

33270-16

8/17/2010

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Washington, D.C. 20460

OFFICE OF  
CHEMICAL SAFETY AND  
POLLUTION PREVENTION

Scott Baker  
Agent for United Suppliers, Inc.  
c/o Lighthouse Product Services  
3937 Cedarwood Drive  
Johnstown, CO 80534

AUG 17 2010

Subject: Label Amendment (add RR 2 Yield Soybeans, RR Corn 2, revise surfactant text)  
Tomahawk  
EPA Reg. No. 33270-16  
Application Dated July 1, 2010  
Resubmission Dated July 20, 2010

Dear Mr. Baker:

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable, provided you make the following changes:

1. Make the following changes to the "ROUNDUP READY CROPS" section on pages 27-28:
  - a. Change the first sentence to read "The following instructions or those separately published on **United Suppliers, Inc.** supplemental labeling..."
  - b. Change the second sentence to read "Do NOT combine these instructions with other **instructions** made for crop varieties that do not contain the Roundup Ready gene..."
  - c. Change the sentence to read "UNITED SUPPLIERS INTENDS USE OF THIS PRODUCT... **DESIGNATED** AS CONTAINING A ROUNDUP READY GENE ~~OR GLYPHOSATE TOLERANT GENE.~~"
  - d. Change the paragraph to read "Applying this product to crop varieties that are not designated as ~~glyphosate tolerant~~ **Roundup Ready** will result in severe crop injury and yield loss. Avoid contact with foliage... that do not contain a Roundup Ready ~~or glyphosate tolerant~~ gene, since severe injury or destructions will result."
  - e. Change the sentence to read "The Roundup Ready designation indicates that the crop variety contains a patented gene that provides ~~tolerance~~ **resistance** to this product."

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- f. Change the sentence to read "See the 'APPLICATION EQUIPMENT AND **TECHNIQUES**' section of this label...not intended for treatment."
- g. Change the sentence to read "ATTENTION: AVOID DRIFT. EXTREME CARE MUST BE USED...AND CROPS WHICH DO NOT CONTAIN A **ROUNDUP READY GLYPHOSATE-TOLERANT GENE.**"
- h. Change the sentence to read "Tank mixtures with other herbicides...or fact sheets published separately by **United Suppliers, Inc.**"

A stamped copy of your label is enclosed for your records. This label supercedes all previously accepted labels. You must submit one (1) copy of the final printed label before you release the product for shipment. Products shipped after eighteen (18) months from the date of this letter or the next printing of the label, whichever occurs first, must bear the new revised label. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA §6(e). Your release for shipment of the product constitutes acceptance of these conditions.

Sincerely,

*Jim Tompkins for*

Jim Tompkins  
Product Manager 25  
Herbicide Branch  
Registration Division (7505P)

30x64

# TOMAHAWK

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.

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

**ACTIVE INGREDIENT:**

*Glyphosate, N-(phosphonomethyl)glycine, in the form of its isopropylamine salt.....	41.0%
OTHER INGREDIENTS:.....	59.0%
<b>TOTAL</b>	<b>100.0%</b>

\*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.

## KEEP OUT OF REACH OF CHILDREN

## CAUTION

FIRST AID	
<b>IF IN EYES:</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.	

**PRECAUTIONARY STATEMENTS**  
**Hazards to Humans and Domestic Animals**  
**CAUTION**

Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling.

**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.

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

**EPA Reg. No. 33270-16**

**EPA Est. No. 42750-MO-001**

Manufactured For:  
United Suppliers  
Eldora, IA 50627

ACCEPTED  
with COMMENTS  
in EPA Letter Dated

NET CONTENTS  
Gals. (\_\_\_\_ Liters)

AUG 17 2010

040610-071910

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

33270-16

**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 exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

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

#### USER SAFETY RECOMMENDATIONS

Users should:

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

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

**PHYSICAL OR CHEMICAL HAZARDS:** Spray solutions of this product 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.

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

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

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

#### AGRICULTURAL USE REQUIREMENTS

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

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

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls, 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.

### STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Store above 10°F (-12°C) to keep product from crystallizing. Crystals will settle to the bottom. If allowed to crystallize, place in a warm room 68°F (20°C) for several days to redissolve and roll or shake container or recirculate in mini-bulk or bulk container to mix well before using.

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

**CONTAINER DISPOSAL:** Non-refillable containers (1, 2.5, 30 & 55 gallon): Do not reuse or refill this container. Offer for recycling, if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

(non-refillable <5 gallons): Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

(non-refillable >5 gallons): Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

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

Refillable container (250 gallon & bulk): Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

To clean the container before final disposal, empty the remaining contents from the container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinseate into application equipment or rinsate collection system. Repeat this rinsing process two more times.

### PRODUCT INFORMATION

**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 specified.~~ It may be applied through most standard industrial or field-type sprayers after dilution and thorough mixing with water or other carriers according to label instructions.

~~Do not add surfactants, additives containing surfactants, buffering agents or pH adjusting agents to 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 aboveground 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 specific weeds.

Always use the higher rate of this product per acre within the specified range when weed growth is heavy or dense or weeds are growing in an undisturbed (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 specified stage for treatment.

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

**Spray Coverage:** For best results, spray coverage should be uniform and complete. Do not spray 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 specified 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 prevents 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:** TOMAHAWK™ 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 specified in this label. Mixing this product with herbicides or other materials not specified 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.

**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 with Water**

This product mixes readily with water. Mix spray solutions of this product as follows: Fill the mixing or spray tank with the required amount of water. Add the specified amount of this product near the end of the filling process and mix well. Use caution to avoid siphoning back into the carrier source. Use approved anti-back-siphoning devices 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.

**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 "PRODUCT INFORMATION" for additional precautions.

### Mixing for Hand-held Sprayers

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

#### Spray Solution

Desired Volume	Amount of TOMAHAWK™					
	½%	1%	1 1/2%	2%	5%	10%
1 Gal	2/3 oz	1 1/3 oz	2 oz	2 2/3 oz	6 ½ oz	13 oz
25 Gal	1 pt	1 qt	1 ½ qt	2 qt	5 qt	10 qt
100 Gal	2 qt	1 gal	1 ½ gal	2 gal	5 gal	10 gal

2 tablespoons = 1 fluid ounce

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

#### Surfactant

##### OPTIONAL STATEMENTS

No additional surfactant in the spray solution is needed or recommended. This includes additives containing surfactants, buffering agents or pH adjusting agents when [INSERT BRAND NAME] is the only pesticide used unless otherwise directed.

##### OR

Additional surfactants labeled for use with herbicides may be used. Do not reduce application rates of this herbicide when adding surfactants. Read and carefully observe cautionary statements and other information appearing on the additives label.

#### Ammonium Sulfate

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

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

#### Colorants 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.

#### 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.

#### APPLICATION EQUIPMENT AND TECHNIQUES

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

This product may be applied with the following application equipment:

**Aerial** – Fixed Wing and Helicopter

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



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

## AERIAL SPRAY DRIFT MANAGEMENT

### SPRAY DRIFT MANAGEMENT

AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator is responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they must be observed.

**INFORMATION ON DROPLET SIZE:** The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (See Wind, Temperature and Humidity, and Temperature Inversions).

### CONTROLLING DROPLET SIZE

- Volume – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of nozzles – Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation – Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- Nozzle Type – Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

**BOOM LENGTH:** For some use patterns, reducing the effective boom length to less than  $\frac{3}{4}$  of the wingspan or rotor length may further reduce drift without reducing swath width.

**APPLICATION HEIGHT:** Applications must not be made at a height greater than 10 feet above the top of the target plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

**SWATH ADJUSTMENT:** When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for

this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.)

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

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

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

**SENSITIVE AREAS:** The pesticide must only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

**Aerial Equipment**

DO NOT APPLY THIS PRODUCT USING AERIAL SPRAY EQUIPMENT EXCEPT UNDER CONDITIONS AS SPECIFIED WITHIN THIS LABEL. This product plus dicamba tank mixtures may not be applied by air in California.

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

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.

**For Aerial Application in California Only**

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

1. In fallow and reduced tillage systems prior to the emergence or transplanting of labeled crops.
2. In alfalfa and pasture renovation applications.
3. Over-the-top applications in Roundup Ready<sup>®</sup> corn and cotton.
4. Preharvest in alfalfa, corn, cotton, wheat, Roundup Ready<sup>®</sup> corn and Roundup Ready<sup>®</sup> cotton.

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

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

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

**DO NOT EXCEED A MAXIMUM RATE OF 1 QUART PER ACRE OF THIS PRODUCT WHEN MAKING APPLICATIONS BY AIR IN ALFALFA, CORN, COTTON, WHEAT, ROUNDUP READY<sup>®</sup> CORN AND ROUNDUP READY<sup>®</sup> COTTON PRIOR TO HARVEST. THIS RESTRICTION ALSO APPLIES TO OVER-THE-TOP APPLICATIONS IN ROUNDUP READY<sup>®</sup> CORN AND COTTON.**

**Aerial Equipment**

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

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

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

**For Aerial Application in Fresno County, California Only From February 15 through March 31 Only**

**Applicable Area:**

The area contained inside the following boundaries within Fresno County, California.

- North: Fresno County line
- South: Fresno County line
- East: State Highway 99
- West: Fresno County line

**Information:**

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

Observe the following directions to minimize off-site movement during aerial application of this product. Minimization of off-site movement is the responsibility of the grower, Pest Control Advisor and aerial applicator.

