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U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Pesticide Programs  
Registration Division (H7505C)  
401 "M" St., S.W.  
Washington, D.C. 20460

EPA Reg. Number:

71714-1

Date of Issuance:

DEC - 8 1998

**NOTICE OF PESTICIDE:**

- Registration
- Reregistration

(under FIFRA, as amended)

Term of Issuance:

Conditional

Name of Pesticide Product:

Roundup Ultra

Name and Address of Registrant (include ZIP Code):

Dilbeck Fertilizer  
P.O. Box 258  
Ralston, OK 74650

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

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

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

This product is conditionally registered in accordance with FIFRA section 3(c)(7)(A) provided that you:

1. Submit/cite all data required for registration/reregistration of your product under FIFRA section 3(c)(5) or 4(a) when the Agency requires all registrants of similar products to submit such data.
2. Make the labeling changes listed below before you release the product for shipment:
  - a. Add the phrase "EPA Registration No. 71714-1".
  - b. All reference to Monsanto's name, address, and registration number must be deleted from both the label booklet and package label and replaced with your company name, address, and registration number.
3. Submit five (5) copies of your final printed labeling before you release the product for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of labeling is enclosed for your records.

Signature of Approving Official:

Date:

12-8-98

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# Roundup ULTRA

Herbicide of Monsanto



**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.**

Carefully follow detailed instructions in label booklet.

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

Read "LIMIT OF WARRANTY AND LIABILITY," which appears in the label booklet, before buying or using. If terms are not acceptable, return at once unopened.

The contents of this container may not be REFORMULATED, nor, except in accordance with the Monsanto Repackaging Agreement, REPACKAGED.

### PRECAUTIONARY STATEMENTS

#### Hazards to Humans and Domestic Animals

Keep out of reach of children.

### **CAUTION!**

**CAUSES EYE IRRITATION.**

Avoid contact with eyes or clothing.

**FIRST AID: IF IN EYES,** flush with plenty of water. Get medical attention if irritation persists.

**DOMESTIC ANIMALS:** This product is considered to be relatively nontoxic 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.

#### Personal Protective Equipment (PPE)

Applicators and other handlers must wear long-sleeved shirt and long pants, shoes plus socks. Follow manufacturer's instructions for cleaning/maintaining PPE (Personal Protective Equipment). If no such instructions for washables, 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.

In case of an emergency involving this product, Call Collect, day or night, (314) 694-4000.

**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 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. 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. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

**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 to prevent transfer of this product to desirable vegetation.

**Storage and Disposal**

Do not contaminate water, foodstuffs, feed or seed by storage or disposal.

**DISPOSAL:** Wastes of this pesticide may cause eye and skin irritation and may be dangerous. Improper disposal of excess pesticide, spray mixtures, or rinsate is a violation of Federal law. If these wastes cannot be disposed of according to label use instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Emptied container retains vapor and product residue. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed.

Do not reuse this container, except for refill in accordance with a valid Monsanto Repackaging or Toll Repackaging Agreement. If not refilled or returned to an authorized repackaging facility, triple rinse container, then puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

(See label booklet for Complete Directions for Use)

ACTIVE INGREDIENT:  
\*Glyphosate, N-(phosphonomethyl)glycine, in the form of its isopropylamine salt . . . . . 41.0%  
INERT INGREDIENTS: . . . . . 59.0%  
100.0%

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

This product is protected by U.S. Patent No. 4,405,531. Other patents pending. No license granted under any non-U.S. patent(s).

For product information or assistance in using this product, Call toll-free, 1-800-332-3111.

\*Roundup is a registered trademark of Monsanto Company  
©MONSANTO COMPANY 1997

 MONSANTO COMPANY  
ST. LOUIS, MISSOURI 63167 U.S.A.  
EPA Reg. No. 524-475 21137V3-7/53-1

PLACE  
Complete Directions For Use  
Booklet  
HERE

**ACCEPTED**  
*with comment*  
DEC - 8 1998  
Under the Federal Insecticide,  
Fungicide, and Rodenticide Act,  
as amended, for the pesticide  
registered under  
EPA Reg. No. 71714-1

ENTS

Full Book Registration  
John W. Smith P.O. Box 100  
2. California, CA 91111  
71714-R

EPA Est. 71714

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**Roundup**  
**ULTRA**

Herbicide **Monsanto**



### Complete Directions for Use

EPA Reg. No. 524-475

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.

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**Complete Directions for Use**

EPA Reg. No. 524-475

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.

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1997-1 21137N3-2/53

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Read the entire label before using this product.  
Use only according to label instructions.  
It is a violation of Federal law to use this product in any manner inconsistent with its labeling.  
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.  
REFORMULATION IS PROHIBITED. SEE INDIVIDUAL CONTAINER LABEL FOR REPACKAGING LIMITATIONS.

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**1.0 INGREDIENTS**

**ACTIVE INGREDIENT:**

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

INERT INGREDIENTS: ..... 59.0%  
100.0%

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

This product is protected by U.S. Patent No. 4,405,531. Other patents pending. No license granted under any non-U.S. patent(s).

**2.0 IMPORTANT PHONE NUMBERS**

1. FOR PRODUCT INFORMATION OR ASSISTANCE IN USING THIS PRODUCT, CALL TOLL-FREE,  
1-800-332-3111
2. IN CASE OF AN EMERGENCY INVOLVING THIS PRODUCT OR FOR MEDICAL ASSISTANCE, CALL COLLECT, DAY OR NIGHT,  
(314)-694-4000

**3.0 PRECAUTIONARY STATEMENTS**

**3.1 Hazards to Humans and Domestic Animals**

Keep out of reach of children.

**CAUTION!**

CAUSES EYE IRRITATION.

Avoid contact with eyes or clothing.

**FIRST AID: IF IN EYES,** flush with plenty of water. Get medical attention if irritation persists.

**DOMESTIC ANIMALS:** This product is considered to be relatively nontoxic 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.

**Personal Protective Equipment (PPE)**

Applicators and other handlers must wear long-sleeved shirt and long pants, shoes plus socks. Follow manufacturer's instructions for cleaning/maintaining PPE (Personal Protective Equipment). If no such instructions for washables, 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

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**PRECAUTIONARY STATEMENTS 6**

**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.

**3.2 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 disposing of equipment washwaters.

**3.3 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. 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 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.

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, waterproof gloves, shoes plus socks.

**Non-Agricultural Use Requirements**

The requirements in this box apply to uses of this product that are NOT within the scope of the 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 to prevent transfer of this product onto desirable vegetation.

**PRECAUTIONARY STATEMENTS 7**

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## 4.0 STORAGE AND DISPOSAL

Do not contaminate water, foodstuffs, feed or seed by storage or disposal.

See container label for STORAGE AND DISPOSAL instructions.

## 5.0 GENERAL INFORMATION (How this product works)

**Product Description:** This product is a postemergent, 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. No additional surfactants, additives containing surfactant, buffering agents or pH adjusting agents are needed or recommended. It may be applied through most standard industrial or field-type sprayers after dilution and thorough mixing with water or other carriers according to label instructions.

Do not add surfactants, additives containing surfactants, buffering agents or pH adjusting agents to this product. Ammonium sulfate may be used. See the MIXING section of this label for instructions.

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

**Stage of Weeds:** Annual weeds are easiest to control when they are small. Best control of most perennial weeds is

obtained when treatment is made at late growth stages approaching maturity. Refer to the annual, perennial, woody brush and trees rate tables for recommendations for specific weeds.

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

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

**Cultural Considerations:** Reduced control may result when applications are made to annual or perennial weeds that have been mowed, grazed, or cut, and have not been allowed to regrow to the recommended 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 weed foliage to the point of runoff.

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

**No Soil Activity:** Weeds must be emerged at the time of application to be controlled by this product. Weeds germinating from seed after application will not be controlled. Unemerged plants arising from unattached underground rhizomes or root stocks of perennials will not be affected by the herbicide and will continue to grow.

When this product comes in contact with soil, it is bound to soil particles. Under recommended use situations, once this product is bound to soil particles, it is not available for plant uptake and will not harm off-site vegetation where roots grow into the treated area or if the soil is transported off-site. The strong affinity of this product to soil particles pre-

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**GENERAL INFORMATION 10**

vents this product from leaching out of the soil profile and entering ground water

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

**Volatility:** Roundup Ultra is non-volatile. Therefore, it cannot move as a vapor after application to affect nearby vegetation.

