosate acid) per acre per year.

#### **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 increases when winds are gusty, as wind velocity increases, when wind direction is constantly changing or when there are other meteorological conditions that favor spray drift. When spraying, avoid combinations of pressure and nozzle type that will result in splatter or fine particles (mist) that are likely to drift. **AVOID APPLYING AT EXCESSIVE SPEED OR PRESSURE.**

**NOTE:** Use of this product in any manner not consistent with this label may result in injury to persons, animals or crops, or have other unintended consequences.

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### **WEED RESISTANCE MANAGEMENT**

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Glyphosate, the active ingredient in this product, is a Group 9 herbicide based on the mode of action classification system of the Weed Science Society of America. Any weed population may contain plants naturally resistant to Group 9 herbicides. Weed species resistant to Group 9 herbicides may be effectively managed utilizing another herbicide from a different Group or by using other cultural or mechanical practices.

#### **Weed Management Recommendations**

To minimize the occurrence of glyphosate-resistant biotypes observe the following weed management recommendations:

- Scout your fields before and after herbicide applications.
- Start with a clean field, using either a burndown herbicide application or tillage.
- Control weeds early when they are relatively small.
- Add other herbicides (e.g. a selective and/or a residual herbicide) and cultural practices (e.g. tillage or crop rotation) where appropriate.
- One method for adding other herbicides into a continuous Roundup Ready system is to rotate to other Roundup Ready crops.
- Utilize the specified label rate for the most difficult to control weed in your field. Avoid tank-mixtures with other herbicides that reduce this product's efficacy (through antagonism), or tank mixture recommendations that encour-

age application rates of this product below the label recommendations.

- Control weed escapes and prevent weeds from setting seeds.
- Clean equipment before moving from field to field to minimize the spread of weed seed or plant parts.
- Use new commercial seed that is as free of weed seed as possible.
- Report any incidence of repeated non-performance of this product on a particular weed to your county extension agent.

### **Management Recommendations** **For Glyphosate Resistant Biotypes**

**Note:** Appropriate testing is critical in order to determine if a weed is resistant to glyphosate. Contact your local county extension agent or visit the following websites [www.weedresistancemanagement.com](http://www.weedresistancemanagement.com) or [www.weedscience.org](http://www.weedscience.org). For more information see the "ANNUAL WEEDS" and "PERENNIAL WEEDS RATE SECTION" of this label.

Since the occurrence of new glyphosate resistant weeds cannot be determined until after product use and scientific confirmation, Tacoma Ag, LLC is not responsible for any losses that may result from the failure of this product to control glyphosate resistant weeds biotypes.

The following good agronomic practices are specified to reduce the spread of confirmed glyphosate resistant biotypes:

- If a naturally occurring resistant biotype is present in your field, this product should be tank-mixed or applied sequentially with an appropriately labeled herbicide with a different mode of action to achieve control.
- Cultural and mechanical control practices (e.g. crop rotation or tillage) may also be used as appropriate.
- One method for adding other herbicides into a continuous Roundup Ready system is to rotate to other Roundup Ready crops.
- Scout treated fields after herbicide applications and control escaping weeds including resistant biotypes before they set seed.
- Thoroughly clean equipment before leaving fields known to contain resistant biotypes.

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### **MIXING**

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Spray solutions of this product should be mixed, stored and applied using only clean 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.**

Eliminate any risk of siphoning the contents of the tank back into the carrier source while mixing. Use approved anti-back-siphoning devices where required by State or local regulations.

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

**NOTE: PRODUCT PERFORMANCE MAY BE SIGNIFICANTLY REDUCED IF WATER CONTAINING SOIL SEDIMENT IS USED AS CARRIER. DO NOT MIX THIS PRODUCT WITH WATER FROM PONDS AND DITCHES THAT IS VISIBLY MUDDY OR MURKY.**

#### **Mixing with Water**

This product mixes readily with water. Mix spray solutions of this product as follows: Begin filling the mixing tank or spray tank with clean water. Add the

specified amount of this product near the end of the filling process and mix gently. Use caution to avoid siphoning back into the carrier source. During mixing, foaming of the spray solution may occur. To prevent or minimize foaming, mix gently, terminate by-pass and return lines at the bottom of the tank and, if necessary, use an anti-foam or defoaming agent.

### **Tank Mixtures**

This product does not provide residual weed control. This product may be tank-mixed with other herbicides to provide residual weed control, a broader weed control spectrum or an alternate mode of action. Read and follow all label directions of all products in the tank mixture.

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 specified in this labeling, or in separate supplemental labeling for this product.

Tank mixtures with other herbicides, insecticides, fungicides, micronutrients or foliar fertilizers may result in reduced weed control or crop injury and are NOT specified for applications of this product unless otherwise noted in this product label, or in separate supplemental labeling.

When a tank mixture with a generic active ingredient, such as diuron, atrazine, 2,4-D or dicamba, is specified in this label, the user is responsible for ensuring that the specific application being made is included on the label of the specific product being used in the tank mixture.

Refer to all individual product labels, supplemental labeling and fact sheets for all products in the tank mixture, and observe all precautions and limitations on the label, including application timing restrictions, soil restrictions, minimum re-cropping interval and rotational guidelines. Use according to the most restrictive label requirements.

Always predetermine the compatibility of all tank-mix products together in the carrier by mixing small proportional quantities in advance. For best results, it is specified that tank mixtures with this product be applied at a minimum spray volume rate of 10 gallons per acre.

### **Tank Mixing Procedure**

Prepare tank mixtures of this product as follows:

1. Place a 20- to 35-mesh screen or wetting basket over the filling port of the tank.
2. Through the screen, fill the tank one-half full with water and start gentle agitation.
3. If ammonium sulfate is to be used, add it slowly through the screen into the tank, and continue adding water into the tank through the screen. If dry ammonium sulfate is being used, ensure that it is completely dissolved in the tank before adding other products.
4. If a wettable powder is used, make a slurry with the water, and add it SLOWLY through the screen into the tank while continuing gentle agitation.
5. If a flowable formulation is used, premix one part flowable with one part water, and add the diluted mixture SLOWLY through the screen into the tank while continuing gentle agitation.
6. If an emulsifiable concentrate formulation is used, premix one part emulsifiable concentrate with two parts water, and add the diluted mixture slowly through the screen into the tank while continuing gentle agitation.
7. Continue filling the tank with water through the screen and add the required amount of this product near the end of the filling process.
8. If a nonionic surfactant is used, add it to the tank before completing the filling process.

9. Add individual formulations to the spray tank as follows: wettable powder, flowable, emulsifiable concentrate, drift control additive, water-soluble liquids (this product) followed by surfactant.

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

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

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

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

#### **Spray Solution**

<b>Desired Volume</b>	<b>Amount of Glyphosate Plus</b>					
	<b>0.5 %</b>	<b>1%</b>	<b>1.5%</b>	<b>2%</b>	<b>5%</b>	<b>10%</b>
1 gal	0.7 oz	1.3 oz	2 oz	2.7 oz	6.5 oz	13 oz
25 gal	1 pt	1 qt	1.5 qt	2 qt	5 qt	10 qt
100 gal	2 qt	1 gal	1.5 gal	2 gal	5 gal	10 gal

2 tablespoons = 1 fluid ounce

For use in backpack sprayers, it is specified that the appropriate amount of this product be mixed with water in a larger container and then fill the sprayer with the mixed solution.

### **Surfactants**

Nonionic surfactants (NIS) or wetting agents that have at least 70 percent active ingredient and are labeled for use with herbicides may be added to the spray solution, unless otherwise directed. Do not reduce rates of this herbicide when adding surfactants. Read and carefully observe cautionary statements and other information appearing on the additives label.

### **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 on annual and perennial weeds, particularly under hard water conditions, drought conditions or when tank mixed with certain residual herbicides. The equivalent rate of ammonium sulfate in a liquid formulation may also be used. Ensure that dry 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 or Dyes**

Colorants or marking dyes may be added to spray solutions of this product; however, they can reduce performance. Use colorants or dyes according to the manufacturer's recommendations.

### **Drift Reduction Additives**

Drift reduction additives may be used with all equipment types, except wiper applicators, sponge bars and Controlled Droplet Applicator (CDA) equipment. When a drift reduction additive is used, read and carefully observe the precautions, limitations, and all other information appearing on the additive label. Use of drift reduction additives can affect spray coverage, which can reduce product performance.

## 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 sprayers, floaters, pick-up sprayers, spray coupes and other ground broadcast equipment.

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

\*This product is not registered in California or Arizona for use in mistblowers.

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

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

**Controlled Droplet Applicator (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 THE DESIRED VOLUMES.

### Aerial Equipment

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

All labeled treatments may be made by aerial equipment where appropriate, provided that the applicator complies with the precautions and restrictions specified on this product's labeling. 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 2 quarts per acre. Refer to the individual use area sections of this label for further instructions.

This product, when tank mixed with dicamba, may not be applied by air in California. When tank-mixing this product with 2,4-D, only 2,4-D amine formulations may be used for aerial application in California. Tank mixtures with 2,4-D amine formulations may be applied by air in California for fallow and reduced tillage systems, and for alfalfa and pasture renovation applications only.

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

#### Aircraft Maintenance

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 MOST SUSCEPTIBLE. Maintaining an organic coating (paint) that meets aerospace specification MIL-C-38413 may help prevent corrosion.

#### AERIAL SPRAY DRIFT MANAGEMENT

The following drift management requirements must be followed to avoid off-target movement during aerial applications to agricultural field crops.

1. The distance of the outermost 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. Comply with all State regulations where applicable.

#### 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 (read the following sections on "Wind", "Temperature and Humidity", and "Temperature Inversions").

#### Controlling Droplet Size

- **Volume:** Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with the 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 spray pressure.
- **Number of nozzles:** Use the minimum number of nozzles that will 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 height:** 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 the exposure of the droplets to evaporation and wind.

#### Swath Adjustment

When applications are made with a crosswind, 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 should increase, with increasing drift potential (higher wind speed, smaller droplets, etc.).

#### Wind

Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given wind speed. Application must be avoided when wind speeds are 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 Inversions

Applications must not occur 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 temperatures 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, the movement of smoke produced by a ground source or an aircraft smoke generator can also identify temperature inversions. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

#### **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).

Avoid direct application to any body of water.

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

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.

#### **Noncrop sites**

When applied as directed and under the conditions described in the "Weeds Controlled" section of this label booklet for this product, this herbicide will control or partially control the labeled weeds growing in the following industrial, recreational and public areas, including airports, ditch banks, dry ditches, dry canals, fencerows, golf courses, highways, industrial plant sites, lumber yards, manufacturing sites, office complexes, parking areas, parks, petroleum tank farms and pumping installations, pipelines, power and telephone rights-of-way, railroads, roadsides (guardrails, shoulders), schools, storage areas, utility substances, warehouse areas and other public sites.

**AVOID DRIFT – DO NOT APPLY WHEN WINDS ARE GUSTY OR UNDER ANY OTHER CONDITION WHICH WILL ALLOW 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 or crop(s) 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 droplets. Do not angle nozzles forward into the airstream and do not increase spray volume by increasing nozzle pressure above the manufacturer's recommendation.

Drift control additives may be used. When a drift control additive is used, read and carefully observe the cautionary statements and all other information appearing on the additive label.

Ensure uniform application—to avoid streaking and 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 MOST SUSCEPTIBLE.** Maintaining an organic coating (paint) that meets aerospace specification MIL-C-38413 may prevent corrosion.

#### **For Aerial Application in Fresno County, California Only**

From February 15 through March 31 only. For aerial application outside of these dates, refer to the "FOR AERIAL APPLICATION IN CALIFORNIA ONLY" section printed above.

#### **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

#### **Use Information**

Always read and follow the label directions 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 herbicide. 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 applicable product label(s) and this label have been satisfied.

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

Aerial application of this herbicide 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-in constitutes such documentation, or other written records showing calculations and measurements of flight and spray parameters acceptable to the Fresno County Agricultural Commissioner.

**Application 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.

Read the "WARRANTY" section in the label booklet before using this product.

### **Ground Broadcast Equipment**

Apply the product rates specified in this label in 3 to 40 gallons of water per acre as a broadcast spray unless otherwise specified. As density of weeds increases, spray volume should be increased within the specified range to ensure complete coverage. Carefully select proper nozzles to avoid generating a fine mist. For best results with ground application equipment, use flat spray nozzles. Check spray pattern for uniform distribution.

## Hand-Held or Backpack Equipment

Apply to foliage of vegetation to be controlled on a spray-to-wet basis; do not spray to the point of run-off. Spray coverage should be uniform and complete. Use coarse sprays only. For specific rates and timing, refer to the "ANNUAL WEEDS -- HAND-HELD OR BACKPACK EQUIPMENT" section of this product label.

For low-volume directed spray applications, spray coverage should be uniform with at least 50 percent of the foliage contacted. Coverage of the top one-half of the plant is important for best results. To ensure adequate spray coverage, spray both sides of large or tall woody brush and trees, when foliage is thick and dense, or where there are multiple sprouts.

## Selective Equipment

This product may be diluted in water and applied through shielded sprayers, hooded sprayers, wiper applicators or sponge bars to weeds growing in any non-crop site specified on this label.

In cropping systems, hooded sprayers, shielded sprayers, and wipers may be used in row middles (in between rows of crop plants), and wipers may be used over-the-top of crops only when specified in this product's labeling. Such equipment must be capable of preventing all crop contact with the herbicide solutions and operated without leakage of spray mists or dripping onto crop.

### AVOID CONTACT OF HERBICIDE WITH DESIRABLE VEGETATION.

Contact of this product with desirable vegetation may result in unwanted plant damage or destruction. Crop injury may occur when the foliage of treated weeds comes into contact with leaves of the crop. Do not apply this product when crop leaves are growing in direct contact with weeds to be treated. Droplets, mist, foam or splatter of the herbicide solution settling onto desirable vegetation may result in discoloration, stunting or destruction.

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 the height of the weeds varies so that not all weeds are contacted. In these instances, repeat treatment may be necessary.

### Shielded and Hooded Sprayers

When applied as directed under conditions described for shielded applicators, this product will control those weeds listed in the "ANNUAL WEEDS RATE SECTION" and "PERENNIAL WEEDS RATE SECTION" of this label. Use the following equation to convert from a broadcast rate per acre to a band rate per acre.

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Herbicide Broadcast RATE} = \text{Herbicide Band RATE}$$

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Broadcast VOLUME of solution per acre} = \text{Band VOLUME of solution per acre}$$

A hooded sprayer is a type of shielded applicator where the spray pattern is fully enclosed including top, sides, front and back, thereby shielding the crop from the spray solution. Adjust the shields on these sprayers to protect desirable vegetation. When applying to crops grown on raised beds, ensure that the hood is capable of completely enclosing the spray pattern. If necessary, extend the front and rear flaps of the hooded applicator downward to reach the ground in deep furrows. EXTREME CARE MUST BE TAKEN TO AVOID CONTACT OF HERBICIDE WITH DESIRABLE VEGETATION.

This equipment must be configured and operated in a manner that minimizes bouncing and avoids raising the hoods up off the ground at any time. If the hood is raised, spray particles may escape and come into contact with the crop, causing damage or destruction of the crop. Avoid operating this equipment on rough or sloping terrain where the spray hoods might be raised up off the ground surface.

Use hoods designed to minimize excessive dripping or run-off down the insides of the hoods. 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 is specified. Spray volume should be 20-30 gallons per acre.

These procedures will reduce the potential for crop injury:

- Spray hoods must be operated on the ground or skimming across the ground surface.
- Leave at least an 8-inch untreated strip over the drill row. (For example, if the crop row width is 38 inches, the maximum width of the spray hood should be 30 inches.)
- Operate at ground speeds of no greater than 5 miles per hour to avoid bouncing of the spray hoods.
- Apply when wind speeds are 10 miles per hour or less.
- Use low-drift nozzles that provide uniform coverage within the treated area.

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

### Wiper Applicators

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.

Application equipment used over the top of desirable vegetation should be adjusted so that the wiper contact point is at least 2 inches above the desirable vegetation. Better results may be obtained when more of the weed is exposed to the herbicide solution. Weeds should be a minimum of 6 inches above the desirable vegetation. Adjust height of applicator to ensure adequate contact with weeds. Weeds not contacted by the herbicide solution will not be affected. Poor contact may occur when weeds are growing in dense clumps, in severe weed infestations or when weed height varies dramatically. In these instances, repeat treatments may be necessary.

Operate this equipment at ground speeds no greater than 5 miles per hour. Performance may be improved by reducing speed in areas of heavy weed infestations to provide adequate wiper saturation with the herbicide solution. Better results may be obtained when two applications are made in opposite directions.

Droplets, mist, foam or splatter of the herbicide solution settling onto desirable vegetation may result in discoloration, stunting or destruction. Avoid leakage or dripping onto desirable vegetation. 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 the wiper applicator.

Do not use wiper equipment when weeds are wet.

Mix only the amount of this product to be used during a 1-day period, as reduced product performance may result from use of solutions held in storage. 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:** Use solutions ranging from 33 to 75 percent of this product in water.

**For Panel Applicators:** Use solutions ranging from 33 to 100 percent of this product in water.



## 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 for use in injection systems.

## CDA Equipment

The rate of this product applied per acre by vehicle-mounted controlled droplet applicator (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 in 2 to 15 gallons of water per acre.

For control of annual weeds with hand-held CDA units, apply a 20 percent 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 percent 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 applicators produce a spray pattern that is not easily visible. Extreme care must be taken to avoid spray or drift onto the foliage or any other green tissue of desirable vegetation, as damage or destruction of the plant may result.

## ANNUAL AND PERENNIAL CROPS (Alphabetical)

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

See the "ROUNDUP READY CROPS" section of this label or separately published Supplemental Labeling for this product for instructions on treating Roundup Ready crops.

### TYPES OF APPLICATIONS:

Chemical Fallow, Preplant Fallow Beds, Preplant, At-Planting, Preemergence, Hooded Sprayers in Row-Middles, Shielded Sprayers in Row-Middles, Wiper Application in Row-Middles, Post-Harvest.

### USE INSTRUCTIONS:

Apply this product during fallow intervals preceding planting, prior to planting or transplanting, at-planting, or preemergence 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 WEEDS", "PERENNIAL WEEDS", AND "WOODY BRUSH AND TREES RATE SECTIONS" in this label. Specific rates of this product that are emphasized in this product's labeling to control tough weeds take precedence over the rates in the "ANNUAL WEEDS" and "PERENNIAL WEEDS RATE SECTIONS". Repeat applications may be made up to a maximum of 8 quarts of this product per acre per year.

Post-directed hooded sprayers and wiper applicators capable of preventing all crop contact with herbicide solutions may be used in mulched or unmulched row middles after crop establishment. Where specifically noted in the individual crop sections that follow, wipers may also be used above certain crops to control tall weeds. Refer to the "SELECTIVE EQUIPMENT" section of this label for essential precautions regarding crop injury. Crop injury is possible with these applications and shall be the sole responsibility of the applicator.

All labeled treatments may be made by aerial equipment where appropriate, provided that the applicator complies with the precautions and restrictions specified in this product's labeling. Refer to the "AERIAL EQUIPMENT" section of this label for additional information.

### PRECAUTIONS, RESTRICTIONS:

Avoid contact of this herbicide with foliage, green shoots or stems, bark, exposed roots (including those emerging from plastic mulch), or fruit of crops as severe crop injury or destruction may result. When making at-planting and pre-emergence applications, applications must be made before crop emergence to avoid severe crop injury. Broadcast applications made at emergence will result in injury or death of emerged seedlings. Apply before seed germination in coarse sandy soils to further minimize the risk of injury. Unless otherwise specified in this product's labeling, treatments with selective equipment including wipers and hooded sprayers must be made at least 14 days prior to harvest. Post-harvest or fallow applications must be made at least 30 days prior to planting any crops not listed on this label. 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. Crop sprayed in treated area will be killed. Take care not to spray or allow spray to drift outside the target area in order to avoid unwanted crop destruction.

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

## Cereal and Grain Crops

LABELLED CROPS: Barley, Buckwheat, Millet (pearl, proso), Oats, Rice, Rye, Quinoa, Teff, Teosinte, Triticale, Wheat (all types), and Wild rice.

PRECAUTIONS, RESTRICTIONS: Do not treat rice fields or levees when flooded.

TYPES OF APPLICATIONS: Those listed in "ANNUAL AND PERENNIAL CROPS" section of this label plus the following: Red Rice Control Prior to Planting Rice, Spot Treatment (Except Rice), Over-The-Top Wiper Application (Feed Barley and Wheat only), Preharvest (Wheat And Feed Barley Only).

### Preplant, Preemergence, At-Planting

USE INSTRUCTIONS: This product may be applied before, during or after planting of cereal crops. Applications must be made prior to crop emergence.

TANK MIXTURES: In wheat, a tank mix with Aim may be used.

### Red Rice Control Prior to Planting Rice

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 the red rice plants are at 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, RESTRICTIONS: Avoid spraying during conditions of low humidity, as reduced control may result. Do not treat rice fields or levees when the fields contain floodwater. Do not flood treated fields for 8 days following application.

### 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, RESTRICTIONS: Do not treat more than 10 percent of the total field area to be harvested. Crop sprayed in treated area will be killed. Take care not to spray or to allow spray to drift outside target area to avoid unwanted crop destruction.

### Over-the-top Wiper Application (Feed Barley and Wheat only)

USE INSTRUCTIONS: Wiper applications may be used in wheat and feed barley. To control common rye or cereal rye, apply after the weeds have headed and achieved maximum growth.

**PRECAUTIONS, RESTRICTIONS:** Allow at least 35 days between application and harvest. Do not use roller applicators. Droplets, mist, foam or splatter of the herbicide solution settling onto desirable vegetation may result in discoloration, stunting or destruction.

#### **Preharvest (Feed Barley And Wheat Only)**

**USE INSTRUCTIONS:** This product provides weed control when applied prior to harvest of feed barley or wheat. For wheat, apply after the hard-dough stage of grain (30 percent or less grain moisture). For feed barley, apply after the hard-dough stage and when the grain contains 20 percent moisture or less. Stubble may be grazed immediately after harvest.

For ground applications, apply this product in 10 to 20 gallons of water per acre. For aerial applications, apply this product in 3 to 10 gallons of water per acre.

**PRECAUTIONS, RESTRICTIONS:** Do not apply more than 1 quart of this product per acre. Allow 7 days between application and harvest or grazing. Preharvest application is not specified for barley or wheat grown for seed, as a reduction in germination or vigor may occur.