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

**Aerial Applicator Training and Equipment:** Aerial application of this product is limited to pilots who have successfully completed a Fresno County Agricultural Commissioner and California Department of Pesticide Regulation approved training program for aerial application of herbicides. All aircraft must be inspected, critiqued in flight and certified at a Fresno County Agricultural Commissioner approved fly-in.

Test and calibrate spray equipment at intervals sufficient to insure that proper rates of herbicides and adjuvants are being applied during commercial use. Applicator must document such calibrations and testing. Demonstration of performance at Fresno County Agricultural Commissioner approved fly-ins constitutes such documentation, or other written records showing calculations and measurements of flight and spray parameters acceptable to the Fresno County Agricultural Commissioner.

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

Note: For aerial application from April 1 through February 14, refer to the **"For Aerial Application in California Only"** section of this label.

**Arkansas Only**

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

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

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

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

Do not apply this product when wind speeds are in excess of 10 miles per hour.

Do not apply when there is a low-level inversion where fine spray particles could be suspended in still air and move outside the target area when the inversion layer moves. These conditions may occur when wind speeds are less than 2 mph.

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

1. Do not apply within 100 feet of any desirable vegetation or crops.
2. If wind up to 5 miles per hour is blowing toward desirable vegetation or crops, do not apply within 500 feet upwind of the desirable vegetation or crops.
3. Winds blowing from 5 to 10 miles per hour toward desirable vegetation or crops will likely require buffer zones in excess of 500 feet.

**Arkansas, Louisiana, Mississippi, Missouri, and Tennessee Only**

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

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

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

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

**Hand-Held and High-Volume Equipment:** Apply to foliage of vegetation to be controlled. For applications made on a spray-to-wet basis, spray coverage 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 seedhead formation in grass or bud formation in broadleaf weeds. For annual weeds over 6 inches tall, or unless otherwise specified, use a 1 percent solution.

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

When using application methods 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.

**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 directed in cropping systems.

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

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

A wiper or sponge applicator applies the herbicide solution onto 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 directed, this product **CONTROLS** the following weeds:

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

When applied as directed, 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	

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

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

For the control of annual weeds with hand-held CDA units, apply a 20 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 any other green tissue of desirable vegetation, as damage or destruction may result.

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### CROPS (Alphabetical)

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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.

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

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### Alfalfa, Clover, and Other Forage Legumes

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

**TYPES OF APPLICATIONS:** Dormant, preplant, preemergence, at-planting, spot treatment, wiper applicators, renovation, preharvest

#### **Dormant (Alfalfa only)**

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

**PRECAUTIONS, RESTRICTIONS:** Do not use ammonium sulfate when spraying dormant alfalfa with TOMAHAWK™. Do not use this product where a slight yield reduction in the first cutting of alfalfa cannot be tolerated. Do not make more than one application per year. Allow 36 hours after application before grazing livestock or harvesting. Slight discoloration of the alfalfa may occur, but the alfalfa will regreen and regrow under moist soil conditions as effects of this product wear off. Application of this product can cause crop injury. Any crop injury is the sole responsibility of the applicator.

#### **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 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. Use up to 1 quart of this product per acre. 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.

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**Asparagus**

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**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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**Cereal Crops**

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**LABELED CROPS:** Barley, Buckwheat, Millet (Pearl, Proso), Oats, Rice, 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 floodwater.

**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.

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

USE INSTRUCTIONS: For ground applications, use 3 to 5 gallons of water per acre. For aerial applications, use 2 to 3 gallons of water per acre.

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

**Red Rice Control Prior To Planting Rice (Texas only)**

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

PRECAUTIONS, RESTRICTIONS: Avoid spraying during low humidity conditions, as reduced control may result. DO NOT TREAT RICE FIELDS OR LEVEES WHEN THE FIELDS CONTAIN FLOOD WATER. DO NOT RE-FLOOD TREATED FIELDS FOR 8 DAYS FOLLOWING APPLICATION.

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**Christmas Trees**


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**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 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.

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

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**Citrus Crops**

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

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

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

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

For goatweed, apply 2 to 3 quarts of this product per acre. Apply in 20 to 30 gallons of water per acre when plants are actively growing. Use 2 quarts per acre when plants are less than 8 inches tall and 3 quarts 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	TOMAHAWK™ 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.

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**Conservation Reserve Program (CRP)**

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**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.

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**Corn**

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

**TYPES OF APPLICATIONS:** Preplant, preemergence, at-planting, spot treatment, hooded sprayers, preharvest, 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 direction.

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 specifications 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.

**Hooded Sprayers**

**USE INSTRUCTIONS:** This product may be used through hooded sprayers for weed control between the rows of corn (all), including field corn, sweet corn and popcorn. Only hooded sprayers that completely enclose the spray pattern may be used.

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

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

Follow these requirements:

- The spray hoods must be operated on the ground or skimming across the ground.
- Do not apply more than 1 quart of this product per acre per application.
- Corn must be at least 12 inches tall, measured without extending leaves.
- Leave at least an 8 inch untreated strip over the drill row. For example, if the crop row width is 38 inches, the maximum width of the spray hood should be 30 inches.
- Maximum tractor speed: 5 mph.
- Maximum wind speed: 10 mph.
- Use low-drift nozzles.

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

**PRECAUTIONS, RESTRICTIONS:** Contact of this product in any manner to any vegetation to which treatment is not intended may cause damage. Such damage shall be the sole responsibility of the applicator. Do not graze or feed corn forage or fodder following applications of this product through hooded sprayers. Do not apply more than 3 quarts of this product per acre per year for hooded sprayer applications.

#### **Preharvest**

**USE INSTRUCTIONS:** Make applications at 35 percent grain moisture or less. Ensure that maximum kernel fill is complete and the corn is physiologically mature (black layer formed). For ground applications, apply up to 3 quarts of this product per acre. For aerial applications, apply up to 1 quart of this product per acre.

**PRECAUTIONS, RESTRICTIONS:** It is not directed that corn grown for seed be treated because a reduction in germination or vigor may occur. Allow a minimum of 7 days between application and harvest.

#### **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.

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### **Cotton**

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

#### **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>®</sup> 6, Folex<sup>®</sup>, or Prep<sup>™</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.

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**Fallow Systems**

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**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 DICAMBA TANK MIXTURES BY AIR IN CALIFORNIA.

Refer to the specific product labels for crop rotation restrictions and cautionary statements of all products used in tank mixtures. Some crop injury may occur if Banvel<sup>®</sup> 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<sup>®</sup> 2XL per acre will control the following weeds with the maximum height or length indicated: 3" – common cheeseweed, chickweed, groundsel; 6" – London rocket, shepherdspurse.

16 fluid ounces of this product plus 2 to 3 oz of Goal<sup>®</sup> 2XL per acre will control the following weeds with the maximum height or length indicated: 6" – common cheeseweed, groundsel, marestail (*Conyza canadensis*), 12" – chickweed, London rocket, shepherdspurse.

**Aid-to-tillage**

USE INSTRUCTIONS: This product may be used in conjunction with tillage practices in fallow systems or preplant to labeled crops to control downy brome, cheat, volunteer wheat, tansy mustard and foxtail.

Apply 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.

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### Grain Sorghum (Milo)

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

#### **Preharvest**

**USE INSTRUCTIONS:** Make applications at 30% grain moisture or less.

**PRECAUTIONS, RESTRICTIONS:** Do not apply more than 2 quarts of this product per acre. Allow a minimum of 7 days between application and harvest of sorghum. It is not directed that sorghum grown for seed be treated, as a reduction in germination or vigor may occur. The use of this product for preharvest grain sorghum (Milo) is not registered in California.

#### **Post-harvest**

**USE INSTRUCTIONS:** This product may be applied after harvest of grain sorghum. Higher rates may be required 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.

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### Grass Seed Production

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

#### **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 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.

**Shielded Sprayer (Idaho, Oregon, and Washington Only)**

USE INSTRUCTIONS: When applied using shielded applicator equipment designed to prevent direct contact, movement of spray droplets, or mist onto desirable grasses grown for seed production, this product may be used to control labeled weeds. Use of low spray pressure through low pressure nozzles will minimize the potential of spray drift. Apply 1 to 3 quarts of this product as a broadcast spray in 10 to 20 gallons of total spray volume per acre. Uniform planting in straight rows aid in shielded sprayer applications. Best results are obtained when the grass seed crop is small enough to easily pass by or through the protective shields.

PRECAUTIONS, RESTRICTIONS: Grower assumes all responsibility for crop losses from misapplication.

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**Herbs**

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**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.

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**Pastures**

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**TYPES OF PASTURES:** Bahiagrass, bermudagrass, bluegrass, brome, fescue, orchardgrass, ryegrass, timothy, wheatgrass, alfalfa and clover. In Hawaii, pastures include kikuyu grass, pangola grass, and guineagrass

**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.

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**Peanuts**

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**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.