**Toxicology Testing:** Exposure to workers and other applicators generally is expected to pose minimal risks based on results of short-term toxicity studies. Glyphosate has been thoroughly tested and determined not to cause cancer or other adverse long-term health effects.

**Tank Mixing:** This product does not provide residual weed control. For subsequent residual weed control, follow a label-approved herbicide program. Read and carefully observe the cautionary statements and all other information appearing on the labels of all herbicides used. Use according to the most restrictive label directions for each product in the 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 recommended in this labeling. Mixing this product with herbicides or other materials not recommended on this label may result in reduced performance.

**Annual Maximum Use Rate:** 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 per acre per year.

For noncrop uses, the combined total of all treatments must not exceed 10.6 quarts of this product 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) which 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 other unintended consequences. Keep container closed to prevent spills and contamination.

**6.0 MIXING**

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

**NOTE:** REDUCED RESULTS MAY OCCUR IF WATER CONTAINING SOIL IS USED, SUCH AS VISIBLY MUDDY WATER OR WATER FROM PONDS AND DITCHES THAT IS NOT CLEAR.

**MIXING 11**

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### 6.1 Mixing with Water

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

### 6.2 Tank Mixing Procedure

Mix labeled tank mixtures of this product with water as follows:

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

7. Add individual formulations to the spray tank as follows: wettable powder, flowable, emulsifiable concentrate, drift control additive and water soluble liquid.

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

Keep by-pass line 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.

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

Refer to the "Tank Mixing" section of "GENERAL INFORMATION" for additional precautions.

### 6.3 Mixing for Hand-held Sprayers

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

**Spray Solution**

Desired Volume	Amount of Roundup® Ultra					
	½%	1%	1½%	2%	5%	10%
1 Gal	¾ oz	1½ oz	2 oz	2½ oz	6½ oz	13 oz
25 Gal	1 pt	1 qt	1½ qt	2 qt	5 qt	10 qt
100 Gal	2 qt	1 gal	1½ gal	2 gal	5 gal	10 gal

2 tablespoons = 1 fluid ounce

For use in knapsack sprayers, it is suggested that the recommended amount of this product be mixed with water in a larger container. Fill sprayer with the mixed solution.

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## 6.4 Ammonium Sulfate

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

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

## 6.5 Colorants or Dyes

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

## 6.6 Drift Control Additives

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

## 7.0 APPLICATION EQUIPMENT AND TECHNIQUES

Do not apply this product through any type of irrigation system.

This product may be applied with the following application equipment:

**Aerial**—Fixed Wing and Helicopter

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

**Hand-Held and High-Volume Spray Equipment**—Knapsack and backpack sprayers, pump-up pressure sprayers, hand-guns, 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**—Recirculating sprayers, 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 which produce a spray consisting of a narrow range of droplet sizes.

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

## 7.1 Aerial Equipment

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

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

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**APPLICATION EQUIPMENT 16**

FOR AERIAL APPLICATION IN CALIFORNIA, REFER TO THE FEDERAL SUPPLEMENTAL LABEL FOR AERIAL APPLICATIONS IN THAT STATE FOR SPECIFIC INSTRUCTIONS, RESTRICTIONS AND REQUIREMENTS. This product plus Banvel™ or 2,4-D tank mixtures may not be applied by air in California.

Avoid direct application to any body of water.

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

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

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

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

**7.2 Ground Broadcast Equipment**

Use the recommended rates of this product in 3 to 40 gallons of water per acre as a broadcast spray unless otherwise specified. As density of weeds increases, spray volume

should be increased within the recommended range to ensure complete coverage. Carefully select proper nozzles to avoid spraying a fine mist. For best results with ground application equipment, use flat fan nozzles. Check for even distribution of spray droplets.

**7.3 Hand-Held and High-Volume Equipment**

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

For control of weeds listed in the annual weeds rate tables, apply a 0.5 percent solution of this product to weeds less than 6 inches in height or runner length. Apply prior to seed-head 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 which 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.

**7.4 Selective Equipment**

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

A recirculating spray system directs the spray solution onto weeds growing above desirable vegetation, while spray solu-

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tion not intercepted by weeds is collected and returned to the spray tank for reuse.

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

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

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

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

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

**Shielded and hooded applicators**

Use nozzles that provide uniform coverage within the treated area. Keep shields on these sprayers adjusted to protect desirable vegetation. **EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OF HERBICIDE WITH DESIRABLE VEGETATION.**

**Wiper applicators and sponge bars**

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

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

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

Do not use wiper equipment when weeds are wet.

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

Do not add surfactant to the herbicide solution.

**For Rope or Sponge Wick Applicators**—Mix 1 gallon of this product in 2 gallons of water to prepare a 33 percent solution. Apply this solution to weeds listed in this section.

**For Porous-Plastic Applicators**—Solutions ranging from 33 to 100 percent of this product in water may be used in porous-plastic wiper applicators.

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

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

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**APPLICATION EQUIPMENT 20**

When applied as recommended, this product SUPPRESSES the following weeds:

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

**7.5 Injection Systems**

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

**7.6 CDA Equipment**

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

For the control of annual weeds with hand-held CDA units, apply a 20 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 application equipment produces a spray pattern which is not easily visible. Extreme care must be exercised to avoid spray or drift contacting the foliage or another green tissue of desirable vegetation, as damage or destruction may result.

**8.0 CROPS (Alphabetical)**

This section is organized alphabetically by crop category. There may be several labeled crops listed in a crop category.

Unless otherwise specified, applications may be made to control any weeds listed in the annual, perennial and woody brush tables. Also refer to the "SELECTIVE EQUIPMENT" section.

For any crop not listed in this "CROPS" section, applications must be made at least 30 days prior to planting.

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

When applying this product prior to transplanting crops into plastic mulch, residues may be removed from the plastic by 0.5 inches of water via sprinkler irrigation or natural rainfall.

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

LABELLED CROPS: Alfalfa, clover, kudzu, lespedeza, lupin, sainfoin, trefoil, velvet bean, vetch, crown vetch, milk vetch

TYPES OF APPLICATIONS: Preplant, preemergence, at-planting, spot treatment, wiper applicators, renovation, preharvest

**Preplant, Preemergence and At-planting**

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

PRECAUTIONS, RESTRICTIONS: Remove domestic livestock before application and wait 8 weeks after application before grazing or harvesting.

**Preharvest (Alfalfa only)**

USE INSTRUCTIONS: This product may be used in declining alfalfa stands or any stand of alfalfa where crop destruction is acceptable. This application will severely injure or destroy



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the stand of alfalfa. This product will control annual and perennial weeds, including quackgrass, when applied prior to the harvest of alfalfa. The treated crop and weeds can be harvested and fed to livestock after 36 hours. Allow a minimum of 36 hours between application and harvest. Applications may be made at any time of the year. Make only one application to an existing stand of alfalfa per 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:** Do not apply more than 1 quart of this product per acre as a preharvest treatment. Do not use for alfalfa grown for seed, as a reduction in germination or vigor may occur.

**Spot treatment or Wiper applications (Alfalfa and Clover only)**

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

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

**Renovation**

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

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

**8.2 Asparagus**

**TYPES OF APPLICATIONS:** Preplant, preemergence, spot treatment, postharvest

**Preplant, Preemergence**

**USE INSTRUCTIONS:** This product may be applied prior to emergence of asparagus.

**PRECAUTIONS, RESTRICTIONS:** Do not apply within a week before the first spears emerge.

**Spot treatment**

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

**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.

**Postharvest**

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

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

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### 8.3 Cereal Crops

LABELED CROPS: Barley, Buckwheat, Millet (Pearl, Proso), Oats, Rice, Rye, Teosinte, Triticale, Wheat (All), Wild rice

TYPES OF APPLICATIONS: Preplant, preemergence, at-planting, spot treatment (except rice), post-harvest, preharvest (wheat only), wiper applicators (wheat only)

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

**Preplant, Preemergence and At-planting**

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

**Spot treatment (except rice)**

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

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

**Postharvest**

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

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

**Preharvest (wheat only)**

USE INSTRUCTIONS: This product provides weed control when applied prior to harvest of wheat. Apply after the hard-dough stage of grain (30% or less grain moisture) and at

least 7 days prior to harvest. Wheat stubble may be grazed immediately after harvest.