#### **Post Harvest**

**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.

**PRECAUTIONS, RESTRICTIONS:** For any crop not listed on this label, applications must be made at least 30 days prior to planting the next crop. Allow a minimum of 7 days between treatment and harvest or feeding of treated vegetation.

## **Corn**

**TYPES OF CORN:** Field corn, Seed corn, Silage corn, Sweet corn and Popcorn.

**TYPES OF APPLICATIONS:** Those listed in "ANNUAL AND PERENNIAL CROPS" section of this label plus the following: Spot Treatment, Preharvest.

Use directions for corn containing the Roundup Ready gene are in the "ROUNDUP READY CROPS" section of this label.

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

**USE INSTRUCTIONS:** This product may be applied alone or in a tank-mixture before, during or after planting corn. Applications must be made prior to crop emergence.

**TANK MIXTURES:** This product may be tank-mixed with the following products to provide residual weed control, a broader weed control spectrum or an alternate mode of action. Ensure that the specific product is registered for application prior to planting corn. Apply these tank mixtures in 10 to 20 gallons of water or 10 to 60 gallons of nitrogen solution per acre.

2,4-D	Distinct™	Keystone LA
Aim®	Dual Magnum™	Lariat®
Alachlor	Dual II Magnum	Leadoff™
Atrazine	Epic™	Linex™/Lorox™
Axiom™	Frontier™/Outlook™	Marksman
Balance™ / Balance PRO	Fultime™	Micro-Tech®
Banvel™/Clarity™	Guardsman™	Provi™
Bicep Magnum	/Guardsman MAX	Python™
Bicep II Magnum	Harness®	Resource®
Bullet®	Harness Xtra	Simazine
Degree®	Harness Xtra 5.61	Surpass
Degree Xtra®	Hornet	Topnotch™

For tough-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 per acre when weeds are over 6 inches tall. When using nitrogen solutions as the carrier, use rate may need to be increased for acceptable weed control.

**PRECAUTIONS, RESTRICTIONS:** Applications of 2,4-D or dicamba must be made at least 7 days prior to planting corn. For more information see the "TANK MIXTURES" and "TANK MIXING PROCEDURES" sections of this label.

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. The area covered by this recommendation includes Illinois and Indiana south of Route 50, and the following states: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, New Jersey, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia and West Virginia.

#### **Hooded Sprayers**

**USE INSTRUCTIONS:** This product may be applied with hooded sprayers for weed control between rows of corn. Only hooded sprayers that completely enclose the spray pattern may be used. See additional instructions for the use of hooded sprayers in the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label.

**PRECAUTIONS, RESTRICTIONS:** Corn 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. 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:** This product may be applied as a spot treatment prior to silking of corn.

**PRECAUTIONS, RESTRICTIONS:** Do not treat more than 10 percent of the total field area to be harvested. Crop sprayed in the treated area will be killed. Take care not to spray or to allow spray to drift outside target area to avoid unwanted crop destruction.

#### **Preharvest**

**USE INSTRUCTIONS:** 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). For ground applications, apply up to 3 quarts of this product per acre. For aerial applications, apply up to 2 quarts of this product per acre.

**PRECAUTIONS, RESTRICTIONS:** Allow a minimum of 7 days between application and harvest. Preharvest application is not allowed for corn grown for seed, as a reduction in germination or vigor may occur.

#### **Post-Harvest**

**USE INSTRUCTIONS:** 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.

**PRECAUTIONS, RESTRICTIONS:** Allow a minimum of 7 days between treatment and harvest or feeding of treated vegetation.

## Cotton

**TYPES OF APPLICATIONS:** Those listed in "ANNUAL AND PERENNIAL CROPS" section of this label plus the following: Selective equipment, Spot treatment, Preharvest.

Use directions for cotton containing the Roundup Ready gene are in the "ROUNDUP READY CROPS" section of this label.

### Preplant, At-Planting, Preemergence

**USE INSTRUCTIONS:** This product may be applied before, during or after planting cotton. Applications must be made prior to crop emergence.

**TANK MIXTURES:** This product may be tank-mixed with the following products provided that the specific product being used is registered for application prior to planting cotton. Apply these tank mixtures in 10 to 20 gallons of water per acre.

Caparol®	Direx	Prowl
Clarity™	Dual Magnum™	Prowl H2O
Command	Dual II Magnum	Staple®
Cotoran®	Karmex	Stalwart
Cotton PRO®	Meturon®	Zorial®

**PRECAUTIONS, RESTRICTIONS:** For more information see the "TANK MIXTURES" and "TANK MIXING PROCEDURES" sections of this label.

### Selective Equipment

**USE INSTRUCTIONS:** This product may be applied through hooded sprayers, shielded sprayers or wiper applicators in cotton. Additional instructions on the use of selective equipment are found in the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label.

**PRECAUTIONS, RESTRICTIONS:** Allow at least 7 days between application and harvest.

### Spot Treatment

**USE INSTRUCTIONS:** This product may be applied as a spot treatment in cotton prior to boll opening.

**PRECAUTIONS, RESTRICTIONS:** Do not treat more than 10 percent of the total field area to be harvested. Crop sprayed in the treated area will be killed. Take care not to spray or to allow spray to drift outside target area to avoid unwanted crop destruction.

### Preharvest

**USE INSTRUCTIONS:** This product provides weed control and cotton regrowth inhibition when applied prior to harvest of cotton. For weed control, apply at rates given in the "ANNUAL WEEDS", and "PERENNIAL WEEDS RATE SECTIONS" of this label. For cotton regrowth inhibition, apply 1 pint to 2 quarts of this product per acre.

Up to 2 quarts of this product may be applied after sufficient bolls have developed to produce the desired yield of cotton. Applications made prior to this time could affect maximum yield potential.

**TANK MIXTURES:** This product may be tank mixed with DEFT™ 6, Folex™, Ginstar, or Prep™ to provide additional enhancement of cotton leaf drop.

**PRECAUTIONS, RESTRICTIONS:** Allow a minimum of 7 days between application and harvest of cotton. Preharvest application is not allowed for cotton grown for seed, as a reduction in germination or vigor may occur. THE USE OF ADDITIVES FOR PREHARVEST APPLICATION OF THIS PRODUCT TO COTTON IS PROHIBITED. For more information, see the "TANK MIXTURES" and "TANK MIXING PROCEDURES" sections of this label.

## Fallow Systems

**LABELLED CROPS:** This product may be applied during the fallow period prior to planting or emergence of any crop listed on this label; for non-listed crops, applications must be made at least 30 days prior to planting.

**TYPES OF APPLICATIONS:** Chemical Fallow, Preplant Fallow Beds, Aid-to-Tillage.

### Chemical Fallow

**USE INSTRUCTIONS:** 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. Tank mixtures of this product with 2,4-D and dicamba may be used for a broader, weed control spectrum. Applications up to 2 quarts per acre may be made by aerial application onto fallow sites where there is sufficient buffer to prevent injury due to drift onto adjacent crops.

**PRECAUTIONS, RESTRICTIONS:** Do not apply dicamba tank mixtures by air in California. Refer to the specific product labels for crop rotation restrictions and cautionary statements of all products used in tank mixtures. Some crop injury may occur if dicamba is applied within 45 days of planting.

### Preplant Fallow Beds

**USE INSTRUCTIONS:** This product will control weeds listed in the "ANNUAL WEEDS", "PERENNIAL WEEDS" and "WOODY BRUSH AND TREES RATE SECTIONS" of this label prior to planting.

**TANK MIXTURES:** Use 12 fluid ounces of this product, plus 2 to 3 fluid ounces of Goal™ 2XL, per acre to control the following weeds up to the maximum height, diameter or length indicated: 3" -- common cheeseweed, chickweed, groundsel; 6" -- London rocket, shepherdspurse.

Use 16 fluid ounces of this product, plus 2 to 3 fluid ounces of Goal 2XL, per acre to control the following weeds up to the maximum height, diameter or length indicated: 6" -- common cheeseweed, groundsel, marestail (*Coryza canadensis*), 12" -- chickweed, London rocket, shepherdspurse

### 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 12 fluid ounces of this product in 3 to 10 gallons of water per acre 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, RESTRICTIONS:** Tank mixtures with residual herbicides may result in reduced product performance.

## Grain Sorghum (Milo)

**TYPES OF APPLICATIONS:** Those listed in "ANNUAL AND PERENNIAL CROPS" section of this label plus the following: Spot Treatment, Over-the-Top Wiper Application, Preharvest.

### Preplant, At-Planting, Preemergence

**USE INSTRUCTIONS:** This product may be applied alone or in tank-mixture before, during or after planting grain sorghum. Applications must be made prior to crop emergence.

**TANK MIXTURES:** Apply these tank mixtures in 10 to 20 gallons of water or 10 to 60 gallons of nitrogen solution per acre, provided that the specific product being used is labeled for application prior to planting grain sorghum.

Atrazine IntRRo	Bicep II Magnum Lariat	Bullet	Dual II Magnum Micro-Tech
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For tough-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 a tank mixture of this product at 2 pints per acre plus the products listed above. For more information see the "TANK MIXTURES" and "TANK MIXING PROCEDURES" sections of this label.

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 per acre 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, Over-the-Top Wiper Application**

**USE INSTRUCTIONS:** This product may be applied as a spot treatment in grain sorghum before heading. This product may be applied with wiper applicators to control or suppress tall weeds. For additional instructions, see "Wiper Applicators" in the "SELECTIVE EQUIPMENT" section of this label.

**PRECAUTIONS, RESTRICTIONS:** For spot treatment, do not treat more than 10 percent of the total field area to be harvested. Crop sprayed in treated area will be killed. Take care not to spray or to allow spray to drift outside target area to avoid unwanted crop destruction. Allow at least 40 days between wiper 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 applied with 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 "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label.

**PRECAUTIONS, RESTRICTIONS:** Milo must be at least 12 inches tall, measured without extending leaves. Treat before milo sends tillers between the drill rows. If tillers are sprayed, the main plant may be damaged or destroyed. Contact of this product in any manner to any vegetation to which treatment is not intended may cause damage, which shall be the sole responsibility of the applicator. Do not graze or feed milo forage or fodder following hooded sprayer applications. 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.

#### **Preharvest**

**USE INSTRUCTIONS:** This product may be applied for weed control prior to harvest after sorghum grain has reached 30 percent grain moisture or less.

**PRECAUTIONS, RESTRICTIONS:** Do not apply more than 2 quarts of this product per acre. As with other herbicides that cause sudden plant death, avoid preharvest applications of this product to milo infested with charcoal rot as lodging can occur. Allow a minimum of 7 days between application and harvest of grain sorghum. Preharvest application is not specified for sorghum grown for seed, as a reduction in germination or vigor may occur. The use of this product for preharvest grain sorghum (milo) is not registered in California.

#### **Post-Harvest**

**USE INSTRUCTIONS:** This product may be applied after harvest of grain sorghum. Higher rates may be required to control large weeds that were growing in the crop at the time of harvest. Tank mixtures with 2,4-D or dicamba may be used.

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.

**PRECAUTIONS, RESTRICTIONS:** Allow a minimum of 7 days between treatment

and harvest or feeding of treated vegetation.

## **Herbs and Spices**

**LABELED CROPS:** Allspice, Angelica, Star anise, Annatto (seed), Balm, Basil, Borage, Burnet, Camomile, Caper buds, Caraway, Black caraway, Cardamom, Cassia bark, Cassia buds, Catnip, Celery seed, Chervil (dried), Chive, Chinese chive, Cinnamon, Clary, Clove buds, Coriander leaf (cilantro or Chinese parsley), Coriander seed (cilantro), Costmary, Culantro (leaf), Culantro (seed), Cumin, Curry (leaf), Dill (dillweed), Dill (seed), Epazote, Fennel seed (common and Florence), Fenugreek, White ginger flower, Grains of paradise, Horehound, Hyssop, Juniper berry, Lavender, Lemongrass, Lovage (leaf and seed), Mace, Marigold, Marjoram (including oregano), Mexican oregano, Mioga flower, Mustard (seed), Nasturtium, Nutmeg, Parsley (dried), Pennyroyal, Pepper (black and white), Pepper leaves, Peppermint, Perilla, Poppy (seed), Rosemary, Rue, Saffron, Sage, Savory (summer and winter), Spearmint, Stevia leaves, Sweet bay, Tansy, Tarragon, Thyme, Vanilla, Wintergreen, Woodruff, Wormwood.

**TYPES OF APPLICATIONS:** Those listed in "ANNUAL AND PERENNIAL CROPS" section of this label plus the following: Over-the-Top Wiper Application (Peppermint and Spearmint Only), Spot Treatment (Peppermint and Spearmint Only).

**PRECAUTIONS, RESTRICTIONS:** This product could cause crop injury. When applying this product prior to transplanting or direct-seeding crops into plastic mulch, care must be taken to remove product residues from the plastic prior to planting. Residual product can be removed by a single 0.5-inch application of water, either by natural rainfall or by irrigation. Care should be taken to ensure that the washwater flushes off the plastic mulch and does not enter transplant holes. Applications made at emergence will result in injury or death to emerged seedlings.

#### **Over-the-Top Wiper Application, Spot Treatment (Peppermint and Spearmint only)**

**USE INSTRUCTIONS:** This product may be applied as a spot treatment or over the top of peppermint or spearmint with wiper applicators in spearmint and peppermint. Apply spot treatments on a spray-to-wet basis with hand-held equipment, such as backpack sprayers, pump-up pressure sprayers, hand-guns, hand-wands or any other hand-held or motorized spray equipment used to direct the spray solution to a limited area.

**PRECAUTIONS, RESTRICTIONS:** Allow at least 7 days between application and harvest. Further applications may be made in the same area at 30-day intervals. In spot treatment applications, no more than 10 percent of the total field area to be harvested should be treated at one time. Crop sprayed in treated area will be killed. Take care not to spray or allow spray to drift outside the target area to avoid unwanted crop destruction. For wiper applications, contact of the herbicide solution with the crop may result in discoloration, stunting, or destruction.

## **Oil Seed Crops**

**LABELED CROPS:** Borage, Buffalo gourd (seed), Canola, Crambe, Flax, Jojoba, Lesquerella, Meadowfoam, Mustard (seed), Rape, Safflower, Sesame, Sunflower.

Use directions for canola containing the Roundup Ready gene, are in the "ROUNDUP READY CROPS" section of this label.

**TYPES OF APPLICATIONS:** Those listed in "ANNUAL AND PERENNIAL CROPS" section of this label.

**USE INSTRUCTIONS:** This product may be applied before, during or after planting oil seed crops listed in this section. Broadcast applications must be made prior to crop emergence. Wiper applicators or hooded sprayers may be used between the rows once the crop is established. See additional instructions of

the use of selective equipment in the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label.

**TANK MIXTURES:** For sunflowers, a tank mixture with Prowl may be applied before, during or after planting into conventionally tilled soil, a cover crop, established sod or previous crop residue.

**PRECAUTIONS, RESTRICTIONS:** For use with canola, do not apply more than 2 quarts of this product per acre. For use with sunflowers, do not apply more than 1 quart of this product per acre as a single preplant or preemergence application per year. Do not feed or graze sunflower forage following application of this product.

## **Soybeans**

**TYPES OF APPLICATIONS:** Those listed in "ANNUAL AND PERENNIAL CROPS" section of this label plus the following: Spot Treatment, Preharvest, Selective Equipment.

Use directions for soybeans containing the Roundup Ready gene are in the "ROUNDUP READY CROPS" section of this label.

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

**USE INSTRUCTIONS:** This product may be applied alone or in a tank-mixture before, during or after planting soybeans. Applications must be made prior to crop emergence.

**TANK MIXTURES:** This product may be tank-mixed with the following products to provide residual weed control, a broader spectrum, or an alternate mode of action. Ensure that the specific product being used in the tank mixture is registered for application prior to planting soybean, and follow all label directions of all products in the tank mixture. Apply these tank mixtures in 10 to 20 gallons of water per acre.

2,4-D	Dual Magnum	Micro-Tech
Aim™	Dual II Magnum	Prowl
Assure II™	Firstrate™	Pursuit™
Authority™	Flexstar™	Pursuit Plus
Axiom	Frontier™/Outlook™	Python
Blanket	Fusion™	Reflex™
Boundary™	Gauntlet™	Resource™
Canopy™	Gangster	Scepter™
Canopy EX™	IntrRo	Sencor™/Lexone™
Classic	Linex™	Squadron™
Command™	Lorox/Linuron	Steel™
Command Xtra™	Lorox Plus™	Valor™
Domain™		

For tough-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 per acre when weeds are over 6 inches tall. For more information, see the "TANK MIXTURES" and "TANK MIXING PROCEDURES" sections of this label.

### **Spot Treatment**

**USE INSTRUCTIONS:** This product may be applied as a spot treatment prior to initial pod set in soybeans.

**PRECAUTIONS, RESTRICTIONS:** Do not treat more than 10 percent of the total field area to be harvested. Crop sprayed in treated area will be killed. Take care not to spray or allow spray to drift outside the target area to avoid unwanted crop destruction.

### **Preharvest**

**USE INSTRUCTIONS:** This product may be applied for weed control prior to harvest of soybeans after pods have set and lost all green color. Apply at rates given in the "ANNUAL WEEDS RATE SECTION" and "PERENNIAL WEEDS RATE SECTION". Care should be taken to avoid excessive seed shatter loss due to ground application equipment.

**PRECAUTIONS, RESTRICTIONS:** Do not apply more than 5 quarts of this product per acre for preharvest applications. Do not apply more than 2 quarts of this product per acre by air. Allow a minimum of 7 days between application and harvest of soybeans. Do not graze or harvest treated hay or fodder for livestock feed within 25 days of last preharvest application. (If the application rate is 1 quart per acre or lower, the grazing restriction is reduced to 14 days after last preharvest application.) Preharvest application is not specified for soybeans grown for seed, as a reduction in germination or vigor may occur.

### **Selective Equipment**

**USE INSTRUCTIONS:** This product may be applied through shielded or hooded sprayers, wiper applicators or sponge bars in soybeans. Additional instructions on the use of selective equipment are found in the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label.

**PRECAUTIONS, RESTRICTIONS:** Allow at least 7 days between application and harvest.

## **Sugarcane**

**TYPES OF APPLICATIONS:** Those listed in "ANNUAL AND PERENNIAL CROPS" section of this label plus Spot Treatment, Sugarcane Ripening.

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

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

**PRECAUTIONS, 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, apply a 1-percent solution of this product in water using a spray-to-wet technique. Volunteer or diseased sugarcane should have at least 7 new leaves.

**PRECAUTIONS, RESTRICTIONS:** Avoid spray contact with healthy sugarcane plants since severe damage or destruction may result. 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. Applications up to 3 quarts per acre may be made by aerial application in fallow sites where there is sufficient buffer to prevent drift onto adjacent crops. Tank mixtures with 2,4-D and dicamba may be used.

### **Hooded Sprayers**

**USE INSTRUCTIONS:** This product may be applied using hooded sprayers for weed control between the rows of sugarcane. See the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label for additional use instructions.

**PRECAUTIONS, RESTRICTIONS:** Crop injury may occur when the foliage of treated weeds contact the crop. Do not apply this product when crop leaves are

growing in direct contact with weeds to be treated. Droplets, mist, foam or splatter of the herbicide solution settling on the crop may result in discoloration, stunting or destruction. Such damage shall be the sole responsibility of the applicator.

### **Sugarcane Ripening**

**USE INSTRUCTIONS:** This product may be applied to foliage as a plant growth regulator to hasten ripening and increase the level of sucrose in sugarcane. It is effective in both low and high-tonnage sugarcane.

When applied as directed under the conditions described, this product will hasten ripening and extend the period of high sucrose level in sugarcane.

As a result of leaf desiccation, improved trash burn can be expected.

Most of the sucrose increase is concentrated in the top nodes of the treated sugarcane stalk. In order to maximize sugar where topping is practiced during harvest, top at the base of the fourth leaf.

### **APPLICATION RATES:**

Use the following application rates and timing instructions according to the State in which the sugarcane is grown.

**NOTE:** Use the higher rate within the specified range when treating sugarcane under adverse ripening conditions or when less responsive varieties are to be treated.

**FLORIDA**—Apply 7 to 16 fluid ounces of this product per acre 3 to 5 weeks before harvest of RATOON CANE ONLY.

**HAWAII**—Apply 12 to 28 fluid ounces of this product per acre 4 to 10 weeks before harvest.

**LOUISIANA**—Apply 5 to 16 fluid ounces of this product per acre 3 to 7 weeks before harvest of RATOON CANE ONLY.

**PUERTO RICO**—Apply 7 fluid ounces of this product per acre 3 to 5 weeks before harvest of RATOON CANE ONLY.

**TEXAS**—Apply 7 to 16 fluid ounces of this product per acre 3 to 5 weeks before harvest of RATOON CANE ONLY.

**PRECAUTIONS, RESTRICTIONS:** Prior to application, consult your state sugarcane authority regarding the degree of sucrose response anticipated from the variety of sugarcane to be treated.

Application of this product may initiate development of shooting eyes. This product may not increase the sucrose content of sugarcane under conditions of good natural ripening. Within 2 to 3 weeks after application, this product may produce a slight yellowing to pronounced browning and drying of leaves, and a shortening of upper internodes. Spindle death may occur.

Rainfall within 6 hours after application may reduce effectiveness.

Application is not specified for sugarcane grown for seed, as a reduction in germination or vigor may occur.

Do not feed or graze treated sugarcane forage following application. Do not plant subsequent crops in treated fields other than the following for 30 days after application: alfalfa or other forage legumes, beans (all types), corn (all types), cotton, melons (all types), pasture grasses, peanuts, potatoes (Irish or sweet), sorghum (milo), soybeans, squash (all types) or wheat.

Do not apply for enhanced ripening to any crops other than sugarcane.

## **Vegetable Crops**

**NOTE:** THIS "VEGETABLE CROPS" SECTION GIVES DIRECTIONS THAT APPLY TO ALL VEGETABLE CROPS LISTED ALPHABETICALLY IN THE SECTIONS THAT FOLLOW. SEE THE INDIVIDUAL CROP CATEGORIES FOR SPECIFIC INSTRUCTIONS, PREHARVEST INTERVALS, PRECAUTIONS AND RESTRICTIONS.