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**Small Fruits and Berries**

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

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

**USE INSTRUCTIONS:** This product may be applied as a preplant 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.

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**Soybeans**

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**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 <sup>®</sup>	LISSO <sup>®</sup> /ALACHLOR	PROWL <sup>®</sup>
COMMAND <sup>®</sup>	LINEX <sup>®</sup>	PURSUIT <sup>®</sup>
DUAL <sup>®</sup>	LOROX <sup>®</sup> /LINURON	PURSUIT <sup>®</sup> PLUS
DUAL <sup>®</sup> II	LOROX <sup>®</sup> PLUS	SCEPTER <sup>®</sup>
FRONTIER <sup>®</sup>	MICRO-TECH <sup>®</sup>	SENCOR <sup>®</sup> /LEXONE <sup>®</sup>
FUSION <sup>®</sup>	PARTNER <sup>®</sup>	SQUADRON <sup>®</sup>
GEMINI <sup>®</sup>	PREVIEW <sup>®</sup>	TURBO <sup>®</sup>

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 directions 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 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.

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**Sugarcane**

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**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.

### 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.

### Tree, Nut and Vine

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

**NOTE:** THIS SECTION GIVES 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 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<sup>®</sup> 2XL may be used for annual weeds in middles between rows of citrus crops, tree fruits, tree nuts and vine crops. This mixture is for 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<sup>®</sup> 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<sup>®</sup> 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.

DEVINOL<sup>®</sup> 50 DF  
DIREX<sup>®</sup> 4L  
GOAL<sup>®</sup> 2XL  
KARMEX<sup>®</sup> DF  
KROVAR<sup>®</sup> I

PRINCEP<sup>®</sup> CALIBER 90  
SIMAZINE 4L  
SIMAZINE 80W  
SIM-TROL<sup>™</sup> 4L  
SOLICAM<sup>®</sup> DF

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KROVAR® II  
PROWL®

SULFLAN® AS  
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.

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

**Perennial grass suppression**

This product will suppress perennial grasses such as bahiagrass, 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.

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.

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**Tree Fruits**

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

2800664

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

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

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**Tree Nuts**

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

**TYPES OF APPLICATIONS:** Weed control, middles (between rows of trees), strips (in row of trees), selective equipment.

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

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

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**Tropical Crops**

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**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 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.

For direct application to bananas (bananacide), remove fruit prior to treatment.

Do not feed or graze treated pineapple forage following application.

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**Vegetable Crops**

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**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.

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

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

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**Vine Crops**

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

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

**NOTE:** FOR USE DIRECTIONS, SEE THE "TREE, NUT AND VINE" 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.

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**ROUNDUP READY® CROPS**

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The following instructions or those separately published on Albaugh, Inc. Supplemental labeling include all applications which can be made onto the specified Roundup Ready crops during the complete cropping season. Do NOT combine these instructions with other recommendations made for crop varieties that do not contain the Roundup Ready gene, in the ANNUAL AND PERENNIAL CROPS (ALPHABETICAL)" section of this label.

UNITED SUPPLIERS INTENDS USE OF THIS PRODUCT FOR POSTEMERGENCE APPLICATION ONLY ON CROP VARIETIES DESIGNATED AS CONTAINING A ROUNDUP READY GENE OR GLYPHOSATE TOLERANT GENE.

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

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

NOTE: Roundup Ready seed, and the method of selectivity controlling weeds using glyphosate on a Roundup Ready crop, are protected under several U.S. Patents. A license to use Roundup Ready seed must be obtained prior to use.

For Ground Applications with broadcast equipment, apply this product in 5 to 20 gallons of spray solution per acre. Carefully select proper nozzle and spray pressure to avoid spraying a fine mist. For best results with ground application equipment use flat spray nozzles. Check for even distribution of spray droplets. For Aerial Applications apply this product in 3 to 15 gallons of water per acre. See the 'APPLICATION EQUIPMENT AND TECHNOLOGIES' section of this label for procedures to avoid spray drift that may cause injury to any vegetation not intended for treatment. Use of appropriate buffer zones will help prevent injury to adjacent vegetation.

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

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

Tank mixtures with other herbicides, insecticides, fungicides, micronutrients or fertilizers may result in reduced weed control or crop injury and are NOT recommended for over-the-top applications of this product unless otherwise notes in this product label, supplemental labeling or fact sheets published separately by Albaugh.

Ammonium sulfate may be mixed with this product for applications to Roundup Ready crops. Refer to the "MIXING" section for use instructions for ammonium sulfate.

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

**THOROUGHLY CLEAN THE SPRAY TANK AND ALL LINES AND FILTERS TO ELIMINATE POTENTIAL**

**CONTAMINATION FROM OTHER HERBICIDES PRIOR TO MIXING AND APPLYING THIS PRODUCT.**

NOTE: The following recommendations are based on a clean start at planting by using a burndown application or tillage to control existing weeds before crop emergence. In no-till and stale seedbed systems, a preplant burn-down treatment of this product is recommended to control existing weeds prior to crop emergence. Some weeds, such as black nightshade, broadleaf signalgrass, sicklepod, Texas panicum, sandbur, annual morningglory, woolly cupgrass, shattercane, wild proso millet, burcucumber, and giant ragweed with multiple germination times or suppressed (stunted) weeds may require a second application of this product for complete control. The second application should be made after some regrowth has occurred and at least 10 days after a previous application of this product.

### **SOYBEANS WITH THE ROUNDUP READY® GENE**

UNITED SUPPLIERS INTENDS USE OF THIS PRODUCT FOR POSTEMERGENCE APPLICATION ONLY ON SOYBEAN VARIETIES DESIGNATED AS CONTAINING THE ROUNDUP READY® GENE.

- Applying this product to soybean varieties which are not designated as Roundup Ready® will result in severe crop injury and yield loss. Avoid contact with foliage, green stems, or fruit of crops, or any desirable plants which do not contain the Roundup Ready® gene, since severe injury or destruction will result.
- Roundup Ready® varieties must be purchased from an authorized seed supplier. Crop safety and weed control performance are not warranted by United Suppliers when this product is used in

conjunction with "brown bag" or "bin run" soybean seed saved from previous year's production and replanted.

- The Roundup Ready® designation indicates that the soybean contains a patented gene which provides tolerance to United Suppliers's Glyphosate brand herbicides. Information on Roundup Ready® soybeans may be obtained from your seed supplier.

**NOTE:** The use of this product for in-crop applications over Roundup Ready® soybean is not registered in California.

**Application Instructions**

This product may be applied postemergence to Roundup Ready® soybeans from the cracking stage throughout flowering.

Allow a minimum of 14 days between application and harvest of soybeans.

**Maximum Allowable Yearly Rates**

**Preplant:** Maximum amount of this product which can be applied prior to crop emergence is 5 quarts/A.

**In-crop:** Maximum combined total of multiple in-crop applications from cracking throughout flowering is 3 quarts/A. The maximum rate for any single in-crop application is 2 quarts/A. The maximum combined total of this product which can be applied during flowering is 2 quarts/A.

**Preharvest:** Maximum amount of this product that can be applied after loss of green color in soybean pods until 14 days before harvest is 1 quart/A. The combined total of in-crop and preharvest TOMAHAWK™ applications may not exceed 3 quarts/A.

**Cropping Season:** Combined total per year for all applications may not exceed 8 quarts/A.

When applied as directed, this product will control labeled annual grasses and broadleaf weeds in Roundup Ready® soybeans. Many perennial grasses and broadleaf weeds will be controlled or suppressed with one or more applications of this product.

There are no rotational crop restrictions following applications of this product.

**For ground applications:** Use the specified rates of this product in 5 to 20 gallons of spray solution per acre as a broadcast spray. Carefully select proper nozzle and spray pressure to avoid spraying a fine mist. For best results with ground application equipment, use nozzles which provide a flat fan pattern. Check for even distribution of spray droplets.

**For aerial applications:** Use the specified rates of this product in 3 to 15 gallons of spray solution per acre. Do not exceed 1 quart of this product per acre. DO NOT APPLY DURING LOW LEVEL INVERSION CONDITIONS, WHEN WINDS ARE GUSTY OR UNDER ANY OTHER CONDITIONS WHICH FAVOR DRIFT. DRIFT MAY CAUSE DAMAGE TO ANY VEGETATION CONTACTED TO WHICH TREATMENT IS NOT INTENDED. MAINTAIN APPROPRIATE BUFFER ZONES TO PREVENT INJURY TO ADJACENT DESIRABLE VEGETATION.

AERIAL APPLICATIONS ON ROUNDUP READY® SOYBEANS MAY BE MADE ONLY IN THE FOLLOWING STATES: ALABAMA, ARKANSAS, FLORIDA, GEORGIA, KANSAS, LOUISIANA, MISSISSIPPI, MISSOURI (BOOT-HEEL ONLY), NORTH CAROLINA, OKLAHOMA, SOUTH CAROLINA, TENNESSEE AND TEXAS.

**Annual Weed Rate Tables**

The following rate specifications will provide control of labeled grasses and broadleaf weeds in conventional and no-till soybean production systems. Refer to the "ANNUAL WEEDS RATE TABLES ALPHABETICALLY BY SPECIES" on this label for rate for specific annual weeds.

United Suppliers will not warrant crop safety or weed control when Roundup Ready® soybeans are treated with herbicides not specified on this label. Because of the potential for: 1) crop injury, 2) poor weed control from antagonism, and/or 3) rotational crop restrictions, herbicides not specified on this label should not be used, whether applied preemergence or applied postemergence as a tank mixture with TOMAHAWK™.

32oz/A

This product may be used up to 64 fluid ounces per acre in any single application for control of annual weeds, where heavy weed densities exist. The maximum combined total of this product which can be applied during flowering is 64 fluid ounces per acre.