This product may be applied using either aerial or ground spray equipment. 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. Do not apply to wheat grown for seed, as a reduction in germination or vigor may occur.

**Wiper applications (wheat only)**

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

PRECAUTIONS, RESTRICTIONS: Allow at least 35 days between application and harvest. Do not use roller applicators.

### 8.4 Christmas Trees

TYPES OF APPLICATIONS: Post-directed, spot treatment, site preparation

**Post-directed, Spot treatment**

USE INSTRUCTIONS: This product may be used as a post-directed spray and spot treatment around established Christmas trees.

PRECAUTIONS, RESTRICTIONS: Desirable plants may be protected from the spray solution by using shields or coverings made of cardboard or other impermeable material. THIS PRODUCT IS NOT RECOMMENDED FOR USE AS AN OVER-THE-TOP BROADCAST SPRAY IN CHRISTMAS TREES. Care must be exercised to avoid contact of spray, drift or mist with foliage or green bark of established Christmas trees.

**Site preparation**

USE INSTRUCTIONS: This product may be used prior to planting Christmas trees.

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

### 8.5 Citrus Crops

LABELED CROPS: Calamondin, Chironja, Citron, Citrus Hybrids, Grapefruit, Kumquat, Lemon, Lime, Mandarin (tangerine), Orange (All), Pummelo, Tangelo, Tangor

TYPES OF APPLICATIONS: General weed control, middles (between rows of trees), strips (in row of trees), selective equipment

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

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

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

#### Perennial weeds:

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

Weed Species	Roundup® Ultra Rate Per Acre			
	1 QT	2 QT	3 QT	5 QT
Bermudagrass	B	—	PC	C
Guineagrass				
Texas and Florida Ridge	B	C	C	C
Florida Flatwoods	—	B	C	C
Paragrass	B	C	C	C
Torpedograss	S	—	PC	C

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

### 8.6 Conservation Reserve Program (CRP)

TYPES OF APPLICATIONS: Renovation (rotating out of CRP), site preparation, dormant, wiper

#### Rotating out of CRP, Site preparation

USE INSTRUCTIONS: This product may be used to prepare CRP land for crop production.

#### Dormant, Wiper

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

### 8.7 Corn

**TYPES OF CORN:** Field corn, seed corn, sweet corn and popcorn

**TYPES OF APPLICATIONS:** Preplant, preemergence, at-planting, spot treatment, post-harvest

**Preplant, Preemergence and At-planting**

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

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

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

ATRAZINE	EXTRAZINE™	LOROX™
BANVEL	FRONTIER™	MARKSMAN™
BICEP™	GUARDSMAN™	MICRO-TECH®
BICEP II	HARNESS®	PARTNER®
BLADEX/CYANAZINE	HARNESS XTRA	PROWL™
BROADSTRIKE™	HARNESS XTRA 5.6L	SIMAZINE
BULLET®	LARIAT®	SURPASS™
DUAL™	LASSO®/ALACHLOR	SURPASS 100
DUAL II	LINEX™	TOPNOTCH™

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

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

**PRECAUTIONS, RESTRICTIONS:** Applications of 2,4-D or dicamba must be made at least 7 days prior to planting corn. The tank mix recommendations in this section are not registered in California.

**Spot treatment**

**USE INSTRUCTIONS:** For spot treatments, apply this product prior to silking of corn.

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

**Post-harvest**

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

**PRECAUTIONS, RESTRICTIONS:** Do not harvest or feed treated vegetation for 8 weeks following application.

### 8.8 Cotton

**TYPES OF APPLICATIONS:** Preplant, preemergence, at-planting, hooded sprayer, selective equipment, spot treatment, preharvest

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**Preplant, Preemergence, and At-planting**

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

**Hooded sprayer, Selective equipment**

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

PRECAUTIONS, RESTRICTIONS: See the "SELECTIVE EQUIPMENT" part of the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label for information on proper use and calibration of this equipment.

**Spot treatment**

USE INSTRUCTIONS: For spot treatments, apply this product prior to boll opening of cotton.

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

**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, perennial and woody brush tables. Apply 1 pint to 2 quarts of this product per acre for cotton regrowth inhibition. Allow a minimum of 7 days between application and harvest of cotton.

This product may be applied using either aerial or ground spray equipment. 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.

Apply after sufficient bolls have developed to produce the desired yield of cotton. Applications made prior to this time could affect maximum yield potential.

This product may be tank mixed with DEF<sup>TM</sup> 6, Folex<sup>TM</sup>, or Prep<sup>TM</sup> to provide additional enhancement of cotton leaf drop.

PRECAUTIONS, RESTRICTIONS: Do not feed or graze treated cotton forage or hay following preharvest applications. DO NOT APPLY MORE THAN 1 QUART OF THIS PRODUCT PER ACRE BY AIR. Do not apply more than 2 quarts of this product per acre by ground. Do not apply to cotton grown for seed, as a reduction in germination or vigor may occur.

## 8.9 Fallow Systems

TYPES OF APPLICATIONS: Chemical fallow, preplant fallow beds, aid-to-tillage

**Chemical fallow**

USE INSTRUCTIONS: This product may be applied during the fallow period prior to planting or emergence of any crop listed on this label. For any crop not listed on this label, applications must be made at least 30 days prior to planting. This product may be used as a substitute for tillage to control annual weeds in fallow fields. Also, broadcast or spot treatments will control or suppress many perennial weeds in fallow fields. Ground or aerial application equipment may be used. Tank mixtures with 2,4-D and dicamba may be used.

PRECAUTIONS, RESTRICTIONS: DO NOT APPLY BANVEL OR 2,4-D 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 Banvel is applied within 45 days of planting.

**Preplant fallow beds**

USE INSTRUCTIONS: This product may be applied to fallow beds prior to planting or emergence of any crop listed on this label. For any crop not listed on this label, applications

must be made at least 30 days prior to planting. This product will control weeds listed in the annual, perennial and woody brush tables.

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

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

#### Aid-to-tillage

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

**PRECAUTIONS, RESTRICTIONS:** Tank mixtures with residual herbicides may result in reduced performance.

## 8.10 Grain Sorghum (Milo)

**TYPES OF APPLICATIONS:** Preplant, preemergence, at-planting, spot treatment, wiper applicators, post-harvest

#### Preplant, Preemergence, At-planting

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

#### Spot treatment and Wiper applications

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

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

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

#### Post-harvest

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

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

## 8.11 Grass Seed Production

**TYPES OF APPLICATIONS:** Preplant, renovation, site preparation

**USE INSTRUCTIONS:** Applications may be made prior to planting or renovation of turf or forage grass areas grown for seed production. For maximum control of existing vegetation, delay planting to determine if any regrowth from escaped underground plant parts occurs. Where repeat treatments are

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necessary, sufficient regrowth must be attained prior to application. For warm-season grasses, such as bermudagrass, summer or fall applications provide best control.

**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.

Do not feed or graze treated areas for 8 weeks following application.

### 8.12 Herbs

**TYPES OF HERBS:** Peppermint, spearmint

**USE INSTRUCTIONS:** This product may be used as a spot treatment in spearmint and peppermint. Apply spray-to-wet with hand-held equipment, such as backpack and knapsack sprayers, pump-up pressure sprayers, hand-guns, hand-wands or any other hand-held or motorized spray equipment used to direct the spray solution on 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. No more than one-tenth of any acre should be treated at one time. The crop receiving spray in the treated area will be killed. Take care to avoid drift or spray outside the target area for this reason.

### 8.13 Pastures

**TYPES OF PASTURES:** Bahiagrass, bermudagrass, bluegrass, brome, fescue, orchardgrass, ryegrass, timothy, wheatgrass, alfalfa and clover

**TYPES OF APPLICATIONS:** Spot treatment, wiper application, preplant, preemergence, pasture renovation

#### Spot treatment and Wiper application

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

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

#### Preplant, Preemergence and Pasture renovation

**USE INSTRUCTIONS:** This product may be applied prior to planting or emergence of forage grasses and legumes. In addition, this product may be used to control perennial pasture species listed on this label prior to re-planting.