**TYPES OF APPLICATIONS:** Chemical Fallow, Preplant Fallow Beds, Hooded, At-Planting, Preemergence, Prior to Transplanting Vegetables, Hoop Sprayers in Row-Middles, Shielded Sprayers in Row-Middles, Wiper Application in Row-Middles, Post-Harvest, Selective Equipment Applications (Nonbearing Ginseng), Over-the-Top Wiper Application (Rutabagas only), Spot Treatment or Preharvest (Dry Beans, Peas, Lentils, and Chickpeas only).

**PRECAUTIONS, RESTRICTIONS:** This product could cause crop injury. When applying this product prior to transplanting or direct-seeding crops into plastic mulch, care must be taken to remove product residues from the plastic prior to planting. Residual product can be removed by a single 0.5-inch application of water, either by natural rainfall or by irrigation. Care should be taken to ensure that the washwater flushes off the plastic mulch and does not enter transplant holes. Applications made at emergence will result in injury or death to emerged seedlings.

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 crop injury or destruction may result. When making preemergence and at planting applications, applications must be made before crop emergence to avoid severe crop injury. Apply before seed germination in coarse sandy soils to further minimize the risk of crop injury. In crops with vines, hooded sprayer, shielded sprayer and wiper applications to row middles should be made prior to vine development otherwise severe injury or destruction may result. Unless otherwise specified in this product's labeling, treatments with selective equipment including wipers and hooded sprayers must be made at least 14 days prior to harvest. Post-Harvest 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.

### **Brassica Vegetables**

**LABELED CROPS:** Broccoli, Chinese broccoli (gai lan), Broccoli raab (rapini), Brussels sprouts, Cabbage, Chinese cabbage (bok choy), Chinese cabbage (napa), Chinese mustard cabbage (gai choy), Cauliflower, Cavalo broccolo, Col-lards, Kale, Kohlrabi, Mizuna, Mustard greens, Mustard spinach, Rape greens.

### **Bulb Vegetables**

**LABELED CROPS:** Garlic, Great-headed garlic, Leek, Onion (dry bulb and green), Welsh onion, Shallot.

### **Cucurbit Vegetables and Fruits**

**LABELED CROPS:** Chayote (fruit), Chinese waxgourd (Chinese preserving melon), Citron melon, Cucumber, Gherkin, Edible gourd (includes hyotan, cucuzza, hechima, Chinese okra), Melons (all), Momordica sp. (includes balsam apple, balsam pear, bittermelon, Chinese cucumber), Muskmelon (includes cantaloupe, casaba, crenshaw melon, golden pershaw melon, honeydew melon, honey ball melon, mango melon, Persian melon, pineapple melon, Santa Claus melon, snake melon), Pumpkin, Summer squash (includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini), Winter squash (includes butternut squash, calabaza, hubbard squash, acorn squash, spaghetti squash), Watermelon.

**PRECAUTIONS, RESTRICTIONS:** For Cantaloupe, Casaba melon, Crenshaw melon, Cucumber, Gherkin, Gourds, Honeydew melon, Honey ball melon, Mango melon, Melons (all), Muskmelon, Persian melon, Pumpkin, Squash (summer, winter), and Watermelon, allow at least 3 days between application and planting.

#### **Leafy Vegetables**

**LABELED CROPS:** Amaranth (Chinese spinach), Arugula (rocket), Beet greens, Cardoon, Celery, Chinese celery, Celtuce, Chaya, Chervil, Edible-leaved chrysanthemum, Garland chrysanthemum, Corn salad, Cress (garden and upland), Dandelion, Dock (sorrel), Endive (escarole), Florence fennel, Gow kee, Lettuce (head and leaf), Orach, Parsley, Purslane (garden and winter), Radicchio (red chicory), Rhubarb, Spinach, New Zealand spinach, Vine spinach, Swiss chard, Watercress (upland), Water spinach.

**PRECAUTIONS, RESTRICTIONS:** For Watercress, avoid applications within 3 days prior to seeding and during the period between seeding and emergence to minimize the risk of crop injury.

#### **Fruiting Vegetables**

**LABELED CROPS:** Eggplant, Groundcherry (*Physalis* spp), Pepino, Pepper (includes bell pepper, chili pepper, cooking pepper, pimento, sweet pepper), Tomatillo, Tomato.

**PRECAUTIONS, RESTRICTIONS:** For Eggplant, Ground cherry, Pepper (all), and Tomatillo, allow at least 3 days between application and planting. For Tomato and tomatillos grown on sandy soil, do not make hooded, shielded sprayer or wiper applications in row middles because of potential for crop injury.

#### **Legume Vegetables (Succulent or Dried)**

**LABELED CROPS:** Bean (Lupines: includes grain lupin, sweet lupin, white lupin, and white sweet lupin), Bean (Phaseolus: includes field bean, kidney bean, lima bean, navy bean, pinto bean, runner bean, snap bean, tepary bean, wax bean), Bean (*Vigna*): includes adzuki bean, asparagus bean, blackeyed pea, catjang, Chinese longbean, cowpea, crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean, yardlong bean), Broad bean (fava), Chickpea (garbanzo), Guar, Jackbean, Lablab bean, Lentil, Pea (*Pisum*): includes dwarf pea, edible-podded pea, English pea, field pea, garden pea, green pea, snowpea, sugar snap pea), Pigeon pea, Soybean (immature seed), Sward bean.

#### **Spot Treatment, or Preharvest (Dry Beans, Peas, Lentils and Chickpeas only)**

**USE INSTRUCTIONS:** This product may be applied as an over-the-top broadcast spray or as a spot treatment to control labeled weeds in dry beans, peas, lentils or chick peas. For spot treatment, to control troublesome weeds such as Canada thistle, quackgrass, mayweed (dog fennel), and milkweed, apply in 10 to 20 gallons of water per acre through ground broadcast spray equipment or use a 2 percent solution in a hand-held sprayer. For preharvest treatments, apply in 30 to 200 gallons of water per acre at the hard dough stage of the legume seed (30 percent in moisture or less).

**PRECAUTIONS, RESTRICTIONS:** Follow the limitations listed in the table below. Only one application per year may be made; do not combine a preharvest spray with a spot treatment on the same crop area. Employ at least a 30-day plant-back interval between treatment and replanting for any crop not specified for treatment in this label. Do not feed treated vines and hay from these crops to livestock. Do not treat cowpeas or field (feed) peas, since these crop are considered to be grown as livestock feed. Preharvest application is not specified for dry legumes grown for seed, as a reduction in germination or vigor may occur.

<b>Crop</b>	<b>Maximum Rate (fluid ounces per Acre)</b>	<b>Minimum Pre-Harvest Interval (days)</b>	<b>Allowed in</b>
Dry Beans	32	7	All States
Dry Peas, Lentils, and Chickpeas	26	14	Idaho, Minnesota, Montana, Nebraska, North Dakota, Oregon, South Dakota, and Washington

#### **Root and Tuber Vegetables**

**LABELED CROPS:** Arracacha, Arrowroot, Chinese artichoke, Jerusalem artichoke, Beet (garden), Burdock, Canna, Carrot, Cassava (bitter and sweet), Celery, Chayote (root), Chervil (turnip-rooted), Chicory, Chufa, Dasheen (taro), Galangal, Ginger, Ginseng, Horseradish, Leren, Kava (turnip-rooted), Parsley (turnip rooted), Parsnip, Potato, Radish, Oriental radish, Rutabaga, Salsify, Black salsify, Spanish salsify, Skirret, Sweet potato, Tanier, Turmeric, Turnip, Wasabi, Yacon, Yam bean, True yam.

#### **Selective Equipment Applications (Non-Bearing Ginseng only)**

**USE INSTRUCTIONS:** This product may be applied for weed control in established non-bearing ginseng. Applications may be made with boom equipment, CDA, shielded sprayers, hand-held and backpack wands, lances, and orchard rows or with wiper application equipment. See additional instructions under "Selective Equipment" in the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label.

**PRECAUTIONS, RESTRICTIONS:** Conduct applications so that there is no contact of this product with the ginseng plant. Droplets, mist, foam or splatter of the herbicide solution settling onto desirable vegetation may result in discoloration, stunting or destruction. Applications must be made at least one year prior to harvest.

#### **Over-the-Top Wiper Application (Rutabagas only)**

**USE INSTRUCTIONS:** Wiper applicators maybe used over the top of rutabagas for the control of taller weeds. See additional instructions under "Selective Equipment" in the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label. **PRECAUTIONS, RESTRICTIONS:** Allow at least 14 days between application and harvest of rutabagas. Droplets, mist, foam or splatter of the herbicide solution settling onto desirable vegetation may result in discoloration, stunting or destruction.

#### **Miscellaneous Crops**

**LABELED CROPS:** Aloe vera, Asparagus, Bamboo shoots, Globe artichoke, Okra, Peanut (ground nut), Pineapple, Strawberry, Sugar beet.

**TYPES OF APPLICATIONS:** Those listed in "ANNUAL AND PERENNIAL CROPS" section of this label plus the following: Weed Control, Site Preparation, Spot Treatment (Asparagus).

Use directions for sugar beets containing the Roundup Ready gene are in the "ROUNDUP READY CROPS" section of this label.

**PRECAUTIONS, RESTRICTIONS:** Avoid contact of this product with foliage, green shoots or stems, bark, exposed roots (including those emerging from plastic mulch), or fruit of crops because severe crop injury or destruction may result. When making preemergence and at planting applications, applications must be made before crop emergence to avoid severe crop injury. Apply before seed germination in coarse sandy soils to further minimize the risk of crop injury. In crops with vines, hooded sprayer, shielded sprayer and wiper applications to row middles should be made prior to vine development otherwise severe

injury or destruction may result. Unless otherwise specified in this product's labeling, treatments with selective equipment including wipers and hooded sprayers must be made at least 14 days prior to harvest. Post-Harvest or fallow applications must be made at least 30 days prior to planting any crop not listed on this label. See additional information in the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label.

#### **Weed Control, Site Preparation**

**USE INSTRUCTIONS:** This product may be applied for weed control or for site preparation prior to planting or transplanting crops listed in this section.

**PRECAUTIONS, RESTRICTIONS:** This product could cause crop injury when applied prior to transplanting or direct-seeding crops into plastic mulch. Care must be taken to remove residues of this product from the plastic prior to planting. Residual product can be removed by a single 0.5-inch application of water, either by natural rainfall or by irrigation. Care should be taken to ensure that the wash water flushes off the plastic mulch and does not enter transplant holes. Allow at least 21 days between residue removal and transplanting. Applications made at emergence will result in injury or death to emerged seedlings. Do not apply within a week before the first asparagus spears emerge. Do not feed or graze treated pineapple forage following application.

#### **Spot Treatment (Asparagus)**

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

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

#### **Post-Harvest (Asparagus)**

**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. Delayed treatments should be applied as a directed or shielded spray in order to avoid contact of the spray with ferns, stems or spears. See additional instructions under "Selective Equipment" in the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label.

**PRECAUTIONS, RESTRICTIONS:** Direct contact of the spray with asparagus may result in serious crop injury.

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## **TREE, VINE, AND SHRUB CROPS (Alphabetical)**

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**NOTE:** THIS SECTION GIVES DIRECTIONS THAT APPLY TO ALL TREE, VINE, AND SHRUB CROPS LISTED ALPHABETICALLY IN THE SECTIONS THAT FOLLOW. SEE THE INDIVIDUAL CROP CATEGORIES FOR SPECIFIC INSTRUCTIONS, PREHARVEST INTERVALS, PRECAUTIONS AND RESTRICTIONS.

**TYPES OF APPLICATIONS:** Preplant (site preparation) Broadcast Sprays, Weed Control, Middles (between rows of trees, vines or bushes), Strips (within rows of trees, vines or bushes), Selective Equipment (shielded sprayers, wiper treatments), Directed Spray, Spot Treatment, Perennial Grass Suppression, Cut Stump.

This product may be applied with boom equipment, CDA equipment, shielded sprayers, hand-held and backpack wands, lances, orchard guns or with wiper applicator equipment, unless prohibited in the specific crop sections that follow.

#### **USE INSTRUCTIONS:**

This product may be applied in middles (between rows of trees or vines), strips (within rows of trees or vines), and for weed control or perennial grass suppression in established tree fruit and nut groves, orchards, berries, and vineyards. It may also be used for site preparation prior to planting or transplanting these crops. Apply 1 pint to 5 quarts per acre according to the "ANNUAL WEEDS"

and "PERENNIAL WEEDS RATE SECTIONS" of this label. Use the higher rates in the specified 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. See the "GENERAL INFORMATION" section of this label for more information on Maximum Annual Use Rates.

#### **PRECAUTIONS, RESTRICTIONS:**

Use extreme care to avoid contact of this 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. Only shielded or directed sprayers may be used in crops with potential for crop contact, and then only where there is sufficient clearance. For applications in strips (within rows of trees), only selective equipment (directed sprays, hooded sprayers, shielded applicators, or wipers) should be used in order to minimize the potential for overspray or drift of this product onto the crop. For berry crops, hooded or shielded sprayers must be fully enclosed including top, sides, front and back. Only wipers or shielded applicators capable of preventing all contact with the crop may be used. See additional instructions and precautions in the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label.

Allow a minimum of 3 days between application and transplanting.

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

**USE INSTRUCTIONS:** This product will control or suppress annual and perennial weeds and ground covers growing between rows of tree and vine crops listed on this label. If weeds are under drought stress, irrigate prior to application. Reduced weed control may result if weeds have been recently mowed at the time of application.

**TANK MIXTURES:** A tank mixture of this product plus Goal 2XL may be applied for annual weed control between rows (middles) of citrus crops, tree fruits, tree nuts and vine crops. This mixture is specified when weeds are stressed or growing in dense populations. Application of 16 to 32 fluid ounces of this product per acre plus 3 to 12 fluid ounces of Goal 2XL per acre will control annual weeds with a maximum height, length or diameter of 6 inches, including crabgrass, common groundsel, junglefire, common lambsquarters, redroot pigweed, London rocket, common ryegrass, shepherdspurse, annual sowthistle, filaree (suppression), horseweed/marestail (Conyza canadensis), stinging nettle and common purslane (suppression). This tank mixture will also control common cheeseweed (malva) or hairy fleabane (Conyza bonariensis) with a maximum height, length or diameter of 3 inches. Read and follow all labels and directions for use of all products being used in the tank mixture.

#### **Strips (In Rows)**

**TANK MIXTURES:** This product may be applied within rows of tree or vine crops in tank mixtures with the following products, provided that the label of the specific product used permits the desired use:

Devrinol™ 50 DF	Simazine 4L
Direx™ 4L	Simazine 80W
Goal 2XL	Sim-Trol™ 4L
Karmex DF	Solicam™ DF
Krovar I	Surflan™ AS
Princep Caliber™ 90	Surflan 75W
Prowl	

Do not apply these tank mixtures in Puerto Rico.

Refer to the individual product labels for information about specific crops, rates, geographic restrictions and precautionary statements. For more information see



the "TANK MIXTURES" and "TANK MIXING PROCEDURES" sections of this label.

### **Perennial Grass Suppression**

This product will suppress perennial grasses such as bahiagrass, Bermudagrass, 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 Bermudagrass, 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 Bermudagrass 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 Bermudagrass, apply 6 to 16 fluid ounces of this product per acre east of the Rocky Mountains and 16 fluid ounces of this product per acre 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 Bermudagrass is mowed prior to application, maintain a minimum of 3 inches in height. Sequential applications may be made when regrowth occurs and Bermudagrass injury and stand reduction can be tolerated. East of the Rocky Mountains, rates of 6 to 10 fluid ounces of this product per acre should be used in shaded conditions or where a lesser degree of suppression is desired.

### **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), Pummelo, Tangelo (Ugli), Tangor.

**Fruit Trees:** Apple, Apricot, Cherry (sweet, sour), Crabapple, Loquat, Mayhaw, Nectarine, Olive, Peach, Pear, Plum/Prune (all), Quince.

**Nut Trees:** Almond, Beechnut, Brazil nut, Butternut, Cashew, Chestnut, Chinquapin, Filbert (hazelnut), Hickory Nut, Macadamia, Pecan, Pistachio, Walnut (black, English).

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 percent solution of this product to the freshly cut surface immediately after cutting. Delays in application may result in reduced performance. For best results, applications should be made during periods of active growth and full leaf expansion.

**PRECAUTIONS, RESTRICTIONS:** DO NOT MAKE CUT STUMP APPLICATIONS WHEN THE ROOTS OF ADJACENT DESIRABLE TREES MAY BE GRAFTED

THE ROOTS OF THE CUT STUMP. INJURY RESULTING FROM ROOT GRAFTING MAY OCCUR IN ADJACENT TREES. 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.

### **Berry Crops**

**LABELLED CROPS:** Blackberry (including bingleberry, black satin berry, boysenberry, Cherokee blackberry, chesterberry, Cheyenne blackberry, coryberry, darrowberry, dewberry, Dirksen thornless berry, Himalayaberry, hullberry, juneberry, lavacaberry, lowberry, lucetiaberry, marionberry, nectarberry, olaliberry, Oregon evergreen berry, phenomenalberry, rangeberry, ravenberry, rossberry, Shawnee blackberry, and youngberry), Blueberry, Cranberry, Currant, Elderberry, Gooseberry, Huckleberry, Loganberry, Salal, Raspberry (black, red).

**TYPES OF APPLICATIONS:** Those listed in "TREES, VINE AND SHRUB CROPS" section of this label, plus Spot Treatment in Cranberry Production and Post-Harvest Treatment in Cranberry Production.

**PRECAUTIONS, RESTRICTIONS:** To avoid damage, herbicide spray must not be allowed to contact desirable vegetation, including green shoots, canes, or foliage. Allow a minimum of 30 days between last application and harvest of cranberries. Allow a minimum of 14 days between last application and harvest of other berry crops.

### **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 sprayers 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. With hand-held sprayers, use 1- to 2-percent solution of this product. Spray adequately to wet the vegetation only; do not spray to the point of run-off.

**PRECAUTIONS, RESTRICTIONS:** To achieve maximum weed control in treatments of dry ditches after water draw down, allow 2 or more days after treatment before reintroduction of water. Apply this product within 1 day after draw down to ensure application to actively growing weeds. Allow a minimum of 30 days between last application and harvest of cranberries. Do not make applications by air. Do not apply directly to water. Use nozzles that emit medium- to large-sized droplets in order to minimize spray drift and avoid crop injury.

### **Post-Harvest Treatments in Cranberry Production**

**USE INSTRUCTIONS:** Application of this product may be made after the harvest of cranberries to control weeds growing in the field. Apply this product to vines that appear dormant (after they have turned red). Hand-held sprayers, wipers, or other appropriate application equipment listed in the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label may be used. If using hand-held sprayers, use a 0.5- to 1-percent solution of this product. Spray adequately to wet the vegetation only; do not spray to the point of run-off. If using hand-held boom sprayers, apply 2 to 4 quarts of this product per acre.

**PRECAUTIONS, RESTRICTIONS:** Make applications only after cranberries have been harvested. Do not treat more than 10 percent of the total bog. Allow a minimum of 6 months after last application and next harvest of cranberries. 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.

## **Citrus**

LABELLED CROPS: Calamondin, Chironja, Citron, Citrus Hybrids, Grapefruit, Kumquat, Lemon, Lime, Mandarin (tangerine), Orange (all), Pummelo, Satsuma Mandarin, Tangelo (ugh), Tangor.

TYPES OF APPLICATIONS: Those listed in "TREES, VINE AND SHRUB CROPS" section of this label.

PRECAUTIONS, RESTRICTIONS: Allow a minimum of 1 day between last application and harvest in citrus crops. For citron groves, apply as directed sprays only. USE INSTRUCTIONS: The following use instructions pertain to applications in 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 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 per acre when plants are greater than 8 inches tall. If goatweed is greater than 8 inches tall, use of this product in a tank mixture with Krovar™ or Karmex™ may improve weed control. Refer to the individual product labels for treatment information on specific crops, rates, geographic restrictions and precautionary statements.

### **Perennial Weeds**

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

WEED SPECIES	GLYPHOSATE PLUS RATE PER ACRE				
	1 QT	2 QT	3 QT	5 QT	
Bermudagrass	B	—	PC	C	
Guineagrass	—	—	—	—	
Texas and Florida Ridge	B	C	—	C	
Florida Flatwoods	—	B	C	C	
Paragrass	—	B	C	C	
Torpedograss	S	—	PC	C	

## **Miscellaneous Tree Food Crops**

LABELLED CROPS: Cactus (fruit and pads), Palm (heart, leaves), Palm (oil).

TYPES OF APPLICATIONS: Those listed in "TREES, VINE AND SHRUB CROPS" section of this label.

## **Non-Food Tree Crops**

LABELLED CROPS: Pine, Poplar, Eucalyptus, Christmas trees, and all other non-food tree crops.

TYPES OF APPLICATIONS: Those listed in "TREES, VINE AND SHRUB CROPS" section of this label.

NOTE: unless otherwise directed, this product is not specified for use as an over-the-top broadcast spray in plantations or other labeled tree crops.

### **Directed Spray, Spot treatment, Wiper Application**

USE INSTRUCTIONS: This product may be used as a post-directed spray and spot treatment around established poplar, eucalyptus, Christmas trees and other non-food tree crops.

PRECAUTIONS, RESTRICTIONS: Avoid contact of spray, drift or mist of this product with foliage or green bark of established Christmas trees and other pine trees. Desirable plants may be protected from the spray solution by using shields or coverings made of cardboard or other impermeable material.

### **Site preparation**

USE INSTRUCTIONS: This product may be used for weed control prior to planting non-food tree crops.

PRECAUTIONS, RESTRICTIONS: Precautions should be taken to protect non-target plants during site preparation applications.

## **Pome Fruit**

LABELLED CROPS: Apple, Crabapple, Loquat, Mayhaw, Pear (including oriental pear), Quince.

TYPES OF APPLICATIONS: Those listed in the "TREES, VINE AND SHRUB CROPS" section of the label.

PRECAUTIONS, RESTRICTIONS: Allow a minimum of 1 day between last application and harvest in pome crops.

## **Stone Fruit**

LABELLED CROPS: Apricot, Cherry (sweet, tart), Nectarine, Olive, Peach, Plum/Prune (all types), Plumcot.

TYPES OF APPLICATIONS: Those listed in the "TREES, VINE AND SHRUB CROPS" section of the label.

For olive groves, apply only as a directed spray.

PRECAUTIONS, RESTRICTIONS: Allow a minimum of 17 days between last application and harvest in stone fruit crops.