NOTE: The following specifications are based on a clean start at planting by using a burn down application or tillage to control existing weeds before crop emergence. In no-till and stale seedbed systems, a preplant burn-down treatment of 16-64 fluid ounces per acre of this product can be used to control existing weeds prior to crop emergence.

**Midwest/Mid-Atlantic Instructions**

**Narrow row or drilled soybeans:** A single in-crop application of this product will provide effective control of labeled weeds. For best results, use an initial application of 32 fluid ounces per acre (fl oz/A) on 4-8" weeds. Weeds will generally be 4-8" tall 3 to 5 weeks after planting. If the initial application is delayed and weeds are 8-18" tall, use 48 fl oz/A for best results.

Under adverse growing conditions such as drought, hail, wind damage or a poor soybean stand that slows or delays canopy closure, a sequential application of this product at 16 to 32 fluid ounces per acre may be necessary to control late flushes of weeds. The combined total application in-crop must not exceed 64 fluid ounces per acre.

**Wide row soybeans:** An in-crop application of this product will provide effective control of the initial stand of labeled weeds. For best results, use an initial application of 32 fluid ounces per acre (fl oz/A) on 4-8" weeds. Weeds will generally be 4-8" tall 3 to 5 weeks after planting. If new flushes of weeds occur, they can be controlled by sequential applications of this product.

**Initial Treatment**

Weed Height (inches)	Rate (fluid oz/A)
8	32
18	48

**Sequential Application (if needed)\***

Weed Height (inches)	Rate (fluid oz/A)
1-3	16
3-6	24
6-12	32

\*Combined total application in-crop not to exceed 96 fluid ounces per acre.

Giant ragweed: Apply 32 fluid oz/A when the weed is 8-12" tall to avoid the need for sequential application.

Groundcherry, ladythumb, Pennsylvania smartweed and morningglory: Apply 32 fl oz/A to weeds 3-6" tall.

Some weeds, such as black nightshade, woolly cupgrass, shattercane, wild proso millet, burcucumber, and giant ragweed, with multiple germination times may require a sequential application of this product. Suppressed or stunted weeds may also require sequential applications. Sequential applications should be made after some regrowth has occurred. Use a minimum of 16 fluid ounces of this product per acre for sequential applications. The combined total of all in-crop postemergence treatments must not exceed 96 fluid ounces per acre.

**Southeast Instructions**

**Narrow row, drilled, or wide-row soybeans:** An in-crop application of this product will provide effective control of the initial stand of labeled weeds. For best results, use an initial application of 32 fluid ounces per acre (fl oz/A) on 3-6" weeds. Weeds will generally be 3-6" tall 2 to 3 weeks after planting.

Weed Height (inches)	Rate (fluid oz/A)
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3-6	32
6-12	48

Under adverse growing conditions such as drought, hail, wind damage or a poor soybean stand that slows or delays canopy closure, a sequential application of this product at 16 to 32 fluid ounces per acre may be necessary to control late flushes of weeds.

**Sequential Application (if needed)\***

Weed Height (inches)	Rate (fluid oz/A)
2-3	16
3-6	24
6-12	32

\*Combined total application in-crop not to exceed 96 fluid ounces per acre.

Florida pusley, hemp sesbania and spurred anoda: Apply 32 fl oz/A to weeds 2-4" for the initial application. Apply 32 fl oz/A when these weeds are 3-6" tall if a sequential application is necessary. Morningglory, black nightshade, groundcherry, and Pennsylvania smartweed: Apply 24 fl oz/A on 1-3" weeds, 32 fl oz/A on 3-6" weeds, or 48 fl oz/A on 6-12" weeds for the initial application.

Some weeds, such as black nightshade, broadleaf signalgrass, Texas panicum, burcumber, and sicklepod, with multiple germination times may require a sequential application of this product. Suppressed or stunted weeds may also require sequential applications. Sequential applications should be made after some regrowth has occurred. Use a minimum of 16 fluid ounces of this product per acre for sequential applications. The combined total of all in-crop postemergence treatments must not exceed 96 fluid ounces per acre.

**Delta/Mid-South Instructions**

**Narrow row, drilled, or wide row soybeans:** An in-crop application of this product will provide effective control of the initial stand of labeled weeds. A sequential application will be required to control new flushes of weeds. For best results, use an initial application of 32 fluid ounces per acre (fl oz/A) on 2-4" weeds. Weeds will generally be 2-4" tall 2 to 3 weeks after planting.

**Initial Treatment**

Weed Height (inches)	Rate (fluid oz/A)
2-4	32
5-12	48

**Sequential Application\***

Weed Height (inches)	Rate (fluid oz/A)
2-3	16
3-6	24
6-12	32

\*Combined total application in-crop not to exceed 96 fluid ounces per acre.

Hemp sesbania and spurred anoda: Apply a sequential treatment of 32 fl oz/A at 3-6" tall weeds if necessary.

Some weeds, such as black nightshade, broadleaf signalgrass, Texas panicum, burcumber, and sicklepod, with multiple germination times may require a sequential application of this product. Suppressed or stunted weeds may also require sequential applications. Sequential applications should be made after some regrowth has occurred. Use a minimum of 16 fluid ounces of this product per acre for sequential applications. The combined total of all in-crop postemergence treatments must not exceed 96 fluid ounces per acre.

**Perennial Weeds Rate Instructions**

A 32 to 64 fluid ounces per acre rate (single or multiple applications) of this product will control or suppress perennial weeds such as: bermudagrass, Canada thistle, common milkweed, field bindweed, hemp dogbane, horsenettle, marestalk (horseweed), nutsedge, quackgrass, rhizome johnsongrass, redvine, trumpet creeper, swamp smartweed, and wirestem muhly.

For best results, allow perennial weed species to achieve at least 6" of growth before spraying with TOMAHAWK™. For additional information on perennial weeds, see the "PERENNIAL WEEDS RATE TABLE ALPHABETICALLY BY SPECIES" on this label. For some perennial species, repeat applications may be required to eliminate crop competition throughout the growing season.

**FOR WEED CONTROL APPLICATIONS IN ROUNDUP READY® 2 YIELD SOYBEANS**

UNITED SUPPLIERS INTENDS USE OF THIS PRODUCT FOR POSTEMERGENCE APPLICATION ONLY ON SOYBEAN VARIETIES DESIGNATED AS CONTAINING A ROUNDUP READY GENE.

The Roundup Ready designation indicates that the soybean contains a patented gene, which provides tolerance to this product. Information on Roundup Ready 2 Yield Soybeans may be obtained from your seed supplier or United Suppliers representative. Roundup Ready crop varieties must be purchased from an authorized licensed seed supplier.

See the "ROUNDUP READY CROPS" section of this label booklet for precautionary instructions for use in Roundup Ready crops. Do NOT combine these instructions with other directions made for crop varieties that do not contain a Roundup Ready gene listed in the "ANNUAL AND PERENNIAL CROPS (Alphabetical)" sections of this label booklet.

**ROUNDUP READY 2 YIELD SOYBEANS**

**Pre-plant, Pre-emergence, At-Planting**

This product may be applied before, during or after planting Roundup Ready 2 Yield soybeans.

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

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*[Insert active ingredient(s) or brand name of product(s) containing the following active ingredients that, at the time of planting, are registered for use preplant, at-planting and/or preemergence to soybeans:*

- 2,4-D,
- alachlor (INTRRO, Micro-Tech),
- atrazine,
- carfentrazone-ethyl (Aim),
- chlorimuron ethyl (Canopy, Canopy EX),
- clethodim,
- clomazone (Command),
- cloransulam-methyl (FirstRate),
- dimethenamid-p (Outlook),
- Fenoxypyr-p-ethyl (Fusion),
- fluazifop-p-butyl (Fusion),
- flufenacet (Axiom, Domain),
- flumetsulam (Python),
- flumiclorac pentyl ester (Resource),
- flumioxazin (Valor, Gangster),
- fomesafen (Reflex, Flexstar),
- imazaquin (Scepter, Squadron),
- imazethapyr,
- lactofen (Cobra),

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linuron,  
metolachlor,  
s-metolachlor (Dual MAGNUM, Dual II MAGNUM),  
metribuzin,  
pendimethalin (Prowl, Prowl H2O),  
sulfentrazone (Spartan, Authority, Gauntlet),  
tribenuron methyl,  
trifluralin,  
quizalofop P-ethyl (Assure II)

Maximum quantity of this product that may be applied for all preplant, at-planting and preemergence applications combined is 5.0 quarts per acre per season. Refer to individual tank mixture product label for restrictions and precautions; use according to the most restrictive precautionary statements for each product in the tank mixture.

**Post-emergence (In-Crop)**

This product must be used to control annual grasses and broadleaf weeds in Roundup Ready 2 Yield soybean. Application of this product can be made from emergence (cracking) through flowering (R2 stage soybeans). R2 stage soybean ends when a pod 5 millimeters (3/16 inch) long appears at one of the four uppermost nodes on the main stem with fully developed leaf (R3 stage). Refer to the "ANNUAL WEEDS RATE SECTION" of this label for application rates for specific annual weeds. Make an initial application of 22 fluid ounces per acre on 2 to 8-inch tall weeds. Weeds will generally be 2 to 8 inches tall, 2 to 5 weeks after planting. If the initial application is delayed and weeds are larger, apply a higher specified rate of this product. This product may be applied up to 2 quarts per acre as a single, in-crop application for control of annual weeds and where dense weed populations exist.