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

### 8.14 Peanuts

**TYPES OF APPLICATIONS:** Preplant, preemergence, at-planting

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

### 8.15 Small Fruits and Berries

**LABELLED CROPS:** Blackberry, Blueberry, Boysenberry, Cranberry, Currant, Dewberry, Elderberry, Gooseberry, Huckleberry, Loganberry, Dillieberry, Raspberry (Black, Red), Youngberry

**TYPES OF APPLICATIONS:** Preplant, preemergence, directed spray (except cranberry), wiper application

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

PRECAUTIONS, RESTRICTIONS: Do not permit herbicide solution to contact desirable vegetation, including green shoots, canes or foliage. Allow a minimum of 30 days between last application and harvest of cranberries. For other small fruits and berries, allow a minimum of 14 days between last application and harvest.

### 8.16 Soybeans

TYPES OF APPLICATIONS: Preplant, preemergence, at-planting, spot treatment, preharvest, selective equipment, hooded sprayers

#### Preplant, Preemergence and At-planting

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

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

CANOPY™	LASSO/ALACHLOR	PROWL
COMMAND™	LINEX	PURSUIT™
DUAL	LOROX/LINURON	PURSUIT PLUS
DUAL II	LOROX PLUS	SCEPTER™
FRONTIER	MICRO-TECH	SENCOR™/LEXONE™
FUSION™	PARTNER	SQUADRON™
GEMINI™	PREVIEW™	TURBO™

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

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

PRECAUTIONS, RESTRICTIONS: The tank mix recommendations in this section are not registered in California.

#### Spot treatment

USE INSTRUCTIONS: For spot treatments, apply this product prior to initial pod set in soybeans.

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

#### Preharvest

USE INSTRUCTIONS: This product provides weed control when applied prior to harvest of soybeans.

Apply at rates given in the annual, perennial and woody brush tables. This product may be applied using either aerial or ground spray equipment. 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.

Apply after pods have set and lost all green color. Allow a minimum of 7 days between application and harvest of soybeans. Care should be taken to avoid excessive seed shatter loss due to ground application equipment.

PRECAUTIONS, RESTRICTIONS: Do not graze or harvest treated crop for livestock feed within 25 days of last preharvest application. DO NOT APPLY MORE THAN 6 QUARTS



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PER ACRE OF THIS PRODUCT FOR PREHARVEST APPLICATIONS. DO NOT APPLY MORE THAN 1 QUART PER ACRE OF THIS PRODUCT BY AIR. Do not apply to soybeans grown for seed as a reduction in germination or vigor may occur.

**Selective equipment**

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

PRECAUTIONS, RESTRICTIONS: See the "SELECTIVE EQUIPMENT" part of the "APPLICATION EQUIPMENT AND TECHNIQUES" section of this label for information on proper use and calibration of this equipment.

## 8.17 Sugarcane

TYPES OF APPLICATIONS: Preplant, preemergence, spot treatment, fallow, hooded sprayers

**Preplant, 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, make a 1 percent solution of this product in water and spray to wet the foliage of vegetation to be controlled. Volunteer or diseased sugarcane should have at least 7 new leaves.

PRECAUTIONS, RESTRICTIONS: Avoid spray contact with healthy cane 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.

**Hooded sprayers**

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

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

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

Equipment must be designed, maintained and operated to prevent the herbicide solution from contacting the crop. Contact of this product in any manner to any vegetation to which treatment is not intended may cause damage. Such damage shall be the sole responsibility of the applicator.

PRECAUTIONS, RESTRICTIONS: Do not allow treated weeds to come into contact with the crop. Droplets, mist, foam or splatter of the herbicide solution settling on the crop may result in discoloration, stunting or destruction.

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### 8.18 Sunflowers

**TYPES OF APPLICATIONS:** Preplant, preemergence

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

**PRECAUTIONS, RESTRICTIONS:** Do not apply more than 1 quart of this product per acre for sunflowers. Make only one preplant or preemergent application per year. Do not feed or graze sunflower forage following application of this product.

### 8.19 Tree and Vine Crops (General)

**TYPES OF APPLICATIONS:** General weed control, middles (between rows of trees), strips (in row of trees), selective equipment (except kiwi), perennial grass suppression

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

This product may be applied in middles, strips and for general weed control in established citrus groves, tree fruit and tree nut orchards, and vineyards. Apply at 1 pint to 5 quarts per acre. Repeat applications may be made up to a maximum of 10.6 quarts per acre per year. This product may also be used for site preparation prior to transplanting these crops. Allow a minimum of 3 days between application and transplanting. Applications may be made with boom equipment, CDA, shielded sprayers, hand-held and high-volume wands, lances, orchard guns or with wiper applicator equipment, except as directed.

#### Middles (between rows)

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

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

#### Strips (in rows)

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

- |                  |                     |
|------------------|---------------------|
| DEVIRINOL™ 50 DF | PRINCE™ CALIBER™ 90 |
| DIREX™ 4L        | SIMAZINE 4L         |
| GOAL 2XL         | SIMAZINE 80W        |
| KARMEX DF        | SIM-TROL™ 4L        |
| KROVAR I         | SOLICAM™ DF         |
| KROVAR II        | SURFLAN™ AS         |
| PROWL            | SURFLAN 75W         |

Do not apply these tank mixtures in Puerto Rico.

Refer to the individual product labels for specific crops, rates, geographic restrictions and precautionary statements.

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

#### Perennial grass suppression

This product will suppress perennial grasses such as bahiagrass, 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 per acre should be used in shaded conditions or where a lesser degree of suppression is desired.

#### Selective equipment

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

GENERAL PRECAUTIONS/RESTRICTIONS: For all uses in this section.

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

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

## 8.20 Tree Fruits

LABELED CROPS: Apple, Apricot, Cherry (Sweet, Sour), Crabapple, Loquat, Mayhaw, Nectarine, Olive, Peach, Pear, Plum/Prune (All), Quince

TYPES OF APPLICATIONS: General weed control, middies (between rows of trees), strips (in row of trees), selective equipment

NOTE: FOR GENERAL USE DIRECTIONS, SEE THE "TREE, NUT AND VINE (GENERAL)" SECTION. THE FOLLOWING

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DIRECTIONS ARE SPECIFIC TO TREE FRUITS.

#### Restrictions on application equipment

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

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

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

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

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

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

## 8.21 Tree Nuts

LABELED CROPS: Almond, Beechnut, Brazil nut, Butternut, Cashew, Chestnut, Chinquapin, Filbert (Hazelnut), Hickory nut, Macadamia, Pecan, Pistachio, Walnut (Black, English)

TYPES OF APPLICATIONS: General weed control, middles (between rows of trees), strips (in row of trees), selective equipment

NOTE: FOR GENERAL USE DIRECTIONS, SEE THE "TREE, NUT AND VINE (GENERAL)" SECTION. THE FOLLOWING DIRECTIONS ARE SPECIFIC TO TREE NUTS.

PRECAUTIONS, RESTRICTIONS: Allow a minimum of 3 days between last application and harvest of tree nuts, except pistachio nuts. For pistachio nuts allow a minimum of 21 days between last application and harvest.

## 8.22 Tropical Crops

LABELED CROPS: Atemoya, Avocado, Banana, Barbados Cherry (acerola), Breadfruit, Canistel, Carambola, Cherimoya, Cocoa beans, Coconuts, Coffee, Dates, Figs, Guava, Jaboticaba, Jackfruit, Longan, Lychee, Mango, Marmaladebox (genip), Papaya, Passion fruit, Persimmon, Pineapple, Plantain, Pomegranate, Sapodilla, Sapote (black, mamey, white), Soursop, Sugar apple, Tamarind, Tea.

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

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

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

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

Do not feed or graze treated pineapple forage following application.

## 8.23 Vegetable Crops

**LABELED CROPS:** Amaranth, Arrugula, Artichoke (Jerusalem), Beans (All), Beet greens, Garden Beets, Broccoli (All), Brussels sprouts, Cabbage (All), Cabbage (Chinese), Cantaloupe, Cardoon, Cavalo Broccolo, Carrot, Cauliflower, Casaba melon, Celery, Celery (Chinese), Celeriac, Celtuce, Chard (Swiss), Chayote, Chervil, Chick peas, Chicory, Chrysanthemum, Collards, Corn salad, Crenshaw melon, Cress, Cucumber, Dandelion, Dock (sorrel), Eggplant, Endive, Fennel (florence), Garlic, Gherkin, Ginseng, Gourds, Ground cherry, Guar, Honeydew melon, Honey ball melon, Horseradish, Kale, Kohlrabi, Leek, Lentils, Lettuce, Mango melon, Melons (All), Mizuna, Muskmelon, Mustard greens, Okra, Onion, Oriental radish, Parsley, Parsnips, Peas (All), Pepinos, Pepper (All), Persian melon, Potato (Irish), Pumpkin, Purslane, Radish, Rape greens, Rhubarb, Rutabaga, Salsify, Shallot, Spinach (All), Mustard Spinach, Squash (Summer, Winter), Sugar beets, Sweet potato, Tomatillo, Tomato, Turnip, Watercress, Watermelon, Yams.