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. USE EXTREME CARE TO ENSURE THAT NO PART OF THE PEACH TREE IS CONTACTED WITH OVERSPRAY OR DRIFT OF THIS PRODUCT.

## **Tree Nuts**

LABELLED CROPS: Almond, Beechnut, Betelnut, Brazil nut, Butternut, Cashew, Chestnut, Chinquapin, Coconut, Filbert (hazelnut), Hickory nut, Macadamia, Pecan, Pine nut, Pistachio, Walnut (black, English)

TYPES OF APPLICATIONS: Those listed in "TREES, VINE AND SHRUB CROPS" section of this label.

PRECAUTIONS, RESTRICTIONS: Allow a minimum of 3 days between last application and harvest of tree nuts, except coconut. Allow 14 days between application and harvest in coconut.

## **Tropical and Subtropical Trees and Fruits**

LABELLED CROPS: Ambarella, Atemoya, Avocado, Banana, Barbados cherry (acerola), Biriba, Bimbe, Breadfruit, Cacao (cocoa) bean, Canistel, Carambola (starfruit), Cherimoya, Coffee, Custard apple, Dates, Durian, Feijoa, Figs, Governor's plum, Guava, Ilama, Imbe, Imbu, Jaboticaba, Jackfruit, Longan, Lychee, Mamey apple, Mango, Mangosteen, Marmaladebox (genip), Mountain papaya, Papaya, Pawpaw, Plantain, Persimmon, Pomegranate, Pulasan, Rambutan, Rose apple, Sapodilla, Sapote (black, mamey, white), Spanish lime, Sourpaw, Star apple, Sugar apple, Surinam cherry, Tamarind, Tea, Ti (roots and leaves), Wax jamba.

TYPES OF APPLICATIONS: Those listed in "TREES, VINE AND SHRUB CROPS" section of this label, and as described below as a Bananacide (Bananas Only).

PRECAUTIONS, RESTRICTIONS: Allow a minimum of 1 day between last application and harvest in banana, guava, papaya, and plantain crops. Allow a minimum of 14 days between last application and harvest for any other tropical or subtropical tree fruit listed. Allow a minimum of 28 days between last application and harvest in coffee crops. In coffee and banana, delay applications 3 months after transplanting to allow the new coffee or banana plant to become established.

### **Bananacide (Banana Only)**

**USE INSTRUCTIONS:** This product may be used to destroy banana plants infected with the Banana Bunchy Top Virus, as well as non-infected banana plants in order to establish disease free buffers around plantations. Remove all fruit from the plants within the treatment area prior to treatment. Inject 1/25 fluid ounce (1 mL) of this product's concentrate per 2 to 3 inches of pseudostem diameter. Make the injection at least one foot above the ground, except for very small plants, which should be injected vertically into the top. Any subsequent regrowth must also be destroyed. All plants and mats (or units) within a 4-foot radius around a treated mat should be mechanically destroyed.

For control of the Banana Bunchy Top Virus, it is critical that the grower follow a strict control program involving monitoring for diseased plants, spraying to control the aphid vector, and destruction of all infected mats (or units). An infected plant may not show symptoms of the banana bunchy top virus for up to 125 days, therefore it is critical that the entire mat (or unit) containing the diseased plant be destroyed immediately.

**PRECAUTIONS, RESTRICTIONS:** Do not apply more than 1/2 fluid ounce (15 mL) of this product per mat (or unit). Remove all fruit from plants and mats (or units) prior to treatment. Do not harvest any fruit or plant materials from treated mats (or units) following injection. Do not allow livestock to consume treated plant materials. Following transplant of new banana plants into treated areas, allow plants to become established for 3 months before applying this product for weed control.

### **Vine Crops**

**LABELLED CROPS:** Grapes (raisin, table, wine) Hops, Kiwi, Passion fruit.

**TYPES OF APPLICATIONS:** Those listed in "TREES, VINE AND SHRUB CROPS" section of this label.

Apply this product for weed control only when green shoots, canes or foliage are not in the spray zone.

In the northeast and Great Lakes regions, apply this product to production grape vineyards prior to the end of the bloom stage of grapes in order to avoid crop injury, or apply using shielded sprayers or wiper equipment.

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

## **PASTURE GRASSES, FORAGE LEGUMES AND RANGELANDS**

**USE INSTRUCTIONS:** Refer to the "ANNUAL WEEDS" and "PERENNIAL WEEDS RATE SECTIONS" of this label for rate recommendations for specific weeds. When applied as directed, this product will control these annual and perennial grasses and broadleaf weeds. Specified rates of this product specified on this label for the control of tough weeds, or those specified on separate supplemental labeling for this product, supersede rates specified in the "ANNUAL WEEDS", "PERENNIAL WEEDS" and "WOODY BRUSH AND TREES RATE SECTIONS" of this label.

All labeled treatments may be made by aerial equipment where appropriate, provided that the applicator complies with the precautions and restrictions specified on this product's labeling.

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

**LABELLED CROPS:** Alfalfa, Clover, Kenaf, Kudzu, Lespedeza, Leucaena, Lupin, Sainfoin, Trefoil, Velvet bean, Vetch (all types).

**TYPES OF APPLICATIONS:** Preplant, At-Planting, Preemergence, Preharvest

(except Kenaf and Leucaena), Spot Treatment, Over-the-Top Wiper Application, Renovation, Stand Removal.

Use directions for alfalfa with the Roundup Ready gene are in the "ROUNDUP READY CROPS" section of this label.

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

**USE INSTRUCTIONS:** This product may be applied before, during or after planting crops listed in this section. Applications must be made prior to crop emergence.

**PRECAUTIONS, RESTRICTIONS:** Remove domestic livestock before application. The crop may be fed or grazed as soon as it reaches sufficient maturity.

### **Preharvest (Except Kenaf and Leucaena)**

**USE INSTRUCTIONS:** This product may be used in declining alfalfa stands or any stand of alfalfa where crop destruction is acceptable. This product will control annual or perennial weeds, including quackgrass, when applied prior to crop harvest. Applications may be made at any time of the year. For control of quackgrass, apply in the spring, late summer or fall when quackgrass is actively growing. Treatments for quackgrass must be followed by deep tillage for complete control.

**PRECAUTIONS, RESTRICTIONS:** Make only one application to an existing stand of crop per year. The treated crop and weeds can be harvested and fed to livestock according to the application rates and intervals defined below.

	Maximum single application rate (per acre)	Minimum interval between application and harvest or livestock grazing
Alfalfa	2 quarts	36 hours
All other legumes listed	3 pints	3 days

This application may destroy the alfalfa stand and may severely injure or destroy other labeled crops such as clover. Preharvest application is not specified for alfalfa grown for seed, as a reduction in germination or vigor may result.

### **Spot Treatment, Over-the-Top Wiper Application**

**USE INSTRUCTIONS:** This product may be applied as a spot treatment or over the top of crops listed in this section with wiper applicators. For wipers, see "Wiper Applicators" in the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label. Applications may be made in the same area at 30-day intervals.

**PRECAUTIONS, RESTRICTIONS:** For spot treatment and wiper applications, apply in areas where the movement of domestic livestock can be controlled. No more than 10 percent of the total field area should be treated at one time. Remove domestic livestock before application and wait 3 days after application before grazing livestock or harvesting.

### **Renovation, Stand Removal**

**USE INSTRUCTIONS:** This product may be applied as a broadcast spray to remove established stands of alfalfa, clover, and other forage legumes listed on this label. If the crop is to be grazed or harvested for feed, use up to a maximum of 2 quarts per acre in alfalfa and up to 3 pints per acre in other labeled legumes. For complete removal of established stands of clover, it may be necessary to use treatment rates greater than this, as listed in the "PERENNIAL WEEDS RATE SECTION" of this label.

**PRECAUTIONS, RESTRICTIONS:** For applications up to 2 quarts per acre for alfalfa or 3 pints per acre for all other forage legumes, remove domestic livestock before application, follow the minimum harvest or grazing intervals in the table above under Preharvest in this section. For treatment rates above these levels, do not graze or harvest treated foliage for livestock feed or allow grazing. Crops listed in this label may be planted into the treated area at any time; for all other crops, wait 30 days or more between application and planting.

## Conservation Reserve Program (CRP)

TYPES OF APPLICATIONS: Renovation (Rotating Out Of CRP), Site Preparation, Postemergence Weed Control in Dormant CRP Grasses, Over-the-Top Wiper Application.

### Renovation (Rotating Out of CRP), Site Preparation

USE INSTRUCTIONS: This product may be used to prepare CRP land for crop production. Refer to Federal, state or local use guides for CRP renovation recommendations.

PRECAUTIONS, RESTRICTIONS: Crops listed on this label may be planted into the treated area at any time; for any other crop, wait at least 30 days between application and planting.

### Postemergence Weed Control in Dormant CRP Grasses, Over-the-Top Wiper Application

USE INSTRUCTIONS: Apply this product to suppress competitive growth and seed production of undesirable vegetation on CRP land. Applications may be made using wiper applicators to control tall weeds 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 perennial grasses have reached dormancy.

PRECAUTIONS, RESTRICTIONS: Some stunting of CRP perennial grasses will occur if broadcast applications are made when plants are not dormant. No waiting period is required between application and grazing or harvesting for feed. Do not apply more than 3 quarts per acre per year onto CRP land.

### Grass Seed or Sod Production

LABELLED CROPS: Any grass (Gramineae family) except Corn, Sorghum, Sugarcane and those listed in the "CEREAL AND GRAIN CROPS" section of this label.

TYPES OF APPLICATIONS: Preplant, At-Planting, Preemergence, Renovation, Removal of Established Stands, Site Preparation, Shielded Sprayers, Over-the-Top Wiper Application, Spot Treatment, Creating Rows in Annual Ryegrass.

### Preplant, At-Planting, Preemergence, Renovation, Removal of Established Stands, Site Preparation

USE INSTRUCTIONS: This product controls most existing vegetation prior to renovating turf or forage grass seed areas or establishing turf grass grown for sod. It may be used to destroy undesirable grass vegetation when production fields are converted to alternate species or crops. 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 turf management, apply this product after omitting at least one regular mowing to allow sufficient growth for good interception of the herbicide 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. Application rates of up to 5 quarts per acre may be used to totally remove established stands of tough to kill grass species.

PRECAUTIONS, RESTRICTIONS: Do not disturb soil or underground plant parts before treatment. Tillage or renovation techniques such as vertical mowing, coring or slicing should be delayed for 7 days after application to allow proper translocation into underground plant parts. 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 crop emergence in order to avoid crop injury.

### Shielded Sprayers

USE INSTRUCTIONS: Apply 1 to 3 quarts of this product as a broadcast spray 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 or through the protective shields. See additional instructions on the use of shielded sprayers in the "APPLICATION EQUIPMENT AND TECHNIQUES" section.

PRECAUTIONS, RESTRICTIONS: Droplets, mist, foam or splatter of the herbicide solution settling onto desirable vegetation may result in discoloration, stunting or destruction. Such damage shall be the sole responsibility of the applicator.

### Over-the-Top Wiper Application

USE INSTRUCTIONS: This product may be applied over the top of desirable grasses using wiper applicators for the control of tall weeds. See additional instructions on the use of wiper applicators in the "APPLICATION EQUIPMENT AND TECHNIQUES" section.

PRECAUTIONS, RESTRICTIONS: Droplets, mist, foam or splatter of the herbicide solution settling onto desirable vegetation may result in discoloration, stunting or destruction. Such damage shall be the sole responsibility of the applicator.

### Spot Treatment

USE INSTRUCTIONS: Apply a 1 to 1.5 percent solution of this product using hand-held spray equipment to control weeds within established vegetation prior to heading of grasses grown for seed. Hand-held equipment may also be used to control sod remnants or other unwanted vegetation after sod is harvested.

PRECAUTIONS, RESTRICTIONS: Apply this product prior to heading of grasses. Do not treat more than 10 percent of the total field area. Crop sprayed in treated area will be killed. Take care not to spray or allow spray to drift outside the target area to avoid unwanted crop destruction. 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: Apply 16 to 32 fluid ounces of this product per acre. Best results are obtained when applications are made before ryegrass reaches 6 inches in height. Use the higher rate when the ryegrass is greater than 6 inches in height. Set nozzle heights to allow the establishment of the desired row spacing. Use of low-pressure nozzles, or drop nozzles designed to target the application over a narrow band are specified.

PRECAUTIONS, RESTRICTIONS: Take care not to spray or allow droplets, spray fines, or drift to settle outside the treatment area to avoid unwanted crop destruction.

Grower assumes all responsibility for crop losses from misapplication.

## Pastures

LABELLED CROPS: Any grass (Gramineae family) except Corn, Sorghum, Sugarcane and those listed in the "CEREAL AND GRAIN CROPS" section of this label, including Bahiagrass, Bermudagrass, Bluegrass, Bromegrass, Fescue, Guinea-grass, Kikuyu grass, Orchardgrass, Pangola grass, Ryegrass, Timothy, Wheatgrass.

TYPES OF APPLICATIONS: Preplant, Preemergence, Pasture Renovation, Spot Treatment, Over-the-Top Wiper Application, Postemergence Weed Control (Broadcast Treatments).

### Preplant, Preemergence, Pasture Renovation

USE INSTRUCTIONS: This product may be applied for weed control prior to planting or emergence of forage grasses. This product may also be used to control perennial pasture species listed on this label prior to re-planting.

**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. For any crop not listed on this label, applications must be made at least 30 days prior to planting.

#### **Spot Treatment, Over-the-Top Wiper Application**

**USE INSTRUCTIONS:** This product may be applied in pastures as a spot treatment or over the top of desired grasses using wiper applicators to control tall weeds. Applications may be repeated in the same area at 30-day intervals. See additional instructions on the use of wiper applicators in the "APPLICATION EQUIPMENT AND TECHNIQUES" section.

**PRECAUTIONS, RESTRICTIONS:** For spot treatment and wiper application methods using rates of 3 quarts of this product per acre or less, the entire field or any portion of it may be treated. When spot treatments or wiper applications are made using rates above 3 quarts of this product per acre, no more than 10 percent of the field may be treated at any one time. To achieve maximum performance, remove domestic livestock before application and wait 7 days after application before grazing or harvesting for feed.

#### **Postemergence Weed Control (Broadcast Treatments)**

**USE INSTRUCTIONS:** This product may be applied to pastures to suppress competitive growth and seed production of annual weeds and undesirable vegetation. 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 perennial grasses have reached dormancy.

**PRECAUTIONS, RESTRICTIONS:** Some stunting of perennial grasses will occur if broadcast applications are made when plants are not dormant. Use of higher application rates will cause stand reductions. No waiting period is required between application and grazing or harvesting for feed. Do not apply more than 3 quarts per acre per year onto pasture grasses except for renovation use described above in this section. If replanting is needed due to severe stand reduction, wait at least 30 days after treatment prior to planting any crop not listed on this label.

## **Rangelands**

**TYPES OF APPLICATIONS:** Postemergence.

**USE INSTRUCTIONS:** 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.

Apply 12 to 16 fluid ounces of this product to control or suppress many weeds, including downy brome, cheatgrass, cereal rye and jointed goatgrass in rangelands. Apply when most mature 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 specified where spring moisture is usually limited and fall germination allows for good weed growth.

For medusahead, apply 16 fluid ounces of this product at the 3-leaf stage. Delaying applications beyond this stage will result in reduced or unacceptable control. Fire 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, RESTRICTIONS:** 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. Do not use ammonium sulfate when spraying rangeland grasses with this product. No waiting period between treatment and feeding or livestock grazing is required. Do not apply more than 3 quarts of this product per acre per year.

## **ROUNDUP READY CROPS**

The following instructions or those published separately on supplemental labeling for this product include all applications of this product that can be made onto the specified Roundup Ready crops during the complete cropping season. DO NOT combine these treatment instructions with those for crops in the "ANNUAL AND PERENNIAL CROPS (ALPHABETICAL)" section of this label that do not contain the Roundup Ready gene, unless otherwise directed in this product's labeling.

Tacoma Ag, LLC INTENDS USE OF THIS PRODUCT FOR POSTEMERGENCE (IN-CROP) APPLICATION ONLY ON CROPS DESIGNATED AS CONTAINING THE ROUNDUP READY GENE. Applying this product to crops that are not designated as Roundup Ready 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 the Roundup Ready gene, since severe plant injury or destruction will result.

The Roundup Ready designation indicates that the crop contains a patented gene that provides tolerance to this product. Information on Roundup Ready crops may be obtained from your seed supplier. Roundup Ready crops must be purchased from an authorized licensed seed supplier.

**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.

**For ground broadcast applications:** 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:** All labeled treatments may be made by aerial equipment where appropriate, provided that the applicator complies with the precautions and restrictions specified on this product's labeling, in particular in the "Aerial Equipment" section. 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 THE ROUNDUP READY GENE.**

**TANK MIXTURE:** Tank mixtures with other herbicides, insecticides, fungicides, micronutrients or foliar fertilizers may result in reduced weed control or crop injury and are NOT specified for applications of this product over the top of Roundup Ready crops unless otherwise noted in this product label, or in separate supplemental labeling.

Unless otherwise directed, nonionic surfactant may be added to the spray solution for applications to Roundup Ready crops. The addition of certain surfactants to this product may result in some crop response including leaf necrosis, leaf chlorosis or leaf speckling due to the surfactant added to the spray mixture. Read and carefully observe cautionary statements and other information appearing on the surfactant label.

Ammonium sulfate may be mixed with this product for applications to Roundup Ready crops. Refer to the "MIXING" section for instructions on the use of ammonium sulfate. 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:** The following instructions 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, a preplant burn-down treatment of this product is specified 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, burcumber, 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.

Rates of this product specified in the following sections, or in separate supplemental labeling for this product on the control of tough weeds, supersede the rates specified in the "ANNUAL WEEDS RATE SECTION" and the "PERENNIAL WEEDS RATE SECTION" of this label.

## Roundup Ready Alfalfa

**TYPES OF APPLICATIONS:** Preplant, At-planting, Preemergence, Postemergence (In-crop).

**USE INSTRUCTIONS:** Refer to the following table for the maximum application rates of this product.

Annual Maximum Application Rates	
Combined total per year for all applications, including preplant during year of establishment	8 quarts per acre
Combined total per year for in-crop applications for newly established and established stands	6 quarts per acre

**PRECAUTIONS AND RESTRICTIONS:** See the "ROUNDUP READY CROPS" section of this label for precautionary instructions for use of this product in Roundup Ready crops. See the "USE INFORMATION" section of this label for more information on "Annual Maximum Application Rates." Refer to individual tank mixture product label for restrictions and precautions, use according to the most restrictive precautionary statements for each product in the tank mixture.

### Preplant, At-Planting, Preemergence

**USE INSTRUCTIONS:** This product may be applied before, during or after planting alfalfa with a Roundup Ready gene, up to a maximum of 2 quarts per acre.

### Postemergence (In-crop)

**USE INSTRUCTIONS:** Applications of this product may be made over the top of Roundup Ready alfalfa (in-crop) from emergence to 5 days prior to harvest. To maximize crop yield and quality potential, applications of this product should be made after weeds have emerged but before alfalfa growth or re-growth interferes with spray coverage of the target weeds.

Refer to the "ANNUAL WEEDS RATE SECTION" and "PERENNIAL WEEDS RATE SECTION" in this label for rate recommendations for specific weeds. When ap-

plied as directed, this product will control these annual and perennial grasses and broadleaf weeds. In addition to those weeds listed in these sections, this product will suppress the parasitic weed Dodder (*Cuscuta* spp) in Roundup Ready alfalfa. Repeat applications may be necessary for complete control.

**Stand Establishment:** Due to the biology and breeding constraints of alfalfa, up to 10% of the seedlings may not contain a Roundup Ready gene and will not survive after the first application of this product. To eliminate the undesirable effects of stand gaps created by this loss of plants, a single application of this product per acre should be applied at or before the 4-trifoliolate growth stage. Refer to the following tables for maximum in-crop application rates during stand establishment (seeding year).

### STAND ESTABLISHMENT (Seeding Year) Application Rates

Prior to First Cutting	
From emergence up to 4 trifoliolate leaves	1 to 2 quarts per acre
From 5 trifoliolate leaves up to 5 days before first cutting	Up to 2 quarts per acre

### After First Cutting

In-crop application, per cutting, up to 5 days before cutting	Up to 2 quarts per acre
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**Established Stands-**Refer to the following table for directions and maximum application rates for in-crop applications to established stands of alfalfa (non-seeding year)

### ESTABLISHED STANDS Application Rates

In-crop application, per cutting, up to 5 days before cutting	Up to 2 quarts per acre
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**PRECAUTIONS, RESTRICTIONS:** Where Roundup Ready alfalfa is grown with a companion or cover crop, or is overseeded with a second species, in-crop (over-the-top) applications of this product will eliminate the non-glyphosate tolerant species. Any single in-crop application of this product should not exceed 2 quarts per acre. Sequential applications of this product should be at least 7 days apart. The combined total per year for all in-crop applications in both newly established (seeding year) and established stands (non-seeding year) must not exceed 6 quarts per acre. Remove domestic livestock before application. Wait a minimum of 5 days after application before grazing, cutting and feeding of forage and hay.

**TANK MIXTURES:** This product may be tank mixed with the products listed below. Ensure that the specific product used is labeled for alfalfa application.

**Newly Seeded Stands and Stand Establishment:** For control of emerged annual grasses and broadleaf weeds, this product may be applied at up to 2 quarts per acre in a tank mixture with the following herbicides. Application should be made after weeds have emerged but before the alfalfa growth or regrowth would interfere with spray coverage of the target weeds.

2,4-DB – Butoxone, Butyrac	Sethoxydim – Poast
Clethodim – Select 2EC	Imazamox – Raptor

**Dormant Application and Winter Treatment:** For control of emerged annual grasses and broadleaf weeds, up to 2 quarts per acre of this product may be applied in a tank mixture with the following herbicides. Tank mixtures should be applied when the temperature for the day remains above freezing.

### Dormant Application

Diuron – Diuron 4L, Karmex DF and Diuron 80DF, Kerb 50W, AlfaMax Gold

### Winter Treatment

Butoxone, Diuron, Velpar, AlfaMax

PRECAUTIONS, RESTRICTIONS: Tank mixtures of this product with other herbicides, insecticides, or fungicides may result in crop injury or reduced weed control. Applications should not be made to frozen or snow covered ground.

### **Roundup Ready Canola (Spring)**

Roundup Ready spring canola is defined as those Roundup Ready canola varieties that are seeded in the spring and harvested in the fall and do not enter a winter dormancy period.