A 1 to 2 quart per acre rate (single or multiple applications) of this product will control or suppress perennial weeds, such as, bermudagrass, Canada thistle, common milkweed, field bindweed, hemp dogbane, horsenettle, mare's tail (horseweed), nutsedge, quackgrass, rhizome johnsongrass, redvine, trumpetcreeper, swamp smartweed and wirestem muhly. For best results, allow perennial weed species to achieve at least 6 inches of growth before spraying with this product.

Under adverse growing conditions such as drought, hail, or wind damage, or a poor soybean stand that slows or delays canopy closure, a sequential application of this product may be necessary to control late flushes of weeds. IN THE SOUTHERN STATES, A SEQUENTIAL APPLICATION OF THIS PRODUCT WILL BE REQUIRED TO CONTROL NEW FLUSHES OF WEEDS IN THE ROUNDUP READY 2 YIELD SOYBEAN CROP. To control giant ragweed, apply 22 fluid ounces of this product per acre when the weed is 8 to 12 inches tall to increase control and possibly avoid the need for a sequential application.

TANK MIXTURES: This product may be tank-mixed with the following products and applied postemergence (in-crop) over the top of Roundup Ready 2 Yield soybean. Ensure that the specific product being used is labeled for application postemergence (in-crop) to soybean. Read and follow label directions of all products in the tank mix.

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*Insert active ingredient(s) or brand name of product(s) containing the following active ingredients that, at the time of printing, are registered for use postemergence (in-crop) to soybeans:*

acifluorfen (Ultra Blazer),  
bentazon (Basagran),  
chlorimuron ethyl (Classic),  
clethodim,  
cloransulam-methyl (FirstRate),  
fenoxaprop-p-ethyl (Fusion),  
fluazifop-p-butyl (Fusion),  
flumiclorac pentyl ester (Resource),  
fomesafen (Reflex, FlexStar),  
imazamox (Raptor),

imazethapyr,  
lactofen (Cobra),  
quizalofop P-ethyl (Assure II, Targa),  
sethoxydim (Poast, Poast Plus),  
thifensulfuron-methyl (Harmony GT XP, Synchrony STS)

The combined total application from crop emergence through harvest must not exceed 3 quarts per acre. The maximum combined total of this product that can be applied during flowering (R2 stage soybeans) is 2 quarts per acre. Refer to individual tank-mix product label for restrictions and precautions; use according to the most restrictive precautionary statements for each product in the tank mixture. In some cases, these tank-mix products will cause visual soybean injury.

**Pre-Harvest**

This product may be applied to Roundup Ready 2 Yield soybean for weed control prior to harvest. Apply up to 1 quart of this product per acre after pods have set and lost all green color. Care should be taken to avoid excessive seed shatter loss due to ground application equipment. Allow a minimum of 14 days between final application and harvest of soybean grain, forage or hay.

**Post-Harvest**

This product may be applied for weed control after harvest of Roundup Ready 2 Yield soybean. Higher specified rates may be required for control of large weeds that were growing in the crop at the time of harvest. Tank mixtures with 2,4-D or dicamba may be used. Ensure that the specific product being used is labeled for weed control application after harvest of soybean. Read and follow label directions of all products in the tank mixture.

MAXIMUM ALLOWABLE APPLICATION RATES – QUARTS PER ACRE	
Combined total per year for all applications	8.0
Pre-plant, Pre-emergence, At-Planting applications	5.0
Total of all In-crop applications from cracking through flowering (R2 stage soybeans)	3.0
Maximum pre-harvest application rate	1.0

**COTTON WITH THE ROUNDUP READY® GENE – IN CROP APPLICATIONS**

WARNING: UNITED SUPPLIERS INTENDS THIS PRODUCT FOR USE ONLY OVER-THE-TOP OF OR DIRECTED ONTO IMPROVED COTTON VARIETIES THAT ARE DESIGNATED AS COTTON WITH THE ROUNDUP READY® GENE. SEVERE INJURY OR DEATH OF COTTON WILL RESULT IF ANY COTTON VARIETIES NOT PROPERLY DESIGNATED AS HAVING THE ROUNDUP READY® GENE ARE SPRAYED WITH THIS PRODUCT. AVOID CONTACT OF HERBICIDE WITH FOLIAGE, GREEN STEMS, OR FRUIT OF CROPS, OR ANY DESIRABLE PLANTS AND TREES, OTHER THAN CROPS WITH THE ROUNDUP READY® GENE, SINCE SEVERE INJURY OR DESTRUCTION WILL RESULT.

ROUNDUP READY® COTTON VARIETIES MUST BE PURCHASED FROM AN AUTHORIZED LICENSED SEED SUPPLIER. THE DESIGNATION, "ROUNDUP READY®," INDICATES THE COTTON VARIETY CONTAINS A PATENTED PROPRIETARY TRAIT. IT IS UNLAWFUL TO SELL OR PLANT SAVED SEED.

COTTON WITH THE ROUNDUP READY® GENE MAY ONLY BE USED FOR PLANTING A COMMERCIAL CROP IN A SINGLE SEASON. SEED MAY NOT BE SAVED FOR REPLANTING AND SAVED SEED MAY NOT BE SUPPLIED TO OTHERS FOR REPLANTING. UNITED SUPPLIERS DOES NOT WARRANT THE SAFETY OR PERFORMANCE OF THIS PRODUCT WHEN USED ON "BROWN BAG" OR FARMER- SAVED SEED.

**Application Instructions**

This product will control many troublesome weeds with over-the-top, post-directed, hooded sprayer, or preharvest applications in Roundup Ready® cotton.

Maximum Allowable Yearly Rates

- |  |            |
|--|------------|
| 1. Combined total per year for all applications      | 8 quarts/A |
| 2. Preplant, Preemergence applications               | 5 quarts/A |
| 3. Total in-crop applications from cracking to layby | 4 quarts/A |
| 4. Maximum preharvest application rate               | 2 quarts/A |

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

For aerial applications apply this product in 3 to 15 gallons of water per acre.

DO NOT EXCEED A MAXIMUM RATE OF 1 QUART PER ACRE OF THIS PRODUCT WHEN MAKING APPLICATIONS BY AIR. AVOID DRIFT. EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS WHICH DO NOT CONTAIN THE ROUNDUP READY® GENE. Do not apply during low-level inversion conditions, when winds are gusty or under any other conditions which favor 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.

There are no rotational crop restrictions following applications of this product.

**Sprayer Preparation:** It is important that sprayer and mixing equipment be clean and free of pesticide residue before making applications of this product to Roundup Ready® cotton. Follow the cleaning procedures specified on the label of the product(s) previously used. Cotton is very sensitive to many herbicides at extremely low concentrations and care should be taken to thoroughly clean all equipment prior to use.

In addition to uses listed on this label, the following applications can be made:

**Over-the-top applications:** This product may be applied by aerial or ground application equipment postemergence to Roundup Ready® cotton from the ground cracking stage until the four leaf (node) stage of development (until the fifth true leaf reaches the size of a quarter). Over-the-top applications made after the four leaf (node) stage of development may result in boll loss, delayed maturity and/or yield loss. Any single over-the-top broadcast application should not exceed 1 quart per acre. No more than two over-the-top broadcast applications may be made from crop emergence through the four leaf (node) stage of development. Sequential over-the-top applications of this product must be at least 10 days apart and cotton must have at least two nodes of incremental growth between applications.

**NOTE:** Always plant into a weed free seedbed. In no-till and stale seedbed systems, always burn down existing weeds before cotton emerges. Apply a preplant burndown treatment of 16-48 fluid ounces per acre of this product.

**Post-directed or hooded applications:** This product may be applied using precision post-directed or hooded sprayers to Roundup Ready® cotton through layby. Be especially careful to minimize contact of the spray with cotton leaves. At this stage, post-directed equipment should be used which directs the spray to the base of the cotton plants. Place nozzles in a low position directing a horizontal spray pattern under the cotton leaves to contact weeds in the row. For best results, make applications while weeds are small (less than 3 inches). Minimize spray drift onto the leaves of the cotton plants by maintaining low spray pressure (less than 30 PSI). Applications that contact the cotton leaves may result in boll loss, delayed maturity and/or yield loss. Any single post-directed application should not exceed 1 quart per acre of this product. No more than two applications should be made from the fifth leaf through layby. Sequential in-crop applications of this product must be at least 10 days apart and cotton must have at least two nodes of incremental growth between applications.

**Salvage Treatment:** This treatment may be used after the four leaf stage of development and should only be used where weeds threaten to cause the loss of the crop. One quart per acre may be applied either as an over-the-top application or as a post-directed treatment sprayed higher on the cotton plants and over the weeds. **NOTE: SALVAGE TREATMENTS WILL RESULT IN SIGNIFICANT BOLL LOSS, DELAYED MATURITY AND/OR YIELD LOSS. NO MORE THAN ONE SALVAGE TREATMENT SHOULD BE USED PER GROWING SEASON.**

**Weeds controlled:** For specific rates of application and instructions for control of various annual and perennial weeds, refer to the "ANNUAL" and "PERENNIAL" Weed Rate Tables of this label. TOMAHAWK™ applied at 1 quart per acre will burndown or suppress the growth of the following perennial weeds and reduce crop competition: yellow and purple nutsedge, rhizome johnsongrass, common bermudagrass, silverleaf nightshade, trumpet creeper, and Redvine. Fall preharvest applications may be required for control of these perennial weeds.