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

**PRECAUTIONS, RESTRICTIONS:** When applying this product prior to transplanting crops into plastic mulch, care must be taken to remove residues of this product from the plastic prior to transplanting. Residues can be removed by 0.5 inch natural rainfall or by applying water via a sprinkler system.

For the following crops, apply only prior to planting. Allow at least 3 days between application and planting of cantaloupe, casaba melon, crenshaw melon, cucumber, eggplant, garlic, gherkin, gourds, ground cherry, honeydew melon, honey ball melon, mango melon, melons (all), muskmelon, pepper (all), persian melon, pumpkin, squash (summer, winter), tomatillo, tomato, watercress, and watermelon.

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

## 8.24 Vine Crops

**LABELED CROPS:** Grapes (raisin, table, wine), Kiwi fruit

**TYPES OF APPLICATIONS:** General weed control, middles (between rows), strips (in row), selective equipment

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

Applications should not be made when green shoots, canes or foliage are in the spray zone.

In the northeast and Great Lakes regions, applications must be made prior to the end of bloom stage of grapes to avoid injury, or make applications with shielded sprayers or wiper equipment.

**PRECAUTIONS, RESTRICTIONS:** Allow a minimum of 14 days between last application and harvest.

## 9.0 FARMSTEADS

**TYPES OF APPLICATIONS:** General nonselective weed control, trim-and-edge, chemical mowing, cut stumps, habitat management

### 9.1 General nonselective weed control, Trim-and-edge

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

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

Banvel	Simazine 80W
Diuron	Surflan 75W
Princep Caliber 90	Surflan AS
Simazine	2,4-D
Simazine 4L	

Banvel and 2,4-D mixtures may not be applied by air in California

### 9.2 Chemical mowing

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

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

### 9.3 Cut Stumps

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

USE INSTRUCTIONS: This product will control regrowth of cut stumps and resprouts of many types of woody brush and tree species, 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	Salt-cedar
Eucalyptus	Sweetgum
Madrone	Tan oak
Oak	Willow
Reed, giant	

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. INJURY RESULTING FROM ROOT GRAFTING MAY OCCUR IN ADJACENT WOODY BRUSH OR TREES.

### 9.4 Habitat Management

TYPES OF USES: Habitat restoration and maintenance, wildlife food plots

#### Habitat restoration and maintenance

USE INSTRUCTIONS: This product may be used to control exotic and other undesirable vegetation in habitat management areas. Applications can be made to allow recovery of native plant species, prior to planting desirable native species, and for similar broadspectrum vegetation control requirements in habitat management areas. Spot treatments

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can be made to selectively remove unwanted plants for habitat maintenance and enhancement. The tank mixtures listed in this section of the label may be used for habitat restoration and maintenance.

**Wildlife food plots**

**USE INSTRUCTIONS:** This product may be used as a site preparation treatment to control annual and perennial weeds prior to planting wildlife food plots. Any wildlife food species may be planted after applying this product, or native species may be allowed to repopulate the area. If tillage is needed to prepare a seedbed, wait 7 days after application before tillage.

**10.0 ANNUAL WEEDS RATE TABLES**  
**Alphabetically by Species**

Water carrier volumes of 3 to 10 gallons per acre for ground applications and 3 to 5 gallons per acre for aerial applications are recommended.

Apply to actively growing annual weeds.

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

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

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

Refer to this map for location of the regions listed in the annual weed tables below.



**ANNUAL WEEDS RATE TABLE, NORTH AND SOUTH REGIONS**

Weed Species	Region	Rate (Fluid Ounces Per Acre)					
		12	16	24	32	40	48
		<b>Maximum Height/Length</b>					
Annoda, spurred		-	1"	2"	3"	5"	8"
Barley		-	18"	18"+	-	-	-
Barnyardgrass	South	-	3"	5"	7"	9"	12"
	North	-	-	6"	12"	-	-
Bittercress		-	12"	20"	-	-	-
Bluegrass, annual		-	10"	-	-	-	-
Brassica, fivehook		-	-	-	6"	-	-
Brome, downy		6"	-	-	-	-	-
Brome, Japanese		-	6"	-	24"	-	-
Browtop panicum		-	6"	8"	12"	-	24"
Burcucumber		-	-	6"	12"	-	-
Buttercup		-	12"	20"	-	-	-
Carolina foxtail		-	20"	-	-	-	-
Carolina geranium		-	-	-	4"	-	9"
Carpetweed		-	-	6"	12"	-	-
Cheat		-	6"	20"	-	-	-

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**ANNUAL WEEDS RATE TABLES 52**

**ANNUAL WEEDS RATE TABLE,  
NORTH AND SOUTH REGIONS**

Weed Species	Region	Rate (Fluid Ounces Per Acre)					
		12	16	24	32	40	48
Maximum Height/Length							
Chervil		-	20"	-	-	-	-
Chickweed		-	12"	18"	-	-	-
Cocklebur		-	12"	18"	24"	-	-
Copperleaf, hophornbeam		-	1"	2"	3"	4"	6"
Copperleaf, Virginia		-	1"	2"	3"	4"	6"
Corn		-	12"	20"	-	-	-
Corn speedwell		-	12"	-	-	-	-
Crabgrass		-	12"	18"	-	-	-
Cutleaf evening primrose		-	-	-	3"	-	6"
Dwarf dandelion		-	20"	-	-	-	-
Eastern manna grass		-	8"	12"	-	-	-
Eclipta		-	4"	8"	12"	-	-
Fall panicum	South	-	4"	6"	8"	12"	24"
	North	-	6"	12"	18"	-	-
Falsedandelion		-	20"	-	-	-	-
Falseflax, smallseed		-	12"	-	-	-	-
Fiddleneck		-	-	-	6"	-	12"
Field pennycress		-	6"	12"	-	-	-
Filaree		-	-	-	-	-	12"
Fleabane, annual		-	6"	20"	-	-	-
Fleabane, hairy ( <i>Conyza bonariensis</i> )		-	6"	-	-	-	-
Fleabane, rough		-	3"	6"	12"	-	-
Florida pusley		-	-	-	12"	-	-
Foxtail	South	-	8"	12"	20"	-	-
	North	-	18"	18"+	-	-	-
Goatgrass, jointed		-	6"	-	-	-	-
Goosegrass		-	3"	5"	8"	-	18"
Grain sorghum (milo)		-	6"	12"	20"	-	-
Groundsel, common		-	6"	-	-	-	-
Hemp sesbania		-	-	2"	4"	6"	8"
Henbit		-	-	-	6"	-	20"
Horseweed/ Marestail	South	-	-	12"	30"	-	-
( <i>Conyza canadensis</i> )	North	-	6"	12"	18"	-	-
Itchgrass		-	6"	12"	18"	-	-
Jimsonweed		-	-	-	6"	-	12"
Johnsongrass, seedling	South	-	-	18"	-	-	-
	North	-	12"	18"	-	-	-
Junglerice		-	3"	5"	7"	9"	12"
Knotweed		-	3"	8"	12"	-	20"
Kochia <sup>1</sup>		-	3 to 6"	6" 12"	-	-	-
Lambsquarters		-	6"	8"	12"	-	20"
Little barley		-	20"	-	-	-	-
London rocket		-	6"	-	-	-	-
Mayweed		-	-	2"	6"	12"	18"
Morningglory ( <i>Ipomoea spp.</i> )		-	-	2"	4"	-	6"
Mustard, blue		-	6"	-	-	-	-
Mustard, tansy		-	6"	12"	20"	-	-
Mustard, tumble		-	6"	-	-	-	-
Mustard, wild		-	6"	12"	18"	-	-
Nightshade, black		-	6"	12"	-	-	-
Nightshade, hairy		-	6"	12"	-	-	-
Oats		-	-	-	6"	20"	-
Pigweed		-	12"	18"	24"	-	-
Plains/Tickseed coreopsis		-	5"	12"	18"	-	-
Prickly lettuce		-	6"	12"	20"	-	-
Purslane		-	-	-	6"	-	12"
Ragweed, common	South	-	4"	6"	8"	-	11"
	North	-	6"	12"	18"	-	-
Ragweed, giant		-	-	4"	6"	-	11"
Red rice		-	-	-	4"	-	-