TYPES OF APPLICATIONS: Preplant, At-Planting, Preemergence, Postemergence (In-crop).

DO NOT USE THIS PRODUCT ON CANOLA WITH THE ROUNDUP READY 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 HARVESTED FOR HUMAN OR LIVESTOCK FOOD.

#### **Annual Maximum Application Rates**

Preplant, At-planting, Preemergence applications	2 quarts per acre
Total in-crop application from emergence to 6-leaf stage	1 quart per acre

PRECAUTIONS AND RESTRICTIONS: See the "ROUNDUP READY CROPS" section of this label for precautionary instructions for use of this product in Roundup Ready crops. See the "USE INFORMATION" section of this label for more information on "Annual Maximum Application Rates."

#### **Preplant, At-planting, Preemergence**

USE INSTRUCTIONS: This product may be applied before, during or after planting, up to a maximum of 2 quarts per acre.

#### **Postemergence (In-crop)**

USE INSTRUCTIONS: This product may be applied postemergence to Roundup Ready 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.

**Single Application** - Apply 16 to 24 fluid ounces per acre no later than the 6-leaf stage for the control of annual weeds. Avoid overlapping applications that may result in temporary yellowing, delayed flowering, and or growth reduction. Similar crop injury may result when applications of more than 16 fluid ounces per acre are applied after the 4-leaf stage.

**Sequential Application** - Apply 16 fluid ounces 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 are specified for early emerging annual weeds and perennial weeds such as Canada thistle and quackgrass, or when multiple application times are needed for adequate weed control.

PRECAUTIONS, RESTRICTIONS: No more than two in-crop broadcast applications may be made from crop emergence through the 6-leaf stage of development and the total in-crop application should not exceed 32 fluid ounces per acre. Allow a minimum of 60 days between last application and canola harvest.

### **Roundup Ready Canola (Winter)**

Roundup Ready Winter Canola is defined as those Roundup Ready 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.

#### **Annual Maximum Application Rates**

Preplant, At-planting, Preemergence applications	2 quarts per acre
Total in-crop application from emergence to 6-leaf stage	1 quart per acre

DO NOT USE THIS PRODUCT ON WINTER CANOLA WITH THE ROUNDUP READY 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 HARVESTED FOR HUMAN OR LIVESTOCK FOOD.

TYPES OF APPLICATIONS: Preplant, At-Planting, Preemergence, Postemergence (In-crop).

USE INSTRUCTIONS: See the "ROUNDUP READY CROPS" section of this label for precautionary instructions for use of this product in Roundup Ready crops. See the "USE INFORMATION" section of this label for more information on "Annual Maximum Application Rate."

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

USE INSTRUCTIONS: This product may be applied before, during or after planting, up to a maximum of 2 quarts per acre.

#### **Postemergence (In-crop)**

USE INSTRUCTIONS: This product may be applied to Roundup Ready 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 regrowth has occurred and at least 60 days after a previous application of this product.

**Single Application**-Apply 24 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 specified 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 spray overlaps. Spray overlaps may result in temporary yellowing and/or growth reduction.

**Sequential Applications**-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 are specified 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.

PRECAUTIONS, RESTRICTIONS: 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 64 fluid ounces 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. Allow a minimum of 60 days between last application and harvest of canola grain. No waiting period is required between application and open grazing of livestock.

### **Roundup Ready Corn 2**

TYPES OF APPLICATIONS: Preplant, At-Planting, Preemergence, Postemergence (In-crop), Spot treatment, Preharvest, Post-harvest.

### Annual Maximum Application Rates

Combined total per year for all applications	8 quarts per acre
Preplant, At-Planting, Preemergence applications	5 quarts per acre
Total in-crop applications from emergence through 48 inches	3 quarts per acre
Maximum preharvest application	1 quart per acre

(See PRECAUTIONS, RESTRICTIONS section for Preharvest)

PRECAUTIONS, RESTRICTIONS: See the "ROUNDUP READY CROPS" section of this label for precautionary instructions for use of this product in Roundup Ready crops. See the "USE INFORMATION" section of this label for more information on "Annual Maximum Application Rates." Refer to individual tank mixture product label for restrictions and precautions, use according to the most restrictive precautionary statements for each product in the tank mixture.

### Preplant, At-planting, Preemergence

USE INSTRUCTIONS: This product may be applied alone or in a tank-mixture before, during or after planting.

TANK MIXTURES: This product may be tank mixed with the products listed below. Ensure that the specific product used is labeled for alfalfa application. Read and follow label directions for all products in the tank mixture. Apply these tank mixtures in 10 to 20 gallons of water or 10 to 60 gallons of nitrogen solution per acre.

Aim, Axiom, Balance, Balance PRO, Banvel, Bicep MAGNUM, Bicep II MAGNUM, Bicep Lite II MAGNUM, Bullet, Cinch, Cinch ATZ, Clarity, Define, Degree, Degree Xtra, Distinct, Dual II MAGNUM, Epic, Frontier, FullTime, Guardsman MAX, Harness, Harness Xtra, Harness Xtra 5.6L, Hornet, Keystone, Keystone LA, Lariat, Linex, Lorox, Marksman, Me-Too-Lachlor II, Micro-Tech, Prowl, Python, Python II, Radius, Resolve, Resource, Stalwart, Stalwart Xtra, Surpass, TopNotch

NOTE: For maximum weed control, a postemergence (in-crop) application of this product should be applied following the use of less than labeled rates of the preemergence residual products listed above.

### Postemergence (In-crop)

USE INSTRUCTIONS: This product may be applied alone or in tank mixtures postemergence (in-crop) to corn hybrids designated as Roundup Ready Corn 2. When applied as directed, this product controls annual grass and broadleaf weeds listed on this label. Many perennial grasses and broadleaf weeds will be controlled or suppressed with one or more applications of this product. A postemergence application of this product should be made before the weeds reach a height of 4 inches or before they become competitive with the crop. If new flushes of weeds occur, a sequential application of this product at 24 to 32 fluid ounces per acre should be made before the weeds reach a height of 4 inches.

This product may be broadcast over-the-top or applied with drop nozzles to Roundup Ready Corn 2 from emergence through the V8 stage (8 leaves with collars) or until corn height reaches 30 inches (free standing), whichever comes first. Drop nozzles are specified for optimum spray coverage and weed control when corn height is 24 to 30 inches. For corn heights 30 to 48 inches (free standing), apply this product only by ground application using drop nozzles aligned to avoid spraying into the whorls of the corn plants.

TANK MIXTURES: This product may be tank-mixed with the following products. Ensure that the specific product being used in the tank mixture is registered for application postemergence (in-crop) to corn. Read and follow label directions of all products in the tank mixture.

Banvel, Basis, Basis Gold, Bullet, Callisto, Clarity, Degree, Degree Xtra, Distinct, Equip, Harness, Harness Xtra, Harness Xtra 5.6L, Hornet, Marksman, Micro-Tech, Option, Resolve, Resource, YUKON

Tank Mix Partner	Maximum Height Of Corn For Application
Degree	11 inches
Degree Xtra	
Harness	
Harness Xtra	
Harness Xtra 5.6L	
Bullet*	5 inches
Micro-Tech*	
Atrazine	12 inches

\*Bullet and Micro-Tech are not registered for use as a postemergence application in Texas.

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 under hard water conditions, drought conditions or when tank mixed with Bullet® or Micro-Tech® herbicides.

PRECAUTIONS, RESTRICTIONS: Single in-crop applications of this product should not exceed 3 pints per acre. Sequential in-crop applications of this product from emergence through 48 inches in height must not exceed a total of 3 quarts per acre per growing season. Allow a minimum of 10 days between in-crop applications of this product. Allow a minimum of 50 days between application of this product in-crop and harvest of corn forage or grain. (For applications at preharvest timing, see Preharvest section of this label). The use of additional surfactants and other additives, including fertilizers and micro-nutrients, in the spray solution are not specified with this product and may result in increased potential for crop injury or reduced yield, and is not specified for over-the-top applications, unless otherwise directed in supplemental labeling.

### Preharvest

USE INSTRUCTIONS: A single preharvest application of up to 32 fluid ounces per acre of this product may be applied for annual and perennial weed control prior to crop harvest. Make application at 35 percent grain moisture or less. Ensure that maximum kernel fill is complete and the corn is physiologically mature (black layer formed).

PRECAUTIONS, RESTRICTIONS: Do not make a preharvest application of this product if more than a combined total of 64 fluid ounces of this product has been previously applied in over-the-top or drop nozzle applications. Allow a minimum of 7 days between a preharvest application and harvest or feeding of corn stover or grain.

### Postharvest

USE INSTRUCTIONS: This product may be applied for weed control after corn harvest. 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.

PRECAUTIONS, RESTRICTIONS: Allow a minimum of 7 days between treatment and harvest or feeding of treated vegetation.

## Roundup Ready Cotton

TYPES OF APPLICATIONS: Preplant, Preemergence, At-Planting, Postemergence (In-crop), Selective Equipment (In-Crop), Preharvest.

### Annual Maximum Application Rates

Combined total per year for all applications	8 quarts per acre
Preplant, At-Planting, Preemergence applications	5 quarts per acre
Total in-crop applications from ground cracking to layby	4 quarts per acre
Maximum preharvest application rate	2 quarts per acre
Combined total in-crop application from emergence through harvest	6 quarts per acre



**PRECAUTIONS, RESTRICTIONS:** See the "ROUNDUP READY CROPS" section of this label for precautionary instructions for use of this product in Roundup Ready crops. See the "USE INFORMATION" section of this label for more information on "Annual Maximum Application Rates." ALLOW A MINIMUM OF 7 DAYS BETWEEN APPLICATION AND HARVEST.

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

**USE INSTRUCTIONS:** This product may be applied before, during or after planting. Tank mixtures with other herbicides listed in this label may be used.

**TANK MIXTURES:** This product may be tank-mixed with 2,4-D and Clarity and applied prior to planting only. This product may be tank-mixed with the following products and applied prior to crop emergence. Ensure that the specific product being used in the tank mixture is registered for application prior to the emergence of cotton. Read and follow label directions of all products in the tank mixture.

Caparol, Cotoran, Direx, Dual MAGNUM, Prowl, Prowl H2O, Stalwart, Staple

**PRECAUTIONS, RESTRICTIONS:** The maximum quantity of this product that may be applied for all preplant, at-planting and preemergence applications combined is 5 quarts per acre per season.

#### **Postemergence (In-crop)**

**USE INSTRUCTIONS:** This product may be applied over the top of Roundup Ready cotton at rates up to 1 quart per acre per application from the ground cracking stage until the 4-leaf (node) stage of development (until the fifth true leaf reaches the size of a quarter). Applications made after the 4-leaf (node) stage of development may result in boll loss, delayed maturity and/or yield loss.

**TANK MIXTURES:** This product may be tank-mixed with the following products and applied over the top of Roundup Ready cotton: Ensure that the specific product being used in the tank mixture is registered for application postemergence (in-crop) to cotton. Read and follow label directions of all products in the tank mixture.

Assure II, Dual MAGNUM, Fusilade, Poast Plus, Select, Stalwart, Staple Staple may cause leaf yellowing and/or leaf crinkling when applied post-emergence (in-crop).

Dual Magnum and Stalwart applied over the top of Roundup Ready cotton may cause leaf injury in the form of necrotic spotting to exposed cotton leaves.

**PRECAUTIONS, RESTRICTIONS:** The maximum quantity of this product that may be applied for all in-crop applications from ground-cracking to layby combined is 4 quarts per acre per season. No more than two over-the-top broadcast applications may be made from crop emergence through the 4-leaf (node) stage of development. No more than two applications should be made from the 5-leaf stage through layby. Sequential over-the-top or post-directed applications of this product in-crop must be at least 10 days apart and cotton must have at least two nodes of incremental growth between applications. Do not add additional surfactant or additives containing surfactant to this product (other than those contained in any tank-mix product) for over-the-top applications to Roundup Ready cotton.

**Salvage Treatment:** This treatment may be used after the 4-leaf stage of development and should 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 application or as a post-directed treatment sprayed higher on the cotton plants and over the weeds. **NOTE: SALVAGE TREATMENTS WILL RESULT IN SIGNIFICANT BOLL LOSS, DELAYED MATURITY AND/OR YIELD LOSS. NO MORE THAN ONE SALVAGE TREATMENT SHOULD BE USED PER GROWING SEASON.**

#### **Selective Equipment (In-crop)**

**USE INSTRUCTIONS:** This product may be applied using precision post-directed

or hooded sprayers at rates up to 1 quart per acre per application to Roundup Ready cotton through layby. At this stage, use post-directed equipment to direct the spray to the base of the cotton plants. Avoid contact of the herbicide spray with the cotton leaves to the maximum extent possible. To minimize spray contact maintain low spray pressure (less than 30 pounds per square inch) and place nozzles in a low position, directing a horizontal spray pattern under the cotton leaves and onto weeds in the row. For best results, make applications while weeds are small (less than 3 inches). See additional instructions on the use of selective equipment in the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label.

**TANK MIXTURES:** This product can be tank-mixed with the following products for in-crop application using precision post-directed or hooded sprayers. Ensure that the specific product being used in the tank mixture is registered for application postemergence (in-crop) to cotton. Read and follow label directions of all products in the tank mixture.

Aim, Caparol, Chateau, Cotoran, Direx, Layby-Pro, Prowl H2O, Staple, Valor Staple may cause leaf yellowing and/or leaf crinkling when applied post-emergence (in-crop).

**PRECAUTIONS, RESTRICTIONS:** The maximum quantity of this product that may be applied for all in-crop applications from ground-cracking to layby combined is 4 quarts per acre per season. Sequential over-the-top or post-directed applications of this product in-crop must be at least 10 days apart and cotton must have at least two nodes of incremental growth between applications.

#### **Preharvest**

**USE INSTRUCTIONS:** This product may be applied for annual and perennial weed control as a broadcast treatment prior to crop harvest after 20 percent boll crack. Apply up to 2 quarts of this product per acre. **NOTE:** This product will not enhance the performance of harvest aids when applied to Roundup Ready cotton.

**PRECAUTIONS, RESTRICTIONS:** Allow a minimum of 7 days between application and harvest of cotton. Preharvest application is not specified for cotton grown for seed, as a reduction in germination or vigor may occur.

**ATTENTION:** Use of this product in accordance with label directions is expected to result in normal growth of Roundup Ready Cotton, however, due to the sensitivity of cotton fruiting to various environmental conditions, agronomic practices and other factors it is 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.

### **Roundup Ready Flex Cotton**

The use of the over-the-top applications described in this section on other than Roundup Ready Flex cotton will cause crop injury and reduced yields. Drift of this product from applications made to Roundup Ready Flex cotton onto adjacent fields of post 4-leaf (node) Roundup Ready cotton may cause extensive injury including boll loss, delayed maturity and/or yield loss.

**Note:** The instructions provided in this section are specific to, and should only be used with, varieties designated as Roundup Ready Flex cotton. Do Not combine the instructions in this section, with those in the "Roundup Ready Cotton" section of this label, or with any other Roundup Ready cotton or Roundup Ready Flex cotton instructions on labeling for this or other glyphosate-containing product.

**TYPES OF APPLICATIONS:** Preplant, At-Planting, Preemergence, Postemergence (In-crop), Preharvest.

### **Annual Maximum Allowable Application Rates**

Combined total per year for all applications	8 quarts per acre
Preplant, At-planting, Preemergence applications	5 quarts per acre
Total in-crop applications from ground cracking to 60 percent open bolls	6 quarts per acre
Maximum allowed from 60 percent bolls open to 7 days prior to harvest	2 quarts per acre
Combined total in-crop application from emergence through harvest	6 quarts per acre

**PRECAUTIONS, RESTRICTIONS:** See the "ROUNDUP READY CROPS" section of this label for precautionary instructions for use in Roundup Ready crops. See the "USE INFORMATION" section of this label for more information on "Annual Maximum Application Rates." Refer to individual tank mixture product label for restrictions and precautions, use according to the most restrictive precautionary statements for each product in the tank mixture.

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

**USE INSTRUCTIONS:** This product may be applied before, during or after planting. **TANK MIXTURES:** This product may be tank-mixed with 2,4-D or Clarity and applied prior to planting only. This product may be tank-mixed with the following products and applied prior to crop emergence. Ensure that the specific product being used in the tank mixture is registered for application prior to emergence of cotton. Read and follow label directions of all products in the tank mixture.

Caparol, Cotoran, Direx, Dual Magnum, Prowl, Prowl H2O, Stalwart, Staple

### **Postemergence (In-crop)**

**USE INSTRUCTIONS:** This product may be applied to control annual grasses and broadleaf weeds listed on this label in Roundup Ready 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. In general, an initial application of 1 quart per acre on 1 to 3 inch tall annual grass and broadleaf weeds is specified. This product may be applied postemergence at rates up to 1.5 quarts per acre per application. In addition to broadcast applications, post-directed spray equipment may be used to achieve weed coverage.

**TANK MIXTURES:** This product may be tank-mixed with the following products and applied postemergence (in-crop) over the top of Roundup Ready Flex cotton. Ensure that the specific product being used in the tank mixture is registered for application postemergence (in-crop) to cotton. Read and follow label directions of all products in the tank mixture.

Assure II, Dual MAGNUM, Envoke, Fusilade, Poast Plus, Select, Stalwart, Staple Staple may cause leaf yellowing and/or leaf crinkling when applied post-emergence (in-crop).

Dual Magnum and Stalwart applied over the top of Roundup Ready cotton may cause leaf injury in the form of necrotic spotting to exposed cotton leaves.

**PRECAUTIONS, RESTRICTIONS:** The maximum rate for any single in-crop application of this product is 1.5 quarts per acre made using ground application equipment. In-crop application rates above 1 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. Do not exceed a maximum rate of 1 quart per acre of this product when making applications by air. Between layby and 60 percent open bolls, the maximum combined total rate of this product that may be applied is 2 quarts per acre. The maximum combined total of all applications made from crop emergence to 60 percent open bolls must not exceed 6 quarts per acre. Do not add additional surfactant or additives

containing surfactant to this product for over-the-top applications to Roundup Ready Flex cotton.

### **Preharvest**

**USE INSTRUCTIONS:** Up to 2 quarts of this product may be applied for annual and perennial weed control as a broadcast treatment prior to harvest after 60 percent boll crack. **NOTE:** This product will not enhance the performance of harvest aids when applied to Roundup Ready Flex cotton.

**PRECAUTIONS, RESTRICTIONS:** Allow a minimum of 7 days between application and harvest. Preharvest application is not specified for cotton grown for seed, as a reduction in germination or vigor may occur.

**ATTENTION:** Use of this product in accordance with label directions is expected to result in normal growth of Roundup Ready Flex Cotton, however, due to the sensitivity of cotton fruiting to various environmental conditions, agronomic practices and other factors it is 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.

## **Roundup Ready Soybeans**

**TYPES OF APPLICATIONS:** Preplant, Preemergence, At-Planting, Postemergence (In-crop), Preharvest, Post-Harvest.

### **Annual Maximum Application Rates**

Combined total per year for all applications	8 quarts per acre
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**PRECAUTIONS, RESTRICTIONS:** See the "ROUNDUP READY CROPS" section of this label for precautionary instructions for use in Roundup Ready crops. See the "USE INFORMATION" section of this label for more information on "Annual Maximum Application Rates." Refer to individual tank mixture product label for restrictions and precautions, use according to the most restrictive precautionary statements for each product in the tank mixture.

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

**USE INSTRUCTIONS:** This product may be applied before, during or after planting.

**TANK MIXTURES:** This product may be tank-mixed with 2,4-D, Banvel or Clarity and applied prior to planting only. This product may be tank-mixed with the following products and applied prior to crop emergence. Ensure that the specific product being used in the tank mixture is registered for application prior to emergence of soybeans. Read and follow label directions of all products in the tank mixture.

Aim, Amplify, Assure II, Axiom, Authority, Blanket, Boundary, Canopy, Canopy EX, Classic, Cobra, Command, Command Xtra, Domain, Dual MAGNUM, Dual II MAGNUM, FirstRate, Flexstar, Frontier, Fusion, Gangster, Gauntlet, INTRRO, Lexone, Linex, Linuron, Lorox, Lorox Plus, Me-Too-Lachlor, Micro-Tech, Outlook, Pendifmax, Prowl, Prowl H2O, Pursuit, Pursuit Plus, Python, Reflex, Resource, Scepter, Select, Select MAX, Sencor, Spartan, Squadron, Steel, Valour

### **Postemergence (In-crop)**

**USE INSTRUCTIONS:** This product may be used to control annual grasses and broadleaf weeds listed on this label in Roundup Ready soybeans. Applications of this product can be made from emergence (cracking) through flowering (R2 stage soybeans). R2 stage soybeans ends when a pod reaches 5 millimeters (0.2 inches) in length at one of the four uppermost nodes on the main stem with a fully developed leaf. Refer to the "ANNUAL WEEDS RATE SECTION" in this label for rate recommendations for specific annual weeds. In general, an initial application of 1 quart per acre on 2- to 8-inch tall weeds is specified. 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 dense weed populations exist. A 1 to 2-quarts per acre rate (single or multiple applications) of this product will control or suppress perennial weeds such as: Bermudagrass, Canada thistle, common milkweed, field bindweed, hemp dogbane, horsenettle, marestalk (horseweed), nutsedge, quackgrass, rhizome johnsongrass, redvine, trumpet-creeper, 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.

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 product 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 ROUNDUP READY SOYBEAN CROP. To control giant ragweed, it is specified that 1 quart per acre of this product be applied when the weed is 8 to 12 inches tall to increase control and possibly avoid the need for a sequential application.

**TANK MIXTURES:** This product may be tank-mixed with the following products and applied postemergence (in-crop) over the top of Roundup Ready soybeans. Ensure that the specific product being used in the tank mixture is registered for application postemergence (in-crop) to soybeans. Read and follow label directions of all products in the tank mixture.

Active ingredient(s) or brand name of product(s) containing the following active ingredients that are registered for use postemergence (in-crop) to soybean: acifluorfen, clethodim, bentazoxchlorimuron ethyl, imazethapyr, cloransulam-methyl, fenoxypyr, fluzazifop-p-butyl, flumiclorac-pentyl ester, fomesafen, imazamox, lactofen, pendimethalin, quizalofop P-ethyl, sethoxydim, thifensulfuron-methyl.