Tank mixtures with other herbicides may result in reduced weed control or crop injury and are not for over-the-top applications of this product.

Some weeds with multiple germination times or suppressed (stunted) weeds may require sequential applications of this product for control.

**Preharvest applications:** This product may be applied for preharvest annual and perennial weed control as a broadcast treatment to Roundup Ready® cotton after 20% boll crack. Allow a minimum of 7 days between application and harvest. For specific instructions refer to the "COTTON" section on this label.

**NOTE:** TOMAHAWK™ will not enhance the performance of harvest aids when applied to Roundup Ready® cotton. **DO NOT APPLY TOMAHAWK™ TO CROPS GROWN FOR SEED.**

**FOR ROUNDUP READY® FLEX COTTON**

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

**NOTE:** The instructions provided in this supplemental label are specific to, and should only be used with, varieties designated as Roundup Ready Flex cotton. **DO NOT** combine the instructions in this supplemental label with those in the "Roundup Ready Cotton" section of the TOMAHAWK herbicide label booklet, or with any other Roundup Ready cotton or Roundup Ready Flex cotton instructions on labeling for this or other glyphosate-containing product. See "Annual Maximum Use Rate" in the "PRODUCT INFORMATION" section of the TOMAHAWK herbicide label booklet, for additional information.

**Types Of Applications:** Pre-plant, At-Planting, Pre-emergence, Post-emergence, Pre-harvest.

Maximum Allowable Combined Application Quantities Per Season	
Combined total per year for all applications	8.0 quarts per acre
Calculate the combined rate to be used for all preplant, in-crop and preharvest applications, to ensure that the total does not exceed the maximum allowed rate per acre per year shown above.	
Preplant, At-planting, Preemergence applications	5.0 quarts per acre
Total in-crop applications from ground cracking to 60 percent open bolls	6.0 quarts per acre
Maximum allowed from 60 percent bolls open to 7 days prior to harvest	2.0 quarts per acre

**PRECAUTIONS and RESTRICTIONS:** See the "ROUNDUP READY CROPS" section of the label booklet provided with the product container for precautionary instructions for use in Roundup Ready crops.

Pre-plant, Pre-emergence, At-Planting

**Use Instructions:** This product may be applied before, during or after planting Roundup Ready Flex cotton. Always plant into a weed free seedbed. In no-till and stale seedbed systems, always burn down existing weeds before cotton emerges.

**Post-emergence**

**Use Instructions:** When applied in accordance with this label, TOMAHAWK herbicide will control labeled annual grasses and broadleaf weeds in Roundup Ready Flex cotton. To maximize yield potential spray cotton early to eliminate competing weeds. Many perennial weeds will be controlled or suppressed with one or more applications of this product. An initial application of 1.0 quart per acre on 1 to 3 inch tall annual grass and broadleaf weeds is specified. This product may be applied by ground application equipment at rates up to 1.5 quarts per acre per application postemergence to Roundup Ready Flex cotton. In addition to broadcast applications, post-directed equipment may be used to achieve weed coverage.

**NOTE:** For specific rates of application and instructions, refer to the "ANNUAL WEEDS" and "PERENNIAL WEEDS RATE SECTION" in the label booklet for TOMAHAWK herbicide.

**Precautions, Restrictions:** The maximum rate for any single in-crop application of this product is 1.5 quart per acre made using ground application equipment. In-crop application rates above 1.0 quart per acre made alone or with the addition of other crop chemical products containing surfactant may cause a crop response including leaf speckling or leaf necrosis. Except for pre-harvest use, do not exceed a maximum rate of 1.0 quart per acre of this product when making applications by air. Between layby and 60 percent open bolls, the maximum combined total rate of this product that may be applied is 2.0 quarts per acre. The maximum combined total of all applications made from crop emergence through 60 percent open bolls must not exceed 6.0 quarts per acre.

**Pre-harvest**

**Use Instructions:** This product may be applied for pre-harvest annual and perennial weed control as a broadcast treatment to Roundup Ready Flex cotton after 60 percent boll crack. Up to 2.0 quarts of this product may be applied using either aerial or ground spray equipment.

**NOTE:** This product will not enhance the performance of harvest aids when applied to Roundup Ready Flex cotton.

**PRECAUTIONS, RESTRICTIONS:** Allow a minimum of 7 days between application and harvest of Roundup Ready Flex cotton. Do not apply this product as a preharvest application to cotton grown for seed, as a reduction in germination or vigor may occur.

**Ground Broadcast Equipment**

Use the specified rates of TOMAHAWK herbicide in 5 to 20 gallons of spray solution per acre. As density of weeds increases, spray volume should be increased within the specified range to ensure complete and uniform coverage of the target. Carefully select proper nozzle and spray pressure to avoid spraying a fine mist. Check for even distribution of spray droplets.

**Aerial Equipment**

Apply this product in 3 to 15 gallons of water per acre. Except for pre-harvest use do not exceed a maximum rate of 1.0 quart per acre of this product when making applications by air. Extreme care must be used when applying this product to prevent injury to desirable plants and crops which do not contain a Roundup Ready gene. Drift may cause damage to any vegetation contacted to which treatment is not intended including boll loss, delayed maturity and/or yield loss on Roundup Ready cotton exceeding the 4 leaf (node) stage of development.

**Precautions, Restrictions:** See the "Aerial Equipment" part of the "APPLICATION EQUIPMENT AND TECHNIQUES" section of the TOMAHAWK herbicide label booklet for information on proper use and calibration of this equipment.

**Sprayer Preparation**

Cotton is very sensitive to many herbicides at extremely low concentrations and care should be taken to thoroughly clean all equipment prior to use. It is important that the sprayer, including tank and hoses, and mixing equipment be clean and free of pesticide residue before making applications of this product to Roundup Ready Flex cotton. Follow the cleaning procedures specified on the label of the product(s) previously used.

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

**SEED PRODUCTION OF CANOLA WITH THE ROUNDUP READY® GENE**

THIS PRODUCT MAY BE USED FOR CONTROL OF NON-GLYPHOSATE TOLERANT CANOLA IN PRODUCTION FIELDS OF CANOLA CONTAINING THE ROUNDUP READY® GENE. SEVERE INJURY OR DEATH WILL RESULT IF CANOLA VARIETIES WHICH DO NOT CONTAIN THE ROUNDUP READY® GENE ARE SPRAYED WITH THIS PRODUCT.

ROUNDUP READY® CANOLA VARIETIES MUST BE PURCHASED FROM AN AUTHORIZED LICENSED SEED SUPPLIER. THE DESIGNATION, "ROUNDUP READY®," INDICATES THE CANOLA VARIETY CONTAINS A PATENTED PROPRIETARY TRAIT. IT IS UNLAWFUL TO SELL OR PLANT SAVED SEED.

CANOLA WITH THE ROUNDUP READY® GENE MAY ONLY BE USED FOR PLANTING A COMMERCIAL CROP IN A SINGLE SEASON. SEED MAY NOT BE SAVED FOR REPLANTING AND SAVED SEED MAY NOT BE SUPPLIED TO OTHERS FOR REPLANTING. UNITED SUPPLIERS DOES NOT WARRANT THE SAFETY OR PERFORMANCE OF THIS PRODUCT WHEN USED ON "BROWN BAG" OR FARMER-MADE SEED.

**Use Instructions**

This product will control non-glyphosate tolerant canola in seed production fields of canola containing the Roundup Ready® gene. This product may be applied using ground spray equipment only. Apply 1 pint of this product in 5 to 20 gallons of spray solution per acre as a broadcast spray. A second application of 1 pint per acre may be applied, if needed to control non-glyphosate tolerant canola plants.

DO NOT EXCEED A MAXIMUM RATE OF 1 QUART OF THIS PRODUCT PER ACRE PER SEASON.

Application timing – This product can be applied to Roundup Ready® canola from emergence to the pre-flower (early bolting) stage.

Treated canola may not be used for food or feed. Do not feed or graze treated canola. Do not process treated canola for food or feed.

**PREPLANT, PREEMERGENT AND/OR OVER-THE-TOP APPLICATIONS TO CANOLA WITH THE ROUNDUP READY® GENE**

**Information**

UNITED SUPPLIERS INTENDS USE OF THIS PRODUCT ONLY ON CANOLA WHICH CONTAINS THE ROUNDUP READY® GENE.

DO NOT USE THIS PRODUCT ON CANOLA WITH THE ROUNDUP READY® GENE PLANTED IN THE FOLLOWING STATES: ALABAMA, DELAWARE, FLORIDA, GEORGIA, KENTUCKY, MARYLAND, NEW JERSEY, NORTH CAROLINA, SOUTH CAROLINA, TENNESSEE, VIRGINIA AND WEST VIRGINIA.

- Applying this product to canola which is not designated as Roundup Ready® will result in severe crop injury and yield loss. Avoid contact with foliage, green stems, or fruit of crops, or any



desirable plants which do not contain the Roundup Ready® gene since severe injury or destruction will result.

- The Roundup Ready® designation indicates the canola contains a patented gene which provides tolerance to this herbicide. Information on Roundup Ready® canola may be obtained from your seed supplier or United Suppliers representative.