**ANNUAL WEEDS RATE TABLES 53**



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**ANNUAL WEEDS RATE TABLE 54**

**ANNUAL WEEDS RATE TABLE,  
NORTH AND SOUTH REGIONS**

Weed Species	Region	Rate (Fluid Ounces Per Acre)				
		12	16	24	32	40 48
Russian thistle		-	-	-	6"	- -
Rye	South	-	6"	20"	60"	- -
	North	-	18"	18"+	-	- -
Ryegrass		-	-	-	6"	- 7"+
Sandbur, field		12"	-	-	-	- -
Shattercane		-	12"	18"	-	- -
Shepherdspurse		-	6"	12"	-	- -
Sicklepod		-	-	2"	4"	- 8"
Signalgrass, broadleaf		-	3"	5"	7"	9" 12"
Smartweed, ladysthumb		-	4"	6"	8"	- 12"
Smartweed, Pennsylvania		-	4"	6"	8"	- 12"
Sowthistle, annual		-	-	-	6"	- 12"
Spanishneedles		-	-	-	8"	- 18"
Speedwell, purslane		-	12"	-	-	- -
Sprangletop		-	6"	12"	20"	- -
Spurge, prostrate		-	6"	12"	20"	- -
Spurge, spotted		-	6"	12"	20"	- -
Spurry, umbrella		6"	-	-	-	- -
Stinkgrass		12"	-	-	-	- -
Sunflower		-	12"	18"	-	- -
Teaweed/ Prickly sida		-	1"	2"	3"	4" 6"
Texas panicum		-	6"	8"	12"	- 24"
Velvetleaf	South	-	2"	3"	4"	5" 8"
	North	-	3"	6"	12"	- -
Virginia pepperweed		-	18"	-	-	- -
Waterhemp		-	-	6"	12"	- -
Wheat	South	-	6"	30"	-	- -
	North	-	18"	18"+	-	- -
Wheat, (overwintered)		-	6"	18"	-	- -
Wild oats		-	12"	-	-	- -
Witchgrass		-	12"	-	-	- -
Woolly cupgrass		-	6"	12"	-	- -
Yellow rocket		-	-	12"	20"	- -

<sup>1</sup> Do not treat kochia in the button stage.

**ANNUAL WEEDS RATE TABLE, WEST REGION**

Weed Species	Rate (Fluid Ounces Per Acre)			
	12	16	24	32 48
Barley	12"	-	-	- -
Barryardgrass	6"	-	-	- -
Bluegrass, annual	6"	-	-	- -
Bluegrass, bulbous	-	6"	-	- -
Brome, downy <sup>1</sup>	6"	-	-	- -
Buttercup	-	12"	-	- -
Cheat	-	6"	-	- -
Chickweed	-	6"	-	- -
Cocklebur	-	12"	-	- -
Corn	-	6"	-	- -
Crabgrass	-	12"	-	- -
Dwarf dandelion	-	12"	-	- -
Fall panicum	-	12"	-	- -
Falseflax, smallseed	-	12"	-	- -
Field pennycress	-	6"	-	- -
Filaree	-	-	-	- 12"
Fleabane, hairy ( <i>Conyza bonariensis</i> )	-	6"	-	- -
Florida pusley	-	-	-	12" -
Foxtail	(8 fl. oz. for up to 12")	-	-	- -
Goatgrass, jointed	-	6"	-	- -
Groundsel, common	-	6"	-	- -
Henbit	-	6"	-	- -
Horseweed/Marestail ( <i>Conyza canadensis</i> )	-	6"	-	- -
Johnsongrass, seedling	-	12"	-	- -

**ANNUAL WEEDS RATE TABLE 55**

**ANNUAL WEEDS RATE TABLE 56**

**ANNUAL WEEDS RATE TABLE, WEST REGION**

Weed Species	Rate				
	(Fluid Ounces Per Acre)				
	12	16	24	32	48
	Maximum Height/Length				
Lambsquarters	-	6"	-	-	-
London rocket	-	6"	-	-	-
Morningglory ( <i>Ipomoea spp.</i> )	-	2"	-	-	-
Mustard, blue	6"	-	-	-	-
Mustard, tansy	6"	-	-	-	-
Mustard, tumble	6"	-	-	-	-
Mustard, wild	6"	-	-	-	-
Pigweed	-	12"	-	-	-
Rye	12"	-	-	-	-
Ryegrass, Italian	-	6"	-	-	-
Sandbur, field	12"	-	-	-	-
Shattercane	12"	-	-	-	-
Shepherdspurse	-	6"	-	-	-
Sowthistle, annual	-	6"	-	-	-
Spurge, annual	-	6"	-	-	-
Stinkgrass	12"	-	-	-	-
Texas panicum	-	12"	-	-	-
Wheat	18"	-	-	-	-
Wild oats	-	12"	-	-	-
Witchgrass	-	12"	-	-	-

<sup>1</sup> For control of Downy brome in no-till systems, use 16 fluid ounces per acre.

**10.1 Annual Weeds—Water Carrier Volumes of 10 to 40 Gallons Per Acre**

Apply 1 to 1.5 quarts of this product per acre. Use 1 quart per acre if weeds are less than 6 inches tall and 1.5 quarts per acre if weeds are over 6 inches tall.

These rates will provide control of weeds listed in the annual weed control tables when water carrier volumes are 10 to 40 gallons per acre for ground applications.

**10.2 Annual Weeds—Tank Mixtures with 2,4-D or Banvel**

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

16 fluid ounces of this product plus 0.5 pound a.i. of 2,4-D per acre will control the following weeds when they are a maximum height or length of 6 inches: common ragweed, giant ragweed, Pennsylvania smartweed, and velvetleaf.

12 fluid ounces of this product plus 0.25 pound a.i. of Banvel or 0.5 pound a.i. of 2,4-D per acre will control foxtail up to 18".

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 Banvel is applied within 45 days of planting.

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

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# 11.0 PERENNIAL WEEDS RATE TABLE

## Alphabetically by Species

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 recommended stages.

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

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

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

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

**Spray Solution**

Desired Volume	Amount of Roundup® Ultra					
	½%	1%	1½%	2%	5%	10%
1 Gal	½ oz	1½ oz	2 oz	2½ oz	6½ oz	13 oz
25 Gal	1 pt	1 qt	1½ qt	2 qt	5 qt	10 qt
100 Gal	2 qt	1 gal	1½ gal	2 gal	5 gal	10 gal

2 tablespoons = 1 fluid ounce

Weed Species	Rate (QT/A)	Water Volume (GPA)	Hand-Held % Solution
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%
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Partial control. Apply when most of the plants are in bloom. Repeat applications will be required to maintain control.

Anise (fennel)	—	—	1-2%
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Apply as a spray-to-wet treatment. Optimum results are obtained when plants are treated at the bud to full-bloom stage of growth.

Bahiagrass	3-5	3-20	2%
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Apply when most plants have reached the early head stage.

Bentgrass	1.5	10-20	2%
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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 recommended for best results.

Bermudagrass	3-5	3-20	2%
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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 maintain control.

Bermudagrass, water (knotgrass)	1-1.5	5-10	2%
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Apply 1.5 quarts 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%
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Do not treat when weeds are under drought stress as good soil moisture is necessary for active growth.

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**PERENNIAL WEEDS RATE TABLE 60**

Weed Species	Rate (QT/A)	Water Volume (GPA)	Hand-Held % Solution
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For control, apply 4 to 5 quarts of this product per acre west of the Mississippi River and 3 to 4 quarts east of the Mississippi River. Apply when 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 a.i. of Banvel in 10 to 20 gallons of water per acre. Do not apply by air.

For suppression on irrigated agricultural land, apply 1 to 2 quarts of this product plus 1 pound a.i. 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. The use of at least one irrigation will promote active bindweed growth.

For suppression, apply 16 fluid ounces of this product plus 0.5 pound a.i. 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.