Arrow, Assure II, Basagran, Classic, Cobra, Extreme, FirstRate, Flexstar, Fusilade DX, Fusion, Harmony GT XP, Poast, Poast Plus, Pursuit, Pursuit Plus, Raptor, Reflex, Select, Select MAX, Synchrony STS, Targa, Ultra Blazer.

**PRECAUTIONS, RESTRICTIONS:** The combined total application from crop emergence through harvest must not exceed 3 quarts per acre. 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.

#### **Preharvest**

**USE INSTRUCTIONS:** This product may be applied for weed control prior to harvest of soybeans after pods have set and lost all green color. Up to 1 quart per acre of this product can be applied by aerial or ground application.

**PRECAUTIONS, RESTRICTIONS:** Care should be taken to avoid excessive seed shatter loss due to ground application equipment. Allow a minimum of 14 days between final application and harvest of soybean grain or feeding of soybean grain, forage or hay.

#### **Post-Harvest**

**USE INSTRUCTIONS:** This product may be applied after harvest of Roundup Ready soybeans. 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.

## **Roundup Ready Sugar Beet**

**TYPES OF APPLICATIONS:** Preplant, At-Planting, Preemergence, Postemergence (In-crop).

#### **Maximum Annual Application Rates**

Combined total per year for all applications	8 quarts per acre
Preplant, At-planting, Preemergence 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

**PRECAUTIONS, RESTRICTIONS:** See the "ROUNDUP READY CROPS" section of this label for precautionary instructions for use in Roundup Ready crops. See the "USE INFORMATION" section of this label for more information on "Annual Maximum Application Rates." Refer to individual tank mixture product label for restrictions and precautions, use according to the most restrictive precautionary statements for each product in the tank mixture.

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

**USE INSTRUCTIONS:** This product may be applied before, during or after planting.

**TANK MIXTURES:** This product may be tank-mixed with the following products and applied prior to crop emergence. Ensure that the specific product being used in the tank mixture is registered for application prior to emergence of sugar beet. Read and follow label directions of all products in the tank mixture.

Active ingredient(s) or brand name of product(s) containing the following active ingredients that are registered for use preplant, at-planting, and/or preemergence to sugar beet: dimethenamid, s-metolachlor

Dual Magnum, Frontier

#### **Postemergence (In-Crop)**

**USE INSTRUCTIONS:** This product may be applied over-the-top of Roundup Ready 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. Refer to the "ANNUAL WEEDS RATE SECTION" in this label for rate recommendations for specific annual weeds. 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.

**TANK MIXTURES:** This product may be tank-mixed with the following products and applied postemergence (in-crop) over the top of Roundup Ready sugar beet. Ensure that the specific product being used in the tank mixture is registered for application postemergence (in-crop) to sugar beet. Read and follow label directions of all products in the tank mixture.

Active ingredient(s) or brand name of product(s) containing the following active ingredients that are registered for use postemergence (in-crop) to sugar beet: clethodim, clopyralid, desmedipham, ethofumesate, phenmedipham, quizalofop-p-ethyl, sethoxydim, trisulfuron-methyl.

Assure II, Betamix, Betanex, Norton SC, Poast, Progress, Select, Stinger, Upbeet

**PRECAUTIONS, RESTRICTIONS:** The combined total application from crop emergence through harvest must not exceed 4.5 quarts per acre. The maximum rate for any single application from crop emergence until 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 quart per acre. Allow a minimum of 30 days between last application and sugar beet harvest.

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## **NON-CROP USES AROUND THE FARMSTEAD**

**TYPES OF APPLICATIONS:** Weed Control, Trim-and-Edge, Greenhouse/Shade-house, Chemical Mowing, Cut Stump, Habitat Management.

## Weed Control, Trim-And-Edge

USE INSTRUCTIONS: This product may be used to control annual weeds, perennial weeds and woody brush found in any part of the farmstead, including around building foundations and equipment storage areas, along and in fences, in dry ditches and canals, along ditchbanks, farm roads, rangeland, rights-of-way, shelterbelts, and prior to planting landscape ornamentals. Refer to the "ANNUAL WEEDS" and "PERENNIAL WEEDS" and "WOODY BRUSH AND TREES RATE SECTIONS" in this label for treatment rates. For application through backpack sprayers, handguns or other high-volume spray-to-wet applications, see the "Annual Weeds -- Hand-Held or Backpack Equipment" section of this label for further instructions.

TANK MIXTURES: This product may be tank mixed with the following products, provided that the specific product used is registered for treatment of these non-crop sites. Refer to the individual product labels for approved farmstead sites and application rates. For more information, see the "TANK MIXTURES" and "TANK MIXING PROCEDURES" sections of this label.

Arsenal	Outrider	Simazine
Barricade 65WG	Oust	Surflan AS
Crossbow L	Pendimethalin	Surflan WDG
Diuron	Pendulum 3.3 EC	Telar
Dicamba	Pendulum WDG	Transline
Endurance	Plateau	Vanquish
Escort	Princep DF	Velpar DF
Goal 2XL	Princep 4L	Velpar L
Karmex DF	Ronstar 50 WP	2,4-D
Krovat 1 DF	Sahara	

This product plus dicamba tank mixtures may not be applied by air in California.

## Greenhouse/Shadehouse

USE INSTRUCTIONS: This product may be used to control weeds in and around greenhouses and shade houses.

PRECAUTIONS, RESTRICTIONS: Desirable vegetation must not be present during application. Air circulation fans must be turned off. Do not use in residential greenhouses.

## Chemical Mowing

USE INSTRUCTIONS: This product will suppress perennial grasses listed in this section to serve as a substitute for mowing. Use 6 fluid ounces of this product per acre when treating Kentucky bluegrass. Use 8 fluid ounces of this product per acre when treating tall fescue, fine fescue, orchardgrass, bahiagrass or quackgrass covers. Use 16 fluid ounces of this product per acre when treating Bermudagrass. Use 64 fluid ounces of this product per acre when treating torpedograss or paragrass. 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, RESTRICTIONS: Use only in areas where some temporary injury or discoloration of perennial grasses can be tolerated.

## Cut Stump

TYPES OF APPLICATIONS: Treating cut stumps in any non-crop site listed on this label.

USE INSTRUCTIONS: This product will control regrowth of cut stumps and re-sprouts of many types of woody brush and tree species, some of which are listed below. 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 percent solution of this product to the freshly cut surface immediately after cutting. Delays in application may result in reduced performance. For best results, applications should be made during periods of active growth and full leaf expansion.

Alder	Pepper, Brazilian	Sweetgum
Eucalyptus	Pine, Austrian	Tan oak
Madrone	Red, giant	Willow
Oak	Salt-cedar	

PRECAUTIONS, RESTRICTIONS: 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 APPLICATIONS: 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.

### 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, including Roundup Ready canola, 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. For specific product instructions for Roundup Ready canola wildlife food plots, see the "ROUNDUP READY CANOLA" section of this label.

PRECAUTIONS, RESTRICTIONS: Do not process treated Roundup Ready canola seeds from Roundup Ready canola wildlife food plots for food. Do not graze or feed treated Roundup Ready canola from wildlife food plots to livestock. There are no rotational restrictions for planting any wildlife food species or for allowing native species to repopulate the area following applications of this product.

## ANNUAL WEEDS RATE SECTION

When water carrier volumes are between 16 and 40 gallons per acre for ground applications and between 6 and 15 gallons per acre for aerial applications, the following use rates will control the annual weeds listed in the table below:

- 1 quart per acre - grass and broadleaf annual weeds less than 6 inches in height or circumference and vines less than 3 inches in length.
- 3 pints per acre - grass and broadleaf annual weeds 6 to 12 inches in height or circumference and vines 3 to 6 inches in length.
- 2 quarts per acre - grass and broadleaf annual weeds greater than 12 inches in height or circumference and vines greater than 6 inches in length.

WHEN WATER CARRIER VOLUMES ARE BETWEEN 3 AND 15 GALLONS PER ACRE FOR GROUND APPLICATIONS AND BETWEEN 3 AND 5 GALLONS PER ACRE FOR AERIAL APPLICATIONS, USE THE RATES SPECIFIED FOR INDIVIDUAL WEEDS AS LISTED IN THE "ANNUAL WEEDS RATE TABLE (Alphabetically by Species)".

Apply to actively growing annual weeds. Annual weeds are generally easiest to control when they are small.

Older, mature (hardened) annual weed species may require higher rates even if they meet the size requirements.

Maximum size refers to the maximum plant height, length of runners for vines, or circumference of rosette plants in inches.

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.

This product may be used up to 64 fluid ounces per acre where heavy weed densities exist.

### ANNUAL WEEDS RATE TABLE (Alphabetically by Species)

WEED SPECIES	RATE (fluid ounces per acre)				
	16	24	32	40	48
	Maximum size (in inches)				
Ammannia, purple	3	6	12	-	18
Anoda, 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	-	-	-	-
Bluegrass, 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 geranium	-	-	4	-	9
Carpetweed	-	6	12	-	-
Cheat <sup>2</sup>	6	20	-	-	-
Chervil	20	-	-	-	-
Chickweed	-	12	18	-	-
Cocklebur	12	18	24	-	36
Copperleaf, hophornbean	-	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
Devilsclaw (unicorn plant)	-	3	6	-	-
Dwarfdandelion	12	-	-	-	-
Eastern mannagrass	8	12	-	-	-
Eclipta	-	4	8	12	-
Fall panicum	4	-	6	-	12
Falsedandelion	-	20	-	-	-
Falsesflax, smallseed	12	-	-	-	-

WEED SPECIES	RATE (fluid ounces per acre)				
	16	24	32	40	48
	Maximum size (in inches)				
Fiddleneck	-	6	12	-	-
Field pennycress	6	12	-	-	-
Filaree	-	-	6	-	12
Fleabane, annual	6	20	-	-	-
Fleabane, hairy (Conyza bonariensis)	-	-	6	-	10
Fleabane, rough	3	6	12	-	-
Florida pusley	-	-	4	-	6
Foxtail, giant, bristly, yellow	6	12	20	-	-
Foxtail, Carolina	10	-	-	-	-
Foxtail, green	12	-	-	-	-
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/Marestail (Conyza Canadensis)*	-	6	12	-	18
Itchgrass	6	8	12	-	18
Jimsonweed	-	-	12	-	18
Johnsongrass, seedling	6	12	18	-	24
Junglerice	-	3	6	7	9
Knotweed	-	-	6	-	12
Kochia <sup>4</sup>	-	3 to 6	12	-	-
Lambsquarters *	-	6	12	-	20
Little barley	6	12	-	-	-
London rocket	6	-	24	-	-
Mayweed	-	2	6	12	18
Morningglory, annual (Ipomoea spp)	-	-	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, Palmer *	-	12	18	24	-
Pigweed species *	-	12	18	24	-
Prickly lettuce	-	6	12	-	-
Purslane	-	-	3	-	6
Ragweed, common *	-	6	12	-	18
Ragweed, giant *	-	6	12	-	18
Red rice	-	-	4	-	-
Rye, volunteer/cereal <sup>2</sup>	6	18	18+	-	-
Ryegrass species *	-	-	6	-	12
Sandbur, field	6	12	-	-	-
Sandbur, longspine	6	12	-	-	-
Shattercane	6	12	20	-	-

WEED SPECIES	RATE (fluid ounces per acre)			
	16	24	32	40
		Maximum size (in inches)		
Shepherdspurse	6	12	-	-
Sicklepod	-	2	4	8
Signalgrass, broadleaf	-	3	6	7
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	-	-
Sunflower	12	18	-	-
Swinecress	-	5	12	-
Teaweed/ Prickly sida	-	2	4	6
Texas panicum	6	8	12	24
Thistle, Russian <sup>5</sup>	-	6	12	-
Velvetleaf	-	-	6	12
Virginia pepperweed	-	18	-	-
Waterhemp *	-	-	6	12
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 fluid ounces 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 fluid ounces per acre of this product to control wild buckwheat in the cotyledon to 2-leaf stage. Use 32 fluid ounces 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 fluid ounces followed by 32 fluid ounces of this product 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.

\* A glyphosate resistant biotype has been confirmed. For additional information, refer to the "WEED RESISTANCE MANAGEMENT" section of this label. You may also visit [www.weedsystems.org](http://www.weedsystems.org) or [www.weedresistancemanagement.com](http://www.weedresistancemanagement.com) for more information.

### **Annual Weeds - Tank Mixtures with 2,4-D or Dicamba or Tordon 22K**

Better control of certain tough weeds can be achieved by tank mixing this product with 0.25 pound of dicamba, 0.5 pound of 2,4-D or 1 to 2 fluid ounces of Tordon 22K per acre. These other herbicides, combined with the rates of this product specified in the "ANNUAL WEEDS RATE TABLE" above, will control the

following weeds up to the maximum height or length indicated: 6" -- prickly lettuce, marestail/horseweed, morning glory, Kochia (dicamba only) wild buckwheat (Tordon 22K only); 12" -- cocklebur, lambsquarters, pigweed, Russian thistle (2,4-D only).

For better control of common ragweed, giant ragweed, Pennsylvania smartweed, or velvetleaf with a maximum height of 6-inches, tank mix this product with 0.5 pound of 2,4-D per acre.

Ensure that the specific product is registered for application at the desired site. Follow all precautions and limitations on the tank mix product's label, including application timing restrictions, soil restrictions, minimum re-cropping interval and rotational guidelines. Some crop injury may occur if dicamba or Tordon 22K is applied within 45 days of planting.

DO NOT APPLY DICAMBA TANK MIXTURES BY AIR IN CALIFORNIA.

### **Annual Weeds - Hand-Held or Backpack Equipment**

For control of weeds listed in the "ANNUAL WEEDS RATE TABLE" above, 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-percent solution.

For best results, use a 2-percent 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-percent solution for annual and perennial weeds and a 5- to 10-percent 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.

Applications of 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 ounces for control), Downy brome, Green foxtail, Lambsquarters, Prickly lettuce, Tansy mustard, Pigweed, Field sandbur, Stinkgrass, Russian thistle, Volunteer wheat, Witchgrass and Kochia (add 0.12 pound of dicamba for control).

Ensure that the specific product is registered for application at the desired site. Follow all precautions and limitations on the tank mix product's label, including application timing restrictions, soil restrictions, minimum re-cropping interval and rotational guidelines.

### **PERENNIAL WEEDS RATE SECTION**

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. Best results are obtained when soil moisture is adequate for active weed growth.

## PERENNIAL WEEDS RATE TABLE (Alphabetically by Species)

WEED SPECIES	RATE (Q/A)	WATER VOLUME	HAND-HELD %SOLUTION	COMMENTS
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. Applications should be followed with deep tillage at least 7 days after treatment, but before soil freeze-up.
Alligatorweed	4	3-20	1.5%	For partial control, apply when most of the plants are in bloom. Repeat applications will be required to achieve control.
Anise (fennel)	-	-	1-2%	Apply as a spray-to-wet treatment.
Bahiagrass	3-5	3-20	2%	
Bentgrass	3-5	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. Tillage prior to treatment should be avoided. Tillage 7 to 10 days after application is specified for best results.
Bermudagrass	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 Bermudagrass is actively growing and seedheads are present. Retreatment may be necessary to achieve control.
Bermudagrass, water (knotgrass)	1-1.5	5-10	2%	Apply 3 pints of this product in 5 to 10 gallons of water per acre. Apply when water Bermudagrass 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 Bermudagrass that is 12 to 18 inches in length. This product is not registered in California for use on water Bermudagrass.
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 per acre east of the Mississippi River. Apply when the 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 plus 0.5 pound of dicamba 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 plus 1 pound of 2,4-D in 10 to 20 gallons of water per acre with ground equipment only. 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. Irrigate at least once to promote active bindweed growth.  For suppression, apply 1 pint of this product plus 0.5 pound 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. Applications should be delayed until maximum emergence has occurred and when vines are between 6 to 18 inches in length.  In California only, 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 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 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.

## PERENNIAL WEEDS RATE TABLE (Alphabetically by Species)

WEED SPECIES	RATE (Q/A)	WATER VOLUME	HAND-HELD %SOLUTION	COMMENTS
Bluesteed, 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 that are at 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	-	3-20	2%	For control, apply 2 quarts of this product plus 0.5 pound of dicamba per acre. For partial control, apply 1 quart of this product plus 1/2 pound of dicamba per acre. 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 <sup>2</sup>	2-3	3-40	2%	
Cattail <sup>2</sup>	3-5	3-40	2%	
Clover; red or white <sup>1</sup>	3-5	3-20	2%	Also for control, apply 16 to 32 fluid ounces of this product plus 0.5 to 1 pound of 2,4-D, in 3 to 10 gallons of water per acre.
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 achieve control.
Dallisgrass <sup>2</sup>	3-5	3-20	2%	
Dandelion <sup>1</sup>	3-5	3-20	2%	Also for control, apply 1 pint of this product plus 0.5 pound of 2,4-D, in 3 to 10 gallons of water per acre.
Dock, curly <sup>1</sup>	3-5	3-40	2%	Also for control, apply 1 to 2 pints of this product plus 0.5 to 1 pound of 2,4-D, in 3 to 10 gallons of water per acre.
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 1 pint of this product plus 0.5 pound 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.
Fescue (except tall) <sup>1</sup>	3-5	3-20	2%	
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 seedlings germinating after fall treatments or the following spring.
Guineagrass	2-3	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. In Texas and ridge of Florida, use 2 quarts of this product per acre for control. In the flatwoods region of Florida, 3 quarts of this product per acre are required for control.
Horsenettle <sup>1</sup>	3-5	3-20	2%	
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.
Iceland <sup>1</sup>	-	-	1.5-2%	Thorough coverage is necessary for best control.
Jerusalem artichoke <sup>1</sup>	3-5	3-20	2%	



## PERENNIAL WEEDS RATE TABLE (Alphabetically by Species)

WEED SPECIES	RATE (Q/A)	WATER VOLUME	HAND-HELD %SOLUTION	COMMENTS
Johnsongrass	0.5-3	3-40	1%	<p>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 areas, 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.</p> <p>For best results, apply when most plants have reached the 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 of this product per acre.</p> <p>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.</p> <p>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.</p>
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.
Knawweed	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 <sup>1</sup>	3-5	3-20	2%	
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 prior to spring applications. Allow 3 or more days after application before tillage.
Mullein, common <sup>1</sup>	3-5	3-20	2%	
Napiergrass <sup>2</sup>	3-5	3-20	2%	
Nightshade, silverleaf	2	3-10	2%	Applications should be made when at least 60 percent of the plants have berries. Fall treatments must be applied before a killing frost.
Nutsedge, purple or yellow	0.5-3	3-40	1-2%	<p>Apply 3 quarts of this product per acre or apply a 1 to 2 percent 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 that have not germinated will not be controlled and may germinate following treatment. Repeat treatments will be required for long-term control of ungerminated tubers.</p> <p>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.</p> <p>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.</p>
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.

## PERENNIAL WEEDS RATE TABLE (Alphabetically by Species)

WEED SPECIES	RATE (Q/A)	WATER VOLUME	HAND-HELD %SOLUTION	COMMENTS
Orchardgrass, <i>continued</i>				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.
Pampasgrass	-	-	1.5-2%	Pampasgrass should be at or beyond the boot stage of growth. Thorough coverage is necessary for best control.
Paragrass <sup>2</sup>	3-5	3-20	2%	
Phragmites	3-5	10-40	1-2%	For partial control and best results, treat during late summer or fall when plants are actively growing and in full bloom. Treatment before or after this stage may result in reduced control. Due to the dense nature of this vegetation that may prevent good spray coverage or uneven stages of growth, repeat treatments may be necessary to achieve control. Visual control symptoms will be slow to develop.
Poison hemlock	-	-	1-2%	For hand-held, apply as a spray-to-wet treatment. Optimum results are obtained when plants are treated at the bud to full-bloom stage of growth. Thorough coverage is necessary for best control.
Pokeweed, common	1	3-40	2%	Apply to actively growing plants up to 24 inches tall.
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 the 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 the quackgrass is greater than 8 inches tall.
Redvine	0.75-2	5-10	2%	For suppression, apply 1.5 pints 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 that 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 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 when applying 10 to 40 gallons of water per acre. In non-crop areas, 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 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 of this product per acre.
Smartweed, swamp <sup>1</sup>	3-5	3-40	2%	Also for control, apply 1 pint of this product plus 0.5 pound of 2,4-D, in 3 to 10 gallons of water per acre in the late summer or fall.
Sowthistle, perennial	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 growth 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.
Spurge, leafy	-	3-10	2%	For suppression, apply 1 pint of this product plus 0.5 pound of 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 plants are 12 inches tall.

## PERENNIAL WEEDS RATE TABLE (Alphabetically by Species)

WEED SPECIES	RATE (Q/A)	WATER VOLUME	HAND-HELD %SOLUTION	COMMENTS
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%	For partial control, apply to plants that are at or beyond the bloom stage of growth. Repeat applications may be required.
Thistle, artichoke	-	-	2%	For 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 growth 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 in the spring, apply 1 quart of this product, or 1 pint of this product plus 0.5 pound of 2,4-D, in 3 to 10 gallons of water per acre. 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.
Timothy <sup>2</sup>	2-3	3-40	2%	
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 achieve control. Fall treatments must be applied before frost.
Trumpetcreeper	2	5-10	2%	For partial control, apply in late September or October, to plants that 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 <sup>2</sup>	3-5	3-20	2%	
Velvetgrass <sup>2</sup>	3-5	3-20	2%	
Wheatgrass, western <sup>2</sup>	2-3	3-40	2%	

<sup>1</sup> Apply when most plants have reached the early bud stage of growth.

<sup>2</sup> Apply when most plants have reached the early heading stage of growth.

## WOODY BRUSH AND TREES RATE SECTION

Apply this product after full leaf expansion, unless otherwise directed. Use the 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.

Unless otherwise directed, apply broadcast treatments in 3 to 40 gallons of water per acre. 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.