**Use Instructions**

This product will control many troublesome emerged weeds when applied preplant, preemergent and/or with over-the-top applications in Roundup Ready® canola. Allow a minimum of 60 days between last application and canola harvest.

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Maximum Allowable Combined Application Quantities Per Season:

1. Preplant and preemergence applications: 2 quarts/A
  2. Total in-crop application from emergence to 6-leaf: 1 quart/A
- 

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

For aerial applications apply this product in 3 to 15 gallons of water per acre.

DO NOT EXCEED A MAXIMUM RATE OF 16 OUNCES PER ACRE OF THIS PRODUCT WHEN MAKING APPLICATIONS BY AIR. AVOID DRIFT. EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS WHICH DO NOT CONTAIN THE ROUNDUP READY® GENE. DO NOT APPLY DURING LOW-LEVEL INVERSION CONDITIONS, WHEN WINDS ARE GUSTY OR UNDER ANY OTHER CONDITIONS WHICH FAVOR 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.

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.

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.

**There are no rotational crop restrictions following applications of this product.**

**Sprayer Preparation:** It is important that sprayer and mixing equipment be clean and free of pesticide residue before making applications of this product to Roundup Ready® canola. Follow the cleaning procedures specified on the label of the product(s) previously used. Canola can be very sensitive to many herbicides at extremely low concentrations and care should be taken to thoroughly clean all equipment prior to use.

**Preplant or Preemergent applications:** This product may be applied by aerial or ground application equipment prior to planting or emergence of canola. The maximum combined application rate from all preplant and preemergent applications should not exceed 2 quarts per acre per season.

**NOTE:** In no-till and stale seedbed systems, always use a burndown treatment to control existing weeds before canola emerges. Apply a preplant burndown treatment of 16-32 fluid ounces per acre of this product.

**Over-the-top applications:** This product may be applied by aerial or ground application equipment postemergence to Roundup Ready® canola from emergence through the six-leaf stage of development. To maximize yield potential spray canola early to eliminate competing weeds. Any single over-the-top

broadcast application should not exceed 16 ounces per acre. No more than two over-the-top broadcast applications may be made from crop emergence through the six-leaf stage of development. Sequential over-the-top applications of this product must be at least 10 days apart.

**Weeds controlled:** For specific rates of application and instructions for control of various annual and perennial weeds, refer to the "ANNUAL" and "PERENNIAL" Weed Rate Tables on this label.

Tank mixtures with other herbicides, insecticides, or fungicides may result in reduced weed control or crop injury and are not for over-the-top applications of this product.

Some weeds with multiple germination times or suppressed (stunted) weeds may require sequential applications of this product for control. The second application should be made after some regrowth has occurred and at least 10 days after a previous application of this product.

This product will control or suppress most perennial weeds. For some perennial weeds, repeat applications may be required to eliminate crop competition throughout the growing season.

**For over-the-top uses on Roundup Ready® crop varieties, crop safety and weed control performance are not warranted by United Suppliers when this product is used in conjunction with "brown bag" or "bin run" seed saved from previous year's production and replanted.**

**POSTEMERGENCE APPLICATIONS TO CORN WITH THE ROUNDUP READY® GENE**

UNITED SUPPLIERS INTENDS USE OF THIS PRODUCT ONLY ON CORN SEED DESIGNATED AS CONTAINING THE ROUNDUP READY® GENE.

- Applying this product to corn varieties which are not designated as Roundup Ready® will result in severe crop injury and yield loss. Avoid contact with foliage, green stems, or fruit of crops, or any desirable plants which do not contain the Roundup Ready® gene since severe injury or destruction will result.
- Roundup Ready® varieties must be purchased from an authorized seed supplier. Crop safety and weed control performance are not warranted by United Suppliers when this product is used in conjunction with "brown bag" or "bin run" corn seed saved from previous year's production and replanted.
- The Roundup Ready® designation indicates that the corn contains a patented gene which provides tolerance to United Supplier's Glyphosate brand herbicides. Information on Roundup Ready® corn may be obtained from your seed supplier.

**Application Instructions**

This product may be applied postemergence to Roundup Ready® corn during the period beginning at corn emergence and continuing through the 12-leaf stage or until corn height reaches 30 inches, whichever comes first. Single in-crop applications of this product are not to exceed 1 quart per acre. Sequential in-crop applications of this product should not exceed 2 quarts per acre per growing season. Total TOMAHAWK™ use should not exceed 8 quarts per acre per year.

Allow a minimum of 50 days between application of this product and harvest of corn forage and 7 days between application and harvest of corn grain. Allow a minimum of 14 days between in-crop applications of this product. THE USE OF ADDITIVES FOR IN-CROP APPLICATIONS TO ROUNDUP READY® CORN IS PROHIBITED.

**Maximum Yearly Rates Allowed**

Preplant/Preemergence (Maximum)	5 quarts/A
Total in-crop applications from emergence to 12-leaf stage or 30 inches	2 quarts/A
Maximum preharvest rate	1 quart/A
Combined total per year for all applications	8 quarts/A

When applied as directed, this product controls annual grass and broadleaf weeds in Roundup Ready® corn. Many perennial grasses and broadleaf weeds will be controlled or suppressed with one or more applications of this product. Applications should be made to actively growing weeds before they reach

the maximum size listed in the "ANNUAL" and "PERENNIAL" Weed Rate Tables on this label. Refer to the "MIXING" section of this label for proper use instructions.

There are no rotational crop restrictions following applications of this product.

**ATTENTION: 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 other desirable vegetation since minute quantities of this product can cause severe damage or destruction to crop plants in non-target areas. The likelihood of plant injury occurring from drift of this product is greatest when winds are gusty or in excess of 5 miles per hour. Even under lesser wind velocities, avoid conditions which allow spray drift to occur such as combinations of pressure and nozzle type that will result in fine particles (mist) which are likely to drift. **AVOID APPLYING AT EXCESSIVE SPEED OR SPRAY PRESSURE.**

For ground applications: Use the specified rates of this product in 5 to 20 gallons of spray solution per acre as a broadcast spray. See "WEEDS CONTROLLED" section below for specific rates. Carefully select proper nozzles and spray pressure to avoid spraying a fine mist. For best results with ground application equipment, use flat fan nozzles. Check for even distribution of spray droplets.

For aerial applications: Use the specified rates of this product in 3 to 15 gallons of spray solution per acre. Do not exceed 1 quart per acre. See "WEEDS CONTROLLED" section below. **AVOID DRIFT – DO NOT APPLY DURING INVERSION CONDITIONS, WHEN WINDS ARE GUSTY OR UNDER ANY OTHER CONDITIONS WHICH FAVOR DRIFT. DRIFT MAY CAUSE DAMAGE TO ANY VEGETATION CONTACTED TO WHICH TREATMENT IS NOT INTENDED. TO PREVENT INJURY TO ADJACENT VEGETATION, APPROPRIATE BUFFER ZONES MUST BE MAINTAINED.**

**Weeds controlled**

For specific rates of application and instructions for control of various annual and perennial weeds, refer to the "ANNUAL" and "PERENNIAL" Weed Rate Tables on this label. TOMAHAWK™ Plus at up to 1 quart per acre will burndown or suppress the growth of the following perennial weeds and reduce crop competition: nutsedge, rhizome johnsongrass, quackgrass, Canada thistle, wirestem muhly.

Sequential Applications: Some weeds with multiple germination times or suppressed (stunted) weeds may require a second application of this product. The second application should be made after some regrowth has occurred.

**Tank mixtures**

A tank mixture of TOMAHAWK™ plus Micro-Tech® or Partner® may be used for postemergence and residual control of annual weeds in corn. These tank mixtures may be made during the period beginning at corn emergence and continuing until corn height reaches 5 inches.

A TOMAHAWK™ tank mixture with atrazine, Banvel®, Clarity®, Permit® or 2,4-D may be used for postemergence control of additional annual weeds in corn. A TOMAHAWK™ tank mixture with atrazine may be made during the period beginning at corn emergence and continuing until corn height reaches 12 inches. A TOMAHAWK™ tank mixture with Banvel® or Clarity® at 0.125 to 0.25 lb per acre may be made during the period beginning at corn emergence and continuing until corn height reaches 30 inches. A TOMAHAWK™ tank mixture with Permit® may be made during the period beginning at corn emergence and continuing until corn height reaches 30 inches. A TOMAHAWK™ tank mixture with 2,4-D at 0.125 to 0.25 lb per acre may be made during the period beginning at corn emergence and continuing until corn is at the five leaf stage or corn height reaches 8 inches, whichever comes first.

Refer to the specific product label and observe all precautions, mixing and application instructions for all products used in tank mixtures.

**FOR POSTEMERGENCE APPLICATIONS TO ROUNDUP READY CORN 2**

UNITED SUPPLIERS INTENDS USE OF THIS PRODUCT ONLY ON CORN SEED DESIGNATED AS CONTAINING THE ROUNDUP READY® GENE.

- Applying this product to corn varieties which are not designated as Roundup Ready® will result in severe crop injury and yield loss.
- The Roundup Ready® designation indicates that the corn contains a patented gene which provides tolerance to this product. Information on Roundup Ready® corn may be obtained from your seed supplier.