Blueweed, Texas 3-5 3-40 2%

Apply 4 to 5 quarts of this product per acre west of the Mississippi River and 3 to 4 quarts per acre east of the Mississippi River. Apply when plants are at or beyond full bloom. New leaf development indicates active growth. For best results, apply in late summer or fall. Fall treatments must be applied before a killing frost.

Brackenfern 3-4 3-40 1-1.5%

Apply to fully expanded fronds which are 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 1 pint of Banvel per acre. For partial control, apply 1 quart of this product plus 1 pint of Banvel per acre. Apply when plants are producing new active growth which has been initiated by moisture for at least 2 weeks and when plants are at or beyond flowering.

Canarygrass, reed 2-3 3-40 2%

For best results, apply when most plants have reached the boot-to-head stage of growth.

Cattail 3-5 3-40 2%

Apply when most plants have reached the early head stage.

Clover, red, white 3-5 3-20 2%

Apply when most plants have reached the early bud stage.

Cogongrass 3-5 10-40 2%

Apply when cogongrass is at least 18 inches tall in late summer or fall. Due to uneven stages of growth and the dense nature of vegetation preventing good spray coverage, repeat treatments may be necessary to maintain control.

**PERENNIAL WEEDS RATE TABLE 61**

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**PERENNIAL WEEDS RATE TABLE 62**

Weed Species	Rate (QT/A)	Water Volume (GPA)	Hand-Held % Solution
Dallisgrass	3-5	3-20	2%
Dandelion	3-5	3-40	2%
Dock, curly	3-5	3-40	2%
Dogbane, hemp	4	3-40	2%
Fescue (except tall)	3-5	3-20	2%
Fescue, tall	1-3	3-40	2%
Guineagrass	3	3-40	1%
Horsenettle	3-5	3-20	2%
Horseradish	4	3-40	2%
Iceplant	—	—	1.5-2%
Jerusalem artichoke	3-5	3-20	2%
Johnsongrass	0.5-3	3-40	1%

Apply when most plants have reached the early head stage.

Also for control, apply 16 fluid ounces of this product plus 0.5 pound a.i. 2,4-D in 3 to 10 gallons of water per acre.

Apply when most plants have reached the early bud stage of growth.

Also for control, apply 16 fluid ounces of this product plus 0.5 pound a.i. 2,4-D in 3 to 10 gallons of water per acre.

Apply when most plants have reached the late bud to flower stage of growth. Following crop harvest or mowing, allow weeds to regrow to a mature stage prior to treatment. For best results, apply in late summer or fall.

For suppression, apply 16 fluid ounces of this product plus 0.5 pound a.i. 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.

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.

Apply when most plants have reached at least the 7-leaf stage of growth. Ensure thorough coverage when using hand-held equipment.

Apply when most plants have reached the early bud stage.

Apply when most plants have reached the late bud to flower stage of growth. For best results, apply in late summer or fall.

Iceplant should be at or beyond the early bud stage of growth. Thorough coverage is necessary for best control.

Apply when most plants are in the early bud stage.

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 noncrop, 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. Allow 7 or more days after application before tillage. Do not tank-mix with residual herbicides when using the 1 quart per acre rate.

For burndown of Johnsongrass, apply 1 pint of this product in 3 to 10 gallons of water per acre before the plants reach a height of 12 inches. For this use, allow at least 3 days after treatment before tillage.

Spot treatment (partial control or suppression)—Apply a 1 percent solution of this product when Johnsongrass is 12 to 18 inches in height. Coverage should be uniform and complete.

**PERENNIAL WEEDS RATE TABLE 63**

**PERENNIAL WEEDS RATE TABLE 64**

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Weed Species	Rate (QT/A)	Water Volume (GPA)	Hand-Held % Solution
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Kikuyugrass 2-3 3-40 2%

Spray when most kikuyugrass is at least 8 inches in height (3 or 4-leaf stage of growth). Allow 3 or more days after application before tillage.

Knapweed 4 3-40 2%

Apply when most plants have reached the late bud to flower stage of growth. For best results, apply in late summer or fall.

Lantana — — 1-1.25%

Apply at or beyond the bloom stage of growth. Use the higher application rate for plants that have reached the woody stage of growth.

Lespedeza 3-5 3-20 2%

Apply when most plants have reached the early bud stage.

Milkweed, common 3 3-40 2%

Apply when most plants have reached the late bud to flower stage of growth.

Muhly, wirestem 1-2 3-40 2%

Use 1 quart of this product in 3 to 10 gallons of water per acre. Use 2 quarts of this product when applying 10 to 40 gallons of water per acre or in pasture, sod, or noncrop 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 3-5 3-20 2%

Apply when most plants are in the early bud stage.

Napiergrass 3-5 3-20 2%

Apply when most plants are in the early head stage.

Nightshade, silverleaf 2 3-10 2%

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, yellow 0.5-3 3-40 1-2%

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 which have not germinated will not be controlled and may germinate following treatment. Repeat treatments will be required for long-term control of ungerminated tubers.

Sequential applications: 1 to 2 quarts of this product in 3 to 10 gallons of water per acre will also provide control. Make applications when a majority of the plants are in the 3 to 5-leaf stage (less than 6 inches tall). Repeat this application, as necessary, when newly emerging plants reach the 3 to 5-leaf stage. Subsequent applications will be necessary for long-term control.

For partial control of existing plants, apply 1 pint to 2 quarts of this product in 3 to 40 gallons of water per acre. Treat when plants have 3 to 5 leaves and most are less than 6 inches tall. Repeat treatments will be required to control subsequent emerging plants or regrowth of existing plants.

Orchardgrass 1-2 3-40 2%

Apply 2 quarts of this product in 10 to 40 gallons of water per acre when most plants have reached boot-to-early seedhead stage of development. For partial control in pasture or hay crop renovation, apply 1 to 1.5 quarts of this product in 3 to 10 gallons of water per acre. Apply to actively growing plants when most have reached 4 to 12 inches in height.

Orchardgrass sods going to no-till corn: Apply 1 to 1.5 quarts of this product in 3 to 10 gallons of water per acre. Apply to orchardgrass that is a minimum of 12 inches tall for spring applications and 6 inches tall for fall applications. Allow at least 3 days following application before planting. A sequential application of atrazine will be necessary for optimum results.

Pampasgrass — — 1.5-2%

Pampasgrass should be at or beyond the boot stage of growth. Thorough coverage is necessary for best control.

**PERENNIAL WEEDS RATE TABLE 65**

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**PERENNIAL WEEDS RATE TABLE 66**

Weed Species	Rate (QT/A)	Water Volume (GPA)	Hand-Held % Solution
Paragrass	3-5	3-20	2%

Apply when most plants are in the early head stage.

Phragmites	3-5	10-40	1-2%
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For partial control. For best results, treat during late summer or fall months or when plants are actively growing and in full bloom. Treatment before or after this stage may lead to reduced control. Due to the dense nature of the vegetation, which may prevent good spray coverage or uneven stages of growth, repeat treatments may be necessary to maintain control. Visual control symptoms will be slow to develop.

Poison hemlock	—	—	1-2%
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Apply as a spray-to-wet treatment. Optimum results are obtained when plants are treated at the bud to full-bloom stage of growth.

Quackgrass	1-3	3-40	2%
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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 noncrop 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%
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For suppression, apply 24 fluid ounces of this product per acre at each of two applications 7 to 14 days apart or a single application of 2 quarts per acre. Apply recommended rates in 5 to 10 gallons of water per acre. Apply in late September or early October to plants which are at least 18 inches tall and have been growing 45 to 60 days since the last tillage operation. Make applications at least 1 week before a killing frost.

Reed, giant	—	—	2%
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Best results are obtained when applications are made in late summer to fall.

Ryegrass, perennial	1-3	3-40	1%
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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 noncrop, 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 the 1 quart per acre rate.

Smartweed, swamp	3-5	3-40	2%
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Apply when most plants have reached the early bud stage of growth.

Also for control, apply 16 fluid ounces of this product plus 0.5 pound a.i. of 2,4-D in 3 to 10 gallons of water per acre in the late summer or fall.

Spurge, leafy	—	3-10	2%
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For suppression, apply 16 fluid ounces of this product plus 0.5 pound a.i. 2,4-D in 3 to 10 gallons of water per acre in the late summer or fall. If mowing has occurred prior to treatment, apply when most of the plants are 12 inches tall.

Starthistle, yellow	2	10-40	2%
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Best results are obtained when applications are made during the rosette, bolting and early flower stages.