## WOODY BRUSH AND TREES RATE TABLE (Alphabetically by species)

Weed Species	Rate (QT/A)	Water Volume (GPA)	Hand-Held % Solution
Alder	3-4	3-40	1-1.5%
Ash <sup>1</sup>	2-5	3-40	1-2%
Aspen, quaking	2-3	3-40	1-1.5%
Bearmat (Bearclover) <sup>1</sup>	2-5	3-40	1-2%
Beech <sup>1</sup>	2-5	3-40	1-2%
Birch	2-3	3-40	1-1.5%

## WOODY BRUSH AND TREES RATE TABLE (Alphabetically by Species)

Weed Species	Rate (QT/A)	Water Volume (GPA)	Hand-Held % Solution
Blackberry	3-4	10-40	1-1.5%
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 0.75 percent 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%
Bracken	2-5	3-40	1-2%
Broom; French, Scotch	--	--	1.5-2%
Buckwheat, California <sup>1,2</sup>	--	--	1-2%
Cascara <sup>1</sup>	2-5	3-40	1-2%
Catsclaw <sup>1</sup>	--	--	1-1.5%
Ceanothus <sup>1</sup>	2-5	3-40	1-2%
Chamise <sup>2</sup>	--	--	1%
Cherry; bitter, black, pin	2-3	3-40	1-1.5%
Coyote brush	--	--	1.5-2%
Apply when at least 50 percent of the new leaves are fully developed.			
Dogwood <sup>1</sup>	2-5	3-40	1-2%
Elderberry	2-3	3-40	1-1.5%
Elm <sup>1</sup>	2-5	3-40	1-2%
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) <sup>1</sup>	2 - 5	3 -40	1-2%
Gorse <sup>1</sup>	2-5	3-40	1-2%
Hasardia <sup>1,2</sup>	--	--	1-2%
Hawthorn	2-3	3-40	1-1.5%
Hazel	2-3	3-40	1-1.5%
Hickory <sup>1</sup>	2-5	3-40	1-2%
Honeysuckle	3-4	3-40	1-1.5%
Hornbeam, American <sup>1</sup>	2-5	3-40	1-2%
Kudzu	4-5	3-40	2%
Repeat applications may be required to achieve control.			
Locust, black <sup>1</sup>	2-4	3-40	1-2%
Madrone resprouts <sup>1</sup>	-	-	2%
Apply to resprouts that are 3 to 6 feet tall. Best results are obtained with spring/early summer treatments.			
Manzanita <sup>1</sup>	2-5	3-40	1-2%
Maple, red	2- 4	3-40	1-1.5%
Apply a 1- to 1.5-percent solution when at least 50 percent 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%
Apply when at least 50 percent of the new leaves are fully developed.			
Monkey flower <sup>1,2</sup>	--	--	1 - 2%
Oak; black,white <sup>1</sup>	2-4	3-40	1 -2%
Oak, post	3-4	3-40	1-1.5%
Oak, northern,			1-1.5%
Apply when at least 50 percent of the new pin leaves are fully developed			

## WOODY BRUSH AND TREES RATE TABLE (Alphabetically by Species)

Weed Species	Rate (QT/A)	Water Volume (GPA)	Hand-Held % Solution
Oak; southern red	2-3	3-40	1-1.5%
Persimmon <sup>1</sup>	2-5	3-40	1-2%
Pine	2-5	3-40	1-2%
Poison ivy/Poison oak	4-5	3-40	2%
Repeat applications may be required to achieve control. Fall treatments must be applied before leaves lose green color.			
Poplar, yellow <sup>1</sup>	2- 5	3-40	1-2%
Redbud, eastern	2- 5	3-40	1-2%
Rose, multiflora	2	3-40	1%
Treatments should be made prior to leaf deterioration by leaf-eating insects.			
Russian olive <sup>1</sup>	2 - 5	3-40	1-2%
Sage, black <sup>1,2</sup>	-	-	1%
Sage, white <sup>1</sup>	2-5	3-40	1-2%
Sage brush, California <sup>2</sup>	-	-	1%
Salmonberry	2-3	3-40	1-1.5%
Salt-cedar	2-5	3-40	1-2%
Sassafras <sup>1</sup>	2-5	3-40	1-2%
Sourwood <sup>1</sup>	2-5	3-40	1-2%
Sumac; poison, smooth, winged <sup>1</sup>	2-4	3-40	1-2%
Sweetgum	2-3	3-40	1-1.5%
Swordfern <sup>1</sup>	2-5	3-40	1-2%
Tallowtree, Chinese <sup>2</sup>	-	-	1%
Tan oak resprouts <sup>1</sup>	-	-	2%
Apply to resprouts that are less than 3 to 6 feet tall. Best results are obtained with fall applications.			
Thimbleberry	2 - 3	3- 40	1-1.5%
Tobacco, tree <sup>1</sup>	-	-	1-2%
Trumpetcreeper	2-3	3- 40	1-1.5%
Vine maple <sup>1</sup>	2-5	3- 40	1-2%
Virginia creeper	2-5	3- 40	1- 2%
Waxmyrtle, Southern <sup>1</sup>	2-5	3- 40	1- 2%
Willow	3-4	3- 40	1-1.5%

<sup>1</sup> Partial Control

<sup>2</sup> Thorough coverage of foliage is necessary for best results.

### INDUSTRIAL, TURF AND ORNAMENTAL SITES

Unless otherwise specified, applications may be made to control any weeds listed in the "WEEDS CONTROLLED" section of this label. Refer to the "APPLICATION EQUIPMENT AND TECHNIQUES" section for detailed instructions on different application methods.

#### Non-crop Areas, Industrial Sites

Use in areas including airports, apartment complexes, commercial sites, Conservation Reserve Program (CRP) areas, ditch banks, driveways, dry ditches, dry canals, fencerows, golf courses, greenhouses, industrial sites, landscape areas, lumber yards, manufacturing sites, municipal sites, natural areas, office complexes, ornamentals, parks, parking areas, pastures, petroleum tank farms and pumping installations, plant nurseries, public areas, railroads, rangeland, rights-of-way, roadsides, shadehouses, sod or turf seed farms, storage areas, sports complexes, substations, turfgrass areas, utility sites, warehouse areas, and wildlife management areas.

### Weed Control, Trim-and-Edge, Bare Ground

This product may be used in non-crop areas. It may be applied with any application equipment described in this label. This product may be used to trim-and-edge around objects in non-crop sites, for spot treatment of unwanted vegetation and to eliminate unwanted weeds growing in established shrub beds or ornamental plantings. This product may be used prior to planting an area to ornamentals, flowers, turfgrass (sod or seed), or prior to laying asphalt or beginning construction projects.

Repeated applications of this product may be used, as weeds emerge, to maintain bare ground.

TANK MIXTURES: This product may be tank mixed with the following products, provided that the specific product is registered for use on such non-crop sites. Refer to these products' labels for approved non-crop sites and application rates.

2,4-D	Goal 2XL	Princep™ 4L
Arsenal™	Karmex™ DF	Princep™ DF
atrazine	Krovar™   DF	Ronstar™ 50WP
Barricade™ 65WG	Landmark II MP	Sahara™
Clarity	Milestone	simazine
Crossbow L	Oust	Surflan™ AS
dicamba	Oust XP	Surflan WDG
diuron	Outrider	Telar™
Endurance™	Pendulum WDG	Transline
Escort™	Pendulum™ 3.3 EC	Vanquish
Gallery 75 DF	pendimethalin	Velpar DF
Garlon 4	Plateau™	Velpar L
Garlon™ 3A	Poast	

This product plus dicamba tank mixtures may not be applied by air in California.

When applied as a tank mixture for bare ground, this product provides control of the emerged annual weeds and control or partial control of emerged perennial weeds, woody brush and trees.

For control or partial control of the following perennial weeds, apply 1 to 2 quarts of this product plus 2 to 4 ounces of Oust or Oust XP per acre.

Bahiagrass	Dock, curly	Poorjoe
Bermudagrass	Dogfennel	Quackgrass
Broomsedge	Fescue, tall	Vaseygrass
Dallisgrass	Johnsongrass	Vervain, blue

### Chemical Mowing - Perennials

This product will suppress perennial grasses listed in this section to serve as a substitute for mowing. Use 8 fluid ounces of this product per acre when treating tall fescue, fine fescue, orchardgrass, quackgrass or reed canarygrass covers. Use 6 fluid ounces of this product per acre when treating Kentucky bluegrass. Apply treatments in 10 to 40 gallons of spray solution per acre.

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

### Chemical Mowing - Annuals

For growth suppression of some annual grasses, such as annual ryegrass, wild barley and wild oats growing in coarse turf on roadsides or other industrial areas, apply 4 to 5 fluid ounces of this product in 10 to 40 gallons of spray solution per acre.

Applications should be made when annual grasses are actively growing and before the seedheads are in the boot stage of development. Treatments may cause injury to the desired grasses.

### Dormant Turfgrass

This product may be used to control or suppress many winter annual weeds and tall fescue for effective release of dormant Bermudagrass and bahiagrass turf. Treat only when turf is dormant and prior to spring greenup.

Apply 8 to 64 fluid ounces of this product per acre. Apply the specified rates in 10 to 40 gallons of water per acre. Use only in areas where Bermudagrass or bahiagrass are desirable ground covers and where some temporary injury or discoloration can be tolerated.

Treatments in excess of 16 fluid ounces per acre may result in injury or delayed greenup in highly maintained areas, such as golf courses and lawns. DO NOT apply tank mixtures of this product plus Oust in highly maintained turfgrass areas. For further uses, refer to the "ROADSIDES" section of this label, which gives rates for dormant Bermudagrass and bahiagrass treatments.

### Actively Growing Bermudagrass

This product may be used to control or partially control many annual and perennial weeds for effective release of actively growing Bermudagrass. DO NOT apply more than 16 fluid ounces of this product per acre in highly maintained turfgrass areas. DO NOT apply tank mixtures of this product plus Oust or Oust XP in highly maintained turfgrass areas. For further uses, refer to the "ROADSIDES" section of this label, which gives rates for actively growing Bermudagrass treatments. Use only in areas where some temporary injury or discoloration can be tolerated.

### Turfgrass Renovation, Seed, or Sod Production

This product controls most existing vegetation prior to renovating turfgrass areas or establishing turfgrass grown for seed or sod. For maximum control of existing vegetation, delay planting or sodding 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 Bermudagrass, summer or fall applications provide the best control. 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.

Hand-held equipment may be used for spot treatment of unwanted vegetation growing in existing turfgrass. Broadcast or hand-held equipment may be used to control sod remnants or other unwanted vegetation after sod is harvested.

Do not feed or graze turfgrass grown for seed or sod production for 8 weeks following application.

PRECAUTIONS, RESTRICTIONS: Do not disturb soil or underground plant parts before treatment. Tillage or renovation techniques such as vertical mowing, coring or slicing should be delayed for 7 days after application to allow translocation into underground plant parts. 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 was greater than 3 quarts per acre, remove domestic livestock before application and wait 8 weeks after application before grazing or harvesting.

### Railroads

All of the methods of application described in the "NON-CROP AREAS AND INDUSTRIAL SITES" section may be utilized along railroads.

### Bare Ground, Ballast and Shoulders, Crossings, Spot Treatment

This product may be used to maintain bare ground on railroad ballast and shoulders. Repeat applications of this product may be used, as weeds emerge, to maintain bare ground. This product may be used to control tall-growing weeds to improve line-of-sight at railroad crossings and reduce the need for mowing along rights-of-way. For crossing applications, up to 80 gallons of spray solution per acre may be used.

TANK MIXTURES: This product may be tank mixed with the following products for ballast, shoulder, spot, bare ground and crossing treatments, provided that the specific product is registered for use on such non-crop sites:

Arsenal	Hyvar™ X	Spike™ 80 DF
atrazine	Hyvar X-L	Telar DF
dicamba	Krovar   DF	Transline
diuron	Oust	Vanquish
Escort	Oust XP	Velpar DF
Escort XP	Outrider	Velpar L
Garlon 3A	Sahara DG	2,4-D
Garlon 4	simazine	

### Brush Control

This product may be used to control woody brush and trees on railroad rights-of-way. Apply 4 to 10 quarts of this product per acre as a broadcast spray, using boom-type or boomless nozzles. Up to 80 gallons of spray solution per acre may be used. Apply a 0.75- to 2-percent solution of this product when using high-volume spray-to-wet applications. Apply a 5- to 10-percent solution of this product when using low volume directed sprays for spot treatment.

**TANK MIXTURES:** This product may be mixed with the products listed above in this section for enhanced control of woody brush and trees along railroads, provided that the specific product is registered for use on such non-crop sites.

### Bermudagrass Release

This product may be used to control or partially control many annual and perennial weeds for effective release of actively growing Bermudagrass. Apply 1 to 3 pints of this product in up to 80 gallons of spray solution per acre. Use the lower rate when treating annual weeds below 6 inches in height (or runner length). Use the higher rate as weeds increase in size or as they approach flower or seedhead formation. These rates will also provide partial control of the following perennial species:

Bahiagrass	Fescue, tall	Trumpetcreeper
Bluestem, silver	Johnsongrass	Vaseygrass

This product may be tank-mixed with Oust or Oust XP. If tank-mixed, use no more than 1 to 3 pints of this product with 1 to 2 ounces of Oust or Oust XP per acre. Use the lower rates of each product to control annual weeds less than 6 inches in height (or runner length) that are listed in this label and the Oust or Oust XP label. Use the higher rates as annual weeds increase in size and approach the flower or seedhead stages. These rates will also provide partial control of the following perennial weeds:

Bahiagrass	Dewberry	Poorjoe
Blackberry	Dock, curly	Rasperry
Bluestem, silver	Dogfennel	Trumpetcreeper
Broomsedge	Fescue, tall	Vaseygrass
Dallisgrass	Johnsongrass	Vervain, blue

Use only on well-established Bermudagrass. Bermudagrass 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 occur.

### Roadsides

All of the methods of application described in the "NON-CROP AREAS AND INDUSTRIAL SITES" section may be utilized along roadsides.

### Shoulder Treatments

This product may be used on road shoulders. It may be applied with boom sprayers, shielded boom sprayers, high-volume off-center nozzles, hand-held equipment, and similar equipment.

### Guardrails, Other Obstacles to Mowing

This product may be used to control weeds growing under guardrails and around signposts and other objects along the roadside.

### Spot Treatment

This product may be used as a spot treatment to control unwanted vegetation growing along roadsides.

**TANK MIXTURES:** This product may be tank-mixed with the following products for shoulder, guardrail, spot and bare ground treatments:

atrazine	Krovair I DF	Princep DF
Clarity	Landmark II MP	Princep 4L
Crossbow L	Landmark MP	Ronstar 50WP
dicamba	Landmark XP	Sahara
diuron	Oust	simazine
Endurance	Outrider	Surflan
Escort	Pendulum 3.3 EC	Telar
Escort XP	Pendulum WDG	Vanquish
Gallery 75DF	Plateau	2,4-D

See the "MIXING" section of this label for instructions for tank mixing.

### Release of Bermudagrass or Bahiagrass Dormant Applications

This product may be used to control or partially control many winter annual weeds and tall fescue for effective release of dormant Bermudagrass or bahiagrass. Treat only when turf is dormant and prior to spring greenup.

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 at or beyond the 4- to 6-leaf stage.

**TANK MIXTURES:** This product may also be tank-mixed with Outrider, Oust or Oust XP for residual control. These tank mixtures may delay greenup.

Apply 8 to 64 fluid ounces of this product in a tank mix with 0.75 to 1.3 ounces of Outrider per acre.

Read and follow all label directions for Outrider.

Apply 8 to 64 fluid ounces of this product per acre alone or in a tank mixture with 0.25 to 1 ounce per acre of Oust or Oust XP in 10 to 40 gallons of water per acre. Use only in areas where Bermudagrass or bahiagrass are desirable ground covers and where some temporary injury or discoloration can be tolerated. To avoid delays in greenup and minimize injury, add no more than 1 ounce of Oust or Oust XP per acre on Bermudagrass and no more than 0.5 ounce of Oust or Oust XP per acre on bahiagrass and avoid treatments when these grasses are in a semi-dormant condition.

### Actively Growing Bermudagrass

This product may be used to control or partially control many annual and perennial weeds for effective release of actively growing Bermudagrass. Apply 1 to 3 pints of this product in 10 to 40 gallons of water per acre. Use the lower rate when treating annual weeds below 6 inches in height (or runner length). Use the higher rate as weeds increase in size or as they approach flower or seedhead formation. These rates will also provide partial control of the following perennial species:

Bahiagrass	Fescue, tall	Trumpetcreeper
Bluestem, silver	Johnsongrass	Vaseygrass

**TANK MIXTURES:** This product may be tank-mixed with Outrider for control or partial control of Johnsongrass and other weeds listed in the Outrider label. Use 9 to 32 fluid ounces of this product with 0.75 to 1.3 ounces of Outrider per acre. Use the higher rates of both products for control of perennial weeds or annual weeds greater than 6 inches in height.

This product may be tank-mixed with Oust or Oust XP. If tank-mixed, use no more than 1 to 2 pints of this product with 1 to 2 ounces of Oust or Oust XP per acre. Use the lower rates of each product to control annual weeds less than 6 inches in height (or runner length) that are listed in this label and the Oust or Oust XP label. Use the higher rates as annual weeds increase in size and approach the flower or seedhead stages. These rates will also provide partial control of the following perennial weeds:

Bahiagrass	Dock, curly	Poorjoe	Arsenal Applicators Concentrate	
Bluestem, silver	Dogfennel	Trumpetcreeper	Chopper	Landmark XP
Broomsedge	Fescue, tall	Vaseygrass	Escort or Escort XP	Oust
Dallisgrass	Johnsongrass	Vervain, blue	Garlon 3A	Oust XP
			Garlon 4A	Westar

Use only on well-established Bermudagrass. Bermudagrass injury may result from the treatment, but regrowth will occur under most conditions. Repeat applications of the tank mix in the same season are not specified, since severe injury may occur.

#### **Actively Growing Bahiagrass**

For suppression of vegetative growth and seedhead inhibition of bahiagrass for approximately 45 days, apply 6 fluid ounces of this product in 10 to 40 gallons of water per acre. Apply 1 to 2 weeks after full greenup 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.

**TANK MIXTURES:** This product may be tank-mixed with Outrider for control or partial control of Johnsongrass and other weeds listed in the Outrider label. Use 6 fluid ounces of this product with 0.75 to 2 ounces of Outrider per acre. Use the higher rates of both products for control of perennial weeds or annual weeds greater than 6 inches in height. Use only on well-established bahiagrass.

A tank mixture of this product plus Oust or Oust XP may be used. Apply 6 fluid ounces of this product plus 0.25 ounce of Oust or Oust XP per acre 1 to 2 weeks following an initial spring mowing. Make only one application per year.

### **Forestry Site Preparation**

This product is specified for the control or partial control of woody brush, trees and herbaceous weeds in forestry. This product is also specified for use in preparing or establishing wildlife openings within these sites and maintaining logging roads.

This product is specified for use in site preparation prior to planting any tree species, including Christmas trees, eucalyptus, hybrid tree cultivars and silvicultural nursery sites.

Use higher rates of this product within the specified range for control or partial control of woody brush, trees and hard-to-control perennial herbaceous weeds. For best results, apply to actively growing woody brush and trees after full leaf expansion and before fall color and leaf drop. Increase rates within the specified range for control of perennial herbaceous weeds any time after emergence and before seedheads, flowers or berries appear.

Use the lower rates of this product within the specified range for control of annual herbaceous weeds and actively growing perennial herbaceous weeds after seedheads, flowers or berries appear. Apply to the foliage of actively growing annual herbaceous weeds any time after emergence.

**TANK MIXTURES:** Tank mixtures of this product may be used to increase the spectrum of vegetation controlled. When tank mixing, read and carefully observe the label claims, cautionary statements and all information on the labels of all products used. Use according to the most restrictive precautionary statements for each product in the mixture.

**NOTE:** For forestry site preparation, make sure the tank-mix product is approved for use prior to planting the desired species. Observe planting interval restrictions. Any specified rate of this product may be used in a tank mix with the following products for forestry site preparation.

For control of herbaceous weeds, use the lower specified tank mixture rates. For control of dense stands or tough-to-control woody brush and trees, use the higher specified rates.

Do not apply this product as an over-the-top broadcast spray for forestry conifer or hardwood release, unless otherwise specified on this label or in separate supplemental labeling for this product.

### **Pastures**

This product may be applied to any pasture grass (Gramineae family), including bahiagrass, Bermudagrass, bluegrass, brome, fescue, guineagrass, kikuyugrass, orchardgrass, pangola grass, ryegrass, timothy, and wheatgrass. Application can be made as a spot treatment, wiper application, preplant, preemergence, pasture renovation, or postemergent broadcast.

#### **Preplant, Preemergence, Pasture Renovation**

This product may be applied for weed control prior to planting or emergence of forage grasses. This product may also be applied to control perennial pasture species listed on this label prior to replanting.

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.

#### **Spot Treatment, Wiper Application**

This product may be applied in pastures as a spot treatment, or over the top of desirable grasses using wiper applicators to control tall weeds. Applications may be repeated in the same area at 30-day intervals.

For spot treatments or wiper application methods using rates of 3 quarts of this product 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 of this product per acre, no more than 10 percent of the total pasture may be treated at any one time. To achieve maximum performance, remove domestic livestock before application and wait 7 days after application before grazing livestock or harvesting for feed.

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

This product may be applied to pastures 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.

Some stunting of perennial grasses will occur if broadcast applications are made when plants are not dormant. Use of higher application rates will cause stand reductions. No waiting period is required between application and grazing or harvesting for feed. Do not apply more than 3 quarts of this product per acre per year onto pasture grasses except for renovation uses as described previously in this section.

### **Rangelands**

This product will control or suppress many annual weeds growing in perennial cool and warm-season grass rangelands, pastures, and industrial sites. Preventing weed seed production is critical to the successful control of annual grassy weeds invading these perennial grass sites. 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.

**Bromus:** This product may be used to control or suppress downy brome (*Bromus tectorum*), Japanese brome (*Bromus japonicus*), soft chess (*Bromus molis*), cheatgrass (*Bromus secalinus*), cereal rye and jointed goatgrass found in rangelands pastures and industrial sites. Apply 8 to 16 fluid ounces of this product per acre on a broadcast basis.

For best results, treatment should coincide with early seedhead emergence of the most mature plants. Delaying the application until this growth stage will maximize the emergence of other weedy grass flushes. Applications should be made to the same site each year until seed banks are depleted and the desirable perennial grasses can become reestablished on the site.

**Medusahead:** To control or suppress medusahead, apply 16 fluid ounces of this product per acre at the 3-leaf stage when plants are actively growing. Delaying applications beyond this stage will result in reduced or unacceptable control. Repeat applications in subsequent years may be necessary to eliminate the seedbank before reestablishing desirable perennial grasses. Applications may be made in the fall or spring.

Applications may be made using ground or aerial equipment. Aerial applications for these uses may be made using fixed wing or helicopter equipment. For aerial applications, apply in 2 to 10 gallons of water per acre. For applications using ground equipment, apply in 10 to 20 gallons of water per acre.

#### **Spot Treatment, Wiper Application**

This product may be applied in rangeland, pastures or industrial sites as a spot treatment, or over the top of desirable grasses using wiper applicators to control tall weeds. Applications may be repeated in the same area at 30-day intervals.

For spot treatments or wiper application methods using rates of 3 quarts of this product per acre or less, the entire site or any portion of it may be treated. When spot treatments or wiper applications are made using rates above 3 quarts of this product per acre, no more than 10 percent of the total site may be treated at any one time. To achieve maximum performance, remove domestic livestock before application and wait 7 days after application before grazing livestock or harvesting for feed.

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

This product may be used for renovation (rotating out of CRP), site preparation, postemergence weed control in dormant CRP grasses, or wiper application on CRP land.

#### **Renovation (Rotating out of CRP), Site Preparation**

This product may be used to prepare CRP land for crop production. Refer to Federal, State or local use guides for CRP renovation recommendations.

#### **Postemergence Weed Control in Dormant CRP Grasses, Wiper Application**

Apply this product to suppress competitive growth and seed production of undesirable vegetation on CRP land. Applications may be made using wiper applicators to control tall weeds, or as a broadcast or spot treatment to dormant CRP grasses. For selective applications with broadcast spray equipment, apply 8 to 12 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 perennial grasses have reached dormancy.

Some stunting of CRP perennial grasses will occur if broadcast applications are made when plants are not dormant. No waiting period is required between ap-

plication and grazing or harvesting for feed. Do not apply more than 3 quarts per acre per year onto CRP land.

### **Habitat Management**

#### **Habitat Restoration and Management**

This product may be used to control exotic and other undesirable vegetation in habitat management and natural areas, including rangeland and wildlife refuges. 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. Spot treatments can be made to selectively remove unwanted plants for habitat management and enhancement.

#### **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 application before tillage to allow translocation into underground plant parts.

#### **Hollow Stem Injection**

This product may be applied through hand-held injection devices that deliver specified amounts of this product into targeted hollow-stem plants growing in any non-crop site specified on this label.

For control of the following hollow-stem plants, follow the use instructions below:

##### **Japanese Knotweed, *Polygonum cuspidatum***

Inject 5 mL per stem of this product between second and third internode.

##### **Bohemian Knotweed, *Polygonum bohemicum***

Inject 5 mL per stem of this product between the second and third internode.

##### **Giant Hogweed, *Heracleum mantegazzianum***

Inject one leaf cane per plant 12 inches above the root crown with 5 mL of a 5% v/v solution of this product.

##### **Poison Hemlock, *Conium maculatum***

Inject one leaf cane per plant 10 to 12 inches above the root crown with 5 mL of a 5% v/v solution of this product.

##### **Field horsetail, *Equisetum arvense***

Inject one segment above the root crown with 0.5 mL per stem of this product. Use a small syringe that calibrates to this rate.

##### **Canada Thistle, *Cirsium arvense***

Cut 8 to 9 of the tallest plants at bud stage in a clump with clippers. Use a cavity needle that is pushed into the stem center and then slowly removed as 0.5 mL per stem of this product is injected into the stem.

Note: The combined total for all treatments must not exceed 10.6 quarts of this product per acre. At 5 mL per stem, 7 quarts should treat approximately 1300 stems per acre.

### **Ornamentals, Nurseries (Plants and Trees), and Christmas Trees**

This product may be used for weed control prior to planting or around established ornamentals, or any woody tree, shrub, or vine species, including arborvitae, azalea, boxwood, crabapple, eucalyptus, euonymus, fir, Douglas fir, joboba, hollies, lilac, magnolia, maple, oak, poplar, privet, pine, spruce or yew, in any production site.

UNLESS OTHERWISE DIRECTED, THIS PRODUCT IS NOT SPECIFIED FOR USE AS AN OVER-THE-TOP BROADCAST SPRAY IN ORNAMENTALS AND CHRISTMAS TREES. Care must be taken to avoid contact of spray, drift or mist with foliage or green bark of desirable species.

This product may be used to control weeds growing in and around greenhouses

and shadehouses. Desirable vegetation must not be present during application and air circulation fans must be turned off.

**TYPES OF APPLICATIONS:** Site Preparation, Post-directed, Trim-and-edge, Wiper Application

#### **Site Preparation**

This product may be used prior to planting any tree, shrub, or vine in an ornamental, nursery, or production setting, including Christmas tree species.

#### **Post-directed, Trim-and-edge**

This product may be used as a post-directed spray around established woody species, or to trim and edge around trees, buildings, sidewalks and roads, potted plants and other objects in a production setting.

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

#### **Wiper Application**

This product may be used through wick or other suitable wiper applicators to control or partially control undesirable vegetation around established trees, shrubs, or vines. See the "SELECTIVE EQUIPMENT" section of this label for further information about the proper use of wiper applicators.

### **Silviculture Sites and Rights-of-Way**

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

When applied as directed for "NONCROP USES" under conditions described, this product controls undesirable vegetation listed on this label.

For specific rates of application and instructions for control of various brush, annual and perennial weeds, see the "WEEDS CONTROLLED" section of this label.

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 silviculture site preparation, and rights-of-way treatments. See the "APPLICATION EQUIPMENT and TECHNIQUES" part of the "MIXING, ADDITIVES and APPLICATION INSTRUCTIONS" 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.**

**Site Preparation:** Following preplant applications of this product, any silvicultural species may be planted.

**Postdirected Spray:** In established silvicultural sites, use as 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.

### **Cut Stumps**

Cut stump treatments may be made on any site listed on this label. This product will control many types of woody brush and tree species, some of which are listed below. Apply this product using suitable equipment to ensure coverage of the entire cambium. Cut trees or sprouts 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, applications should be made during periods of active growth and full leaf expansion.

Alder	Pepper, Brazilian	Sweetgum
Eucalyptus	Pine, Austrian	Tan oak
Madrone	Reed, giant	Willow
Oak	Saltcedar	

**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.

### **Injection and Frill (Woody Brush and Trees)**

This product may be used to control woody brush and trees by injection or frill applications. Apply this product using suitable equipment that must penetrate into the living tissue. Apply the equivalent of 0.04 fluid ounce (1 mL) of this product per each 2 to 3 inches of trunk diameter at breast height (DBH). This is best achieved by applying a 50- to 100-percent concentration of this product 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 frilled or cut areas in species that exude sap freely. In species such as this, make the frill or cuts at an oblique angle to produce a cupping effect and use a 100-percent concentration of this product. For best results, application should be made during periods of active growth and after full leaf expansion. This product will control many species, some of which are listed below:

#### **Control**

Oak  
Poplar  
Sweetgum  
Sycamore

#### **Partial Control**

Black gum  
Dogwood  
Hickory  
Maple, red

### **Utility Sites**

In utilities, this product is specified for use along electrical power, pipeline and telephone rights-of-way, and in other sites associated with these rights-of-way, such as substations, roadsides, railroads or similar rights-of-way that run in conjunction with utilities.

This product may be used in utility sites and substations for bare ground, trim-and-edge around objects, spot treatment of unwanted vegetation and to eliminate unwanted weeds growing in established shrub beds or ornamental plantings. This product may be used prior to planting a utility site to ornamentals, flowers, turfgrass (sod or seed), or beginning construction projects.

Repeated applications of this product may be used, as weeds emerge, to maintain bare ground.

This product is also specified for use in preparing or establishing wildlife openings within these sites, maintaining access roads and for side trimming along utility rights-of-way.

For control of herbaceous weeds, use the lower specified tank mixture rates. For control of dense stands or tough-to-control woody brush and trees, use the higher specified rates.

#### **Bare Ground, Trim-and-Edge**

This product may be used in utility sites and substations for bare ground, trim-and-edge around objects, spot treatment of unwanted vegetation and to eliminate unwanted weeds growing in established shrub beds or ornamental plantings. This product may be used prior to planting a utility site to ornamentals, flowers, turfgrass (sod or seed), or beginning construction projects.

Repeated applications of this product may be used, as weeds emerge, to maintain bare ground.

**TANK MIXTURES:** This product may be tank mixed with the following products provided that the specific product used is registered for application on these sites.

Refer to the individual product's labels for approved sites and application rates.

2,4-D	Garlon 4	Saha
Arsenal	Krenite	simazine
atrazine	Krovax I DF	Surflan AS
Barricade 65WG	Oust	Surflan WDG
dicamba	Oust XP	Telar DF
diuron	Outrider	Transline
Endurance	pendimethalin	Vanquish
Escort	Plataeu	Velpar DF
Escort XP	Princep	Velpar L
Garlon 3A	Ronstar 50WP	

Ensure that Garlon 3A is thoroughly mixed with water according to label directions before adding this product. Have spray mixture agitating at the time this product is added to avoid spray incompatibility problems. For side trimming treatments, it is specified that this product be used alone or in a tank mixture with Garlon 4.

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

This product may be used in grass seed and sod production for preplant, at-planting, preemergence, removal of established stands, renovation, site preparation, shielded spraying, wiper application, spot treatment, and creating rows in annual ryegrass.

#### **Preplant, Preemergence, At-Planting, Removal of Established Stands, Renovation, Site Preparation**

This product controls most existing vegetation for purposes of renovating turf or forage grass seed areas or for establishing turfgrass grown for sod. It may also be used to destroy remaining undesired grass vegetation when production fields are converted to alternate species or crops. Make applications before, during, or after planting, or for renovation purposes. 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 herbicide 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. Application rates up to 5 quarts per acre may be used to totally remove established stands of tough to kill grass species.

Do not disturb soil or underground plant parts before treatment. Tillage or renovation techniques such as vertical mowing, coring or slicing should be delayed for 7 days after application to allow proper translocation into underground plant parts. 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. Applications must be made prior to crop emergence in order to avoid crop injury.

#### **Shielded Sprayers**

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 aids in shielded sprayer applications. Best results are obtained when the grass seed crop is small enough to easily pass by the protective shields.

Contact of this product in any manner with desirable vegetation may result in discoloration, stunting or destruction. Such damage shall be the sole responsibility of the applicator.

#### **Wiper Application**

This product may be applied over the top of desirable grasses using wiper applicators for the control of tall weeds.

Contact of this product in any manner with desirable vegetation may result in discoloration, stunting or destruction. Such damage shall be the sole responsibility of the applicator.

#### **Spot Treatment**

Apply a 1.5-percent solution of this product using hand-held spray equipment to control weeds within established vegetation prior to heading of grasses grown for seed. Hand-held equipment may be used to control sod remnants or other unwanted vegetation after sod is harvested.

The crop sprayed in the treated area will be killed. Take care not to spray or allow spray to drift outside the target area in order to avoid unwanted crop destruction.

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

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

Set nozzle heights to allow the establishment of the desired row spacing. Use of low-pressure nozzles, or drop nozzles designed to target the application over a narrow band are specified.

Take care not to spray or allow spray to drift outside target area in order to avoid unwanted crop destruction.

**Grower assumes all responsibility for crop losses resulting from misapplication of this product.**

### **WEEDS CONTROLLED**

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.

Reduced results may occur when treating weeds heavily covered with dust. For weeds that have been mowed, grazed or cut, allow regrowth to occur prior to treatment.

Refer to the following label sections for specified rates for the control of annual and perennial weeds and woody brush and trees. For difficult to control perennial weeds and woody brush and trees, where plants are growing under stressed conditions, or where infestations are dense, this product may be used at 5 to 10 quarts per acre for enhanced results.

### **Annual Weeds**

Use 1 quart per acre if weeds are less than 6 inches in height or runner length and 1.5 quarts to 4 quarts per acre if weeds are over 6 inches in height or runner length or when weeds are growing under stressed conditions. Use the higher rate for tough-to-control species regardless of the weed size at application. Treat tough-to-control weeds early when they are relatively small. This product may be tank mixed provided the tank-mix product is registered for use on the target site. Refer to the individual product labels for approved sites and application rates. For spray-to-wet applications, apply a 0.5-percent solution of this product to weeds less than 6 inches in height or runner length. For annual weeds over 6 inches tall, or for smaller weeds growing under stressed conditions, use a 1- to 2-percent solution. Use the higher rate for tough-to-control species or for weeds over 24 inches tall.

Apply prior to seedhead formation in grass or bud formation in broadleaf weeds. For low volume directed spray applications, use a 4- to 7-percent solution of

this product. Spray coverage should be uniform with at least 50 percent of the foliage contacted. Coverage of the top one half of the plant is important for best results. To ensure adequate spray coverage, spray both sides of large or tall weeds when foliage is thick and dense or where there are multiple spouts.

#### WEED SPECIES

Anoda, spurred  
Barley\*  
Barnyardgrass\*  
Bittercress\*  
Bassia, fivehook  
Black nightshade\*  
Bluegrass, annual\*  
Bluegrass, bulbous\*  
Brome, downy\*  
Brome, Japanese\*  
Browntop panicum\*  
Buttercup\*  
Carolina foxtail\*  
Carolina geranium  
Castor bean  
Cheatgrass\*  
Cheeseweed (*Malva parviflora*)  
Chervil\*  
Chickweed\*  
Cocklebur\*  
Copperleaf, hophornbean  
Corn\*  
Corn speedwell\*  
Crabgrass\*  
Dwarf dandelion\*  
Eastern manna grass\*  
Eclipta\*  
Fall panicum\*  
Falsedandelion\*  
Falseflax, smallseed\*  
Fiddleneck  
Field pennycress\*  
Filaree  
Fleabane, annual\*  
Fleabane, hairy (*Conyza bonariensis*)\*  
Fleabane, rough\*  
Florida pusley  
Foxtail\*  
Goatgrass, jointed\*  
Goosegrass  
Grain sorghum (milo)\*  
Groundsel, common\*  
Hemp sesbania  
Henbit  
Horseweed/Marestail (*Conyza canadensis*)  
Itchgrass\*  
Johnsongrass, seedling  
Junglerice  
Knotweed

Kochia  
Lambquarters\*  
Little barley\*  
London rocket\*  
Mayweed  
Medusahead\*  
Morningglory (*Ipomoea spp*)  
Mustard, blue\*  
Mustard, tansy\*  
Mustard, tumble\*  
Mustard, wild\*  
Oats  
Pigweed\*  
Plains/Tickseed coreopsis\*  
Prickly lettuce\*  
Puncturevine  
Purslane, common  
Ragweed, common\*  
Ragweed, giant  
Red rice  
Russian thistle  
Rye\*  
Ryegrass\*  
Sandbur, field\*  
Shattercane\*  
Shepherdspurse\*  
Sicklepod  
Signalgrass, broadleaf\*  
Smartweed, ladysthumb\*  
Smartweed, Pennsylvania\*  
Sowthistle, annual  
Spanishneedles  
Speedwell, purslane\*  
Sprangletop\*  
Spurge, annual  
Spurge, prostrate\*  
Spurge, spotted\*  
Spurry, umbrella\*  
Starthistle, yellow  
Stinkgrass\*  
Sunflower\*  
Teaweed/Prickly sida  
Texas panicum\*  
Velvetleaf  
Virginia copperleaf  
Virginia pepperweed\*  
Wheat\*  
Wild oats\*  
Witchgrass\*  
Woolly cupgrass\*  
Yellow rocket

\* When using field broadcast equipment (aerial applications or boom sprayers using flat-fan nozzles) these species will be controlled or partially controlled using 1 pint of this product per acre. Applications must be made using 3 to 10 gallons of carrier volume per acre. Use nozzles that ensure thorough coverage of foliage and treat when weeds are in an early growth stage.

#### Perennial Weeds

Best results are obtained when perennial weeds are treated after they reach the reproductive stage of growth (seedhead initiation in grasses and bud formation in broadleaves). For non-flowering plants, best results are obtained when the plants reach a mature stage of growth. In many situations, treatments are required prior to these growth stages. Under these conditions, use the higher application rate within the specified range.

Ensure thorough coverage when using spray-to-wet treatments with hand-held equipment. For best results, use a 1.5-percent solution on harder-to-control perennials such as Bermudagrass, dock, field bindweed, hemp dogbane, milkweed and Canada thistle.

For low volume directed spray applications, use a 5- to 10-percent solution of this product. Spray coverage should be uniform with at least 50 percent of the foliage contacted. Coverage of the top one half of the plant is important for best results. To ensure adequate spray coverage, spray both sides of large or tall weeds when foliage is thick and dense or where there are multiple sprouts.

Allow 7 or more days after application before tillage.

WEED SPECIES	Rate (QT/A)	Hand-Held % Solution
Alfalfa*	1	2
Alligatorweed*	4	1.5
Anise (fennel)	2-4	1-2
Bahiagrass	3-5	2
Beachgrass, European ( <i>Ammophila arenas</i> )	—	5
Bentgrass*	1.5	2
Bermudagrass	5	2
Bermudagrass, water (knotgrass)	1.5	2
Bindweed, field	4-5	2
Bluegrass, Kentucky	2	2
Blueweed, Texas	4-5	2
Brackenfern	3 - 4	1-1.5
Bromegrass, smooth	2	2
Bursage, woolly-leaf	—	2
Canarygrass, reed	2-3	2
Cattail	3-5	2
Clover; red, white	3-5	2
Cogongrass	3-5	2
Dallisgrass	3-5	2
Dandelion	3-5	2
Dock, curly	3-5	2
Dogbane, hemp	4	2
Fescue (except tall)	3-5	2
Fescue, tall	1-3	2
German ivy	2-4	1-2
Guineagrass	3	1
Horsenettle	3-5	2
Horseardish	4	2
Iceplant	2	1.5 - 2
Jerusalem artichoke	3-5	2

<b>WEED SPECIES</b>	<b>Rate (QT/A)</b>	<b>Hand-Held % Solution</b>
Johnsongrass	2-3	1
Kikuyugrass	2-3	2
Knapweed	4	2
Lantana	—	1-1.25
Lespedeza	3-5	2
Milkweed, common	3	2
Muhly, wirestem	2	2
Mullein, common	3-5	2
Napiergrass	3-5	2
Nightshade, silverleaf	2	2
Nutsedge; purple, yellow	3	1-2
Orchardgrass	2	2
Pampasgrass	3-5	1.5-2
Paragrass	3-5	2
Pepperweed, perennial	4	2
Phragmites*	3-5	1-2
Poison hemlock	2-4	1-2
Quackgrass	2-3	2
Redvine*	2	2
Reed, giant	4-5	2
Ryegrass, perennial	2-3	1
Smartweed, swamp	3-5	2
Spurge, leafy*	-	2
Sweet potato, wild*	-	2
Thistle, artichoke	2-3	1-2
Thistle, Canada	2-3	2
Timothy	2-3	2
Torpedograss*	4-5	2
Trumpet creeper*	2-3	2
Vaseygrass	3-5	2
Velvetgrass	3-5	2
Wheatgrass, western	2-3	2

\*Partial control

### Woody Brush and Trees

Apply this product after full leaf expansion, unless otherwise directed. Use the 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.

For best results when using hand-held equipment, use a 1.5-percent solution on harder-to-control woody brush and trees. For low volume directed-spray applications, apply a 5- to 10-percent solution of this product. Spray coverage should be uniform with at least 50-percent of the foliage contacted. Coverage of the top one-half of the plant is important for best results. To ensure adequate spray coverage, spray both sides of large or tall woody brush and trees, when foliage is thick and dense, or where there are multiple spouts.

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.

<b>WEED SPECIES</b>	<b>Broadcast Rate (QT/A)</b>	<b>Hand-Held Spray-to-Wet % Solution</b>
Alder	3-4	1-1.5
Ash*	2-5	1-2
Aspen, quaking	2-3	1-1.5
Bearclover (Bearnat)*	2-5	1-2
Beech*	2-5	1-2
Birch	2	1
Blackberry	3-4	1-1.5
Blackgum	2-5	1-2
Bracken	2-5	1-2
Broom; French, Scotch	2-5	1.5-2
Buckwheat, California*	2-4	1-2
Cascara*	2-5	1-2
Catsclaw*	-	1-1.5
Ceanothus*	2-5	1-2
Chamise*	2-5	1
Cherry; bitter, black, pin	2-3	1-1.5
Coyote brush	3-4	1.5-2
Deerweed	2-5	1
Dogwood*	2-5	1-2
Elderberry	2	1
Elm*	2-5	1-2
Eucalyptus	-	2
Gorse*	2-5	1-2
Hasardia*	2-4	1-2
Hawthorn	2-3	1-1.5
Hazel	2	1
Hickory*	2-5	1-2
Honeysuckle	3-4	1-1.5
Hornbeam, American*	2-5	1-2
Kudzu	4	2
Locust, black*	2-4	1-2
Madrone resprouts*	-	2
Manzanita*	2-5	1-2
Maple, red	2-4	1-1.5
Maple, sugar	—	1-1.5
Monkey flower*	2-4	1-2
Oak; black, white*	2-4	1-2
Oak, post	3-4	1-1.5
Oak; northern, pin	2-4	1-1.5
Oak, Scrub*	2-4	1-1.5
Oak; southern red	2-3	1-1.5
Peppertree, Brazilian (Florida holly)*	2-5	1-2
Persimmon*	2-5	1-2
Pine	2-5	1-2
Poison ivy	4-5	2
Poison oak	4-5	2
Poplar, yellow*	2-5	1-2
Redbud, eastern	2-5	1-2
Rose, multiflora	2	1
Russian olive*	2-5	1-2

<b>WEED SPECIES</b>	<b>Broadcast Rate (QT/A)</b>	<b>Hand-Held Spray-to-Wet % Solution</b>
Sage, black	2-4	1
Sage, white*	2-4	1-2
Sage brush, California	2-4	1
Salmonberry	2	1
Saltcedar*	2-5	1-2
Sassafraz*	2-5	1-2
Sourwood*	2-5	1-2
Sumac; laurel, poison, smooth, sugarbush, winged*	2-4	1-2
Sweetgum	2-3	1-1.5
Swordfern*	2-5	1-2
Tallowtree, Chinese	-	1
Tan oak resprouts*	-	2
Thimbleberry	2	1
Tobacco, tree*	2-4	1-2
Toyon*	-	2
Trumpetcreeper	2-3	1-1.5
Vine maple*	2-5	1-2
Virginia creeper	2-5	1-2
Waxmyrtle, southern*	2-5	1-2
Willow	3	1
Yerbasenta*	-	2

\*Partial control

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TACOMA AG, LLC  
P.O. Box 14073  
Durham, NC 27709