Sweet potato, wild	—	—	2%
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Partial control. Apply to plants that are at or beyond the bloom stage of growth. Repeat applications may be required.

Thistle, artichoke	—	—	2%
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Partial control. Apply to plants that are at or beyond the bloom stage of growth. Repeat applications may be required.

**PERENNIAL WEEDS RATE TABLE 67**

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**PERENNIAL WEEDS RATE TABLE 68**

Weed Species	Rate (QT/A)	Water Volume (GPA)	Hand-Held % Solution
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, apply 1 quart of this product, or 1 pint of this product plus 0.5 pound a.i. 2,4-D, in 3 to 10 gallons of water per acre in the late summer or fall after harvest, mowing or tillage. Allow rosette regrowth to a minimum of 6 inches in diameter before treating. Applications can be made as long as leaves are still green and plants are actively growing at the time of application. Allow 3 or more days after application before tillage.

Timothy	2-3	3-40	2%
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For best results, apply when most plants have reached the boot-to-head stage of growth.

Torpedograss	4-5	3-40	2%
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For partial control. Apply when most plants are at or beyond the seedhead stage of growth. Repeat applications will be required to maintain control. Fall treatments must be applied before frost.

Trumpet creeper	2	5-10	2%
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Partial control. Apply in late September or October, to plants which are at least 18 inches tall and have been growing 45 to 60 days since the last tillage operation. Make applications at least 1 week before a killing frost.

Vaseygrass	3-5	3-20	2%
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Apply when most plants are in the early head stage.

Velvetgrass	3-5	3-20	2%
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Apply when most plants are in the early head stage.

Wheatgrass, western	2-3	3-40	2%
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For best results, apply when most plants have reached the boot-to-head stage of growth.

**12.0 WOODY BRUSH AND TREES RATE TABLE**  
**Alphabetically by Species**

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.

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.

Weed Species	Rate (QT/A)	Water Volume (GPA)	Hand-Held % Solution
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Alder	3-4	3-40	1-1.5%
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For control

Ash	2-5	3-40	1-2%
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Partial control

Aspen, quaking	2-3	3-40	1-1.5%
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For control

**WOODY BRUSH AND TREES 69**



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**WOODY BRUSH AND TREES 70**

Weed Species	Rate (QT/A)	Water Volume (GPA)	Hand-Held % Solution
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Bearmat (Bearclover) 2-5 3-40 1-2%

Partial control

Beech 2-5 3-40 1-2%

Partial control

Birch 2 3-40 1%

For control

Blackberry 3-4 10-40 1-1.5%

For control. Make applications after plants have reached full leaf maturity. Best results are obtained when applications are made in late summer or fall. Applications may also be made after leaf drop and until a killing frost or as long as stems are green. After berries have set or dropped in late fall, blackberry can be controlled by applying a 3/4 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%

For control

Bracken 2-5 3-40 1-2%

For control

Broom; French, Scotch — — 1.5-2%

For control

Buckwheat, California — — 1-2%

For partial control. Thorough coverage of foliage is necessary for best results.

Cascara 2-5 3-40 1-2%

Partial control

Catsclaw — — 1-1.5%

Partial control

Ceanothus 2-5 3-40 1-2%

Partial control

Chamise — — 1%

For control. Thorough coverage of foliage is necessary for best results.

Cherry; bitter, black, pin 2-3 3-40 1-1.5%

For control

Coyote brush — — 1.5-2%

For control. Apply when at least 50 percent of the new leaves are fully developed.

Dogwood 2-5 3-40 1-2%

Partial control

Elderberry 2 3-40 1%

For control

Elm 2-5 3-40 1-2%

Partial control

Eucalyptus — — 2%

For control of eucalyptus resprouts, apply when resprouts are 6 to 12 feet tall. Ensure complete coverage. Avoid application to drought-stressed plants.

Florida holly (Brazilian Peppertree) 2-5 3-40 1-2%

Partial control

Gorse 2-5 3-40 1-2%

Partial control

Hasardia — — 1-2%

Partial control. Thorough coverage of foliage is necessary for best results.

Hawthorn 2-3 3-40 1-1.5%

For control

**WOODY BRUSH AND TREES 71**

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**WOODY BRUSH AND TREES 72**

Weed Species	Rate (QT/A)	Water Volume (GPA)	Hand-Held % Solution
Hazel	2	3-40	1%
For control			
Hickory	2-5	3-40	1-2%
Partial control			
Honeysuckle	3-4	3-40	1-1.5%
For control			
Hornbeam, American	2-5	3-40	1-2%
Partial control			
Kudzu	4	3-40	2%
For control. Repeat applications may be required to maintain control.			
Locust, black	2-4	3-40	1-2%
Partial control			
Madrone resprouts	—	—	2%
Partial control. Apply to resprouts that are 3 to 6 feet tall. Best results are obtained with spring/early summer treatments.			
Manzanita	2-5	3-40	1-2%
Partial control			
Maple, red	2-4	3-40	1-1.5%
For control, apply a 1 to 1.5 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%
For control. Apply when at least 50 percent of the new leaves are fully developed.			
Monkey flower	—	—	1-2%
Partial control. Thorough coverage of foliage is necessary for best results.			
Oak; black, white	2-4	3-40	1-2%
Partial control			
Oak, post	3-4	3-40	1-1.5%
For control			
Oak; northern, pin	—	—	1-1.5%
For control. Apply when at least 50 percent of the new leaves are fully developed			
Oak; southern red	2-3	3-40	1-1.5%
For control			
Persimmon	2-5	3-40	1-2%
Partial control			
Pine	2-5	3-40	1-2%
For control			
Poison ivy/ Poison oak	4-5	3-40	2%
For control. Repeat applications may be required to maintain control. Fall treatments must be applied before leaves lose green color.			
Poplar, yellow	2-5	3-40	1-2%
Partial control			
Redbud, eastern	2-5	3-40	1-2%
For control			
Rose, multiflora	2	3-40	1%
For control. Treatments should be made prior to leaf deterioration by leaf-eating insects.			
Russian olive	2-5	3-40	1-2%
Partial control			
Sage, black	—	—	1%
For control. Thorough coverage of foliage is necessary for best results.			
Sage, white	2-5	3-40	1-2%
Partial control			

**WOODY BRUSH AND TREES 73**

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Weed Species	Rate (QT/A)	Water Volume (GPA)	Hand-Held % Solution
Sage brush, California	—	—	1%
For control. Thorough coverage of foliage is necessary for best results.			
Salmonberry	2	3-40	1%
For control			
Salt-cedar	2-5	3-40	1-2%
For control			
Sassafras	2-5	3-40	1-2%
Partial control			
Sourwood	2-5	3-40	1-2%
Partial control			
Sumac; poison, smooth, winged	2-4	3-40	1-2%
Partial control			
Sweetgum	2-3	3-40	1-1.5%
For control			
Swordfern	2-5	3-40	1-2%
Partial control			
Tallowtree, Chinese	—	—	1%
For control. Thorough coverage of foliage is necessary for best results.			
Tan oak resprouts	—	—	2%
For partial control. Apply to resprouts that are less than 3 to 6 feet tall. Best results are obtained with fall applications.			
Thimbleberry	2	3-40	1%
For control			
Tobacco, tree	—	—	1-2%
Partial control			
Trumpet creeper	2-3	3-40	1-1.5%
For control			
Vine maple	2-5	3-40	1-2%
Partial control			
Virginia creeper	2-5	3-40	1-2%
For control			
Waxmyrtle, southern	2-5	3-40	1-2%
Partial control			
Willow	3	3-40	1%
For control			

**13.0 LIMIT OF WARRANTY AND LIABILITY**

This Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes set forth in the Complete Directions for Use label booklet ("Directions") when used in accordance with those Directions under the conditions described therein. NO OTHER EXPRESS WARRANTY OR IMPLIED WARRANTY OF FITNESS FOR PARTICULAR PURPOSE OR MERCHANTABILITY IS MADE. This warranty is also subject to the conditions and limitations stated herein.

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In case of an emergency involving this product,  
Call Collect, day or night, (314) 694-4000.

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Call Collect, day or night, (314) 694-4000.

**ACCEPTED**  
*with comment*  
**DEC - 8 1998**

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act,  
as amended, for the pesticide  
registered under  
EPA Reg. No. 524-475

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