**ROUNDUP READY CORN 2 HYBRIDS**

Note: DO NOT combine these instructions with those in the "Corn with the Roundup Ready Gene" section of this label or with any other Roundup Ready corn instructions on labeling for this or other glyphosate-containing product. See 'Annual Maximum Use Rate" in the "PRODUCT INFORMATION" section of this label booklet, for additional information.

The use of the higher in-crop over the top rates described in this supplemental label on other than Roundup Ready Corn 2 may cause crop injury and reduce yields.

**Pre-plant, Pre-emergence, At-Planting**

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

TANK MIXTURES: This product may be tank mixed with Bullet, Degree, Degree Xtra, Harness, Harness Xtra, Harness Xtra 5.6L, Lariat, Lasso or Micro-Tech herbicides at 50 to 100 percent of labeled rate. Refer to the specific product label and observe all precautions and limitations on the label for any preemergence herbicide application, including application timing restrictions, soil restrictions, minimum recropping interval and rotational guidelines—the more restrictive requirements apply.

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

**Post-emergence (in-crop)**

This product may be applied alone as a post- emergence in-crop application to provide control of emerged weeds listed on the label. The post-emergence application of this product should be made before the weeds reach a height and/or density that the weeds become competitive with the crop. If new flushes of weeds occur, a sequential application of this product at 24 to 32 fluid ounces per acre will control the labeled grasses and broadleaf weeds. This product may be applied over-the- top broadcast or with drop nozzles post- emergence to Roundup Ready Corn 2 from emergence through the V8 stage or until corn height reaches 30 inches (free standing), whichever comes first. For corn height 30 to 48 inches (free standing), apply this product only using ground application equipment with drop nozzles and avoid spraying into the whorls of the corn plants. For optimum spray coverage and weed control when corn height is 24 to 48 inches (free standing), use drop nozzles.

See the "ROUNDUP READY CROPS" section of this label booklet for directions for use in Roundup Ready Crops.

Single in-crop applications of this product should not exceed 48 fluid ounces per acre.

Allow a minimum of 10 days between incrop applications of this product.

Allow a minimum of 50 days between application of this product and harvest of corn forage or grain.

For applications at a preharvest timing (see Preharvest section of this supplemental label), allow a minimum of 7 days between application and harvest or feeding of corn stover or corn grain. There are no rotational crop restrictions following application of this product.

TANK MIXTURES: This product maybe applied in tank mixture with a labeled rate of Degree, Degree Xtra, Harness, Harness Xtra, Harness Xtra 5.6L, Micro-Tech, and Bullet herbicides at 50 to 100 percent of labeled rate. This product may be applied in tank mixture with Permit, and atrazine at labeled rates. Refer to the specific product label and observe all precautions and limitations on the label for all products used in tank mixtures, including application timing restrictions, soil restrictions, minimum re-cropping interval and rotational guidelines-the more restrictive requirements apply. Tank mixtures with other products may result in increased potential for crop injury and/or weed antagonism. Refer to the table below for height limitation for tank mix partner.

Tank Mix Partner	Maximum Height of Corn for Application
Degree Degree Xtra Harness Harness Xtra Harness Xtra 5.6L	11 Inches

Bullet* MicroTech*	5 Inches
Permit	30 Inches
Atrazine	12 Inches

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

**Pre-Harvest (Corn Grain and Stover)**

A single preharvest application of up to 32 fluid ounces per acre of this product may be made, if no more than a total of 64 fluid ounces of this product has been previously applied in over-the-top or drop nozzles applications. Make a preharvest application at 35 percent grain moisture or less. Ensure that maximum kernel fill is complete and the corn is physiologically mature (black layer formed).

Do not make a preharvest application of this product if more than a combined total of 64 fluid ounces of this product has been previously applied in over-the-top or drop nozzles applications.

Allow a minimum of 7 days between a preharvest application and harvest or feeding of corn stover or grain.

**Post-Harvest**

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

Allow a minimum of 7 days between treatment and harvest or feeding of treated vegetation.

MAXIMUM ALLOWABLE APPLICATION RATES – QUARTS PER ACRE	
Pre-plant, Pre-emergence, At-Planting applications	5.0
Total in-crop applications from emergence through the 48 inch stage	3.0
Maximum pre-harvest application rate after maximum kernel fill is complete and the crop is physiologically mature (black layer formation) until 7 days before harvest	1.0
Combined total per year for all applications	8.0

The addition of 1 to 2 percent dry ammonium sulfate by weight or 8.5 to 17 pounds per 100 gallons of water may increase the performance of this product under hard water conditions, drought conditions or when tank mixed with Bullet® or Micro-Tech® herbicides. 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. The addition of other additives, including fertilizers and micro-nutrients are not recommended with this product since this may result in increased potential for crop injury.

**ATTENTION: AVOID DRIFT, EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS WHICH DO NOT CONTAIN THE ROUNDUP READY GENE. THOROUGHLY CLEAN THE SPRAY TANK AND ALL LINES AND FILTERS TO ELIMINATE POTENTIAL CONTAMINATION FROM OTHER HERBICIDES PRIOR TO MIXING AND APPLYING THIS PRODUCT.**

For ground applications: Use the specified rates of this product in 5 to 20 gallons of spray solution per acre as a broadcast spray. Carefully select correct nozzles and spray pressure to avoid spraying a fine mist. Check for even distribution of spray droplets.

For aerial applications: Use the specified rates of this product in 3 to 15 gallons of spray solution per acre. Do not exceed 1.0 quart of this product per acre. See "WEEDS CONTROLLED" section below.

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

**FOR WEED CONTROL APPLICATIONS IN SUGAR BEETS  
WITH THE ROUNDUP READY® GENE**

UNITED SUPPLIERS INTENDS USE OF THIS PRODUCT FOR POSTEMERGENCE APPLICATION ONLY ON SUGAR BEET VARIETIES DESIGNATED AS CONTAINING A ROUNDUP READY GENE.

The Roundup Ready designation indicates that the sugar beet contains a patented gene, which provides tolerance to this product. Information on Roundup Ready sugarbeet may be obtained from your seed

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supplier or United Suppliers representative. Roundup Ready crop varieties must be purchased from an authorized licensed seed supplier.

See the "ROUNDUP READY CROPS" section of this label booklet for directions for use in Roundup Ready crops. Do NOT combine these instructions with other instructions made for crop varieties that do not contain a Roundup Ready gene listed in the "ANNUAL AND PERENNIAL CROPS (Alphabetical)" sections of this label booklet.

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

MAXIMUM ALLOWABLE APPLICATION RATES – QUARTS PER ACRE	
Pre-plant, Pre-emergence applications	5.0
Emergence to 8 leaf stage	2.5
Between 8 leaf stage and canopy closure	2.0
Combined total per year for all applications	8.0

**PRECAUTIONS, RESTRICTIONS:** See the "ROUNDUP READY CROPS" section of this label for directions for use in Roundup Ready crops. Tank mixtures of this product with herbicides, insecticides or fungicides may result in crop injury or reduced weed control.

**Preplant, At-Planting, Preemergence**

USE INSTRUCTIONS: This product may be applied before, during or after planting of Roundup Ready sugar beets.

PRECAUTIONS, RESTRICTIONS: Maximum quantity of this product that may be applied for all preplant, at-planting and preemergence applications combined is 5.0 quarts per acre per season.

**Postemergence (In-crop)**

USE INSTRUCTIONS: This product may be applied over the top of Roundup Ready sugar beets for control of annual grasses and broadleaf weeds from emergence to 30 days prior to harvest. To maximize yield potential, spray sugar beets early to eliminate competing weeds. Up to 4 sequential applications of this product may be made with at least 10 days between applications. This product will control or suppress most perennial weeds. For some perennial weeds, repeat applications may be required to eliminate crop competition throughout the growing season.

RESTRICTIONS: Follow all directions for use in Roundup Ready crops.

- The combined total application from crop emergence through harvest must not exceed 4.5 quarts per acre.
- The maximum rate for any single application between emergence to the 8 leaf stage is 1.5 quarts per acre.
- The maximum rate for any single application between the 8 leaf stage and canopy closure is 1.0 quart per acre.
- Allow a minimum of 30 days between last application and sugar beet harvest.
- For any crop NOT listed in the "CROPS" section of this label booklet, applications must be at least 30 days prior to planting.

**FARMSTEADS**

**TYPES OF APPLICATIONS:** Nonselective weed control, trim-and-edge, chemical mowing, cut stumps, habitat management, rangelands.

**Nonselective weed control, Trim-and-edge**

USE INSTRUCTIONS: This product may be used to control annual weeds, perennials 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.

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 specified rates.

Banvel®

Simazine 80W

Diuron  
Princep® Caliber 90  
Simazine  
Simazine 4L

Surflan® 75W  
Surflan® AS  
2,4-D

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

**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.

**Cut Stumps**

**TYPES OF APPLICATION:** Treating cut stumps in any noncrop site listed on this label.

USE INSTRUCTIONS: This product will control regrowth of cut stumps and resprouts of many types of woody brush and tree species, 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.

**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 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.

**Rangelands**

**TYPES OF APPLICATION:** Dormant

**USE INSTRUCTIONS:** This product will control or suppress many weeds, including downy brome, cheat grass, cereal rye, medusahead rye and jointed goatgrass in dormant rangeland. Apply 8 to 16 fluid ounces of this product per acre in the early spring when the weeds have greened up, but desirable grasses, such as crested and tall wheatgrass, are still truly dormant. Slight discoloration of the desirable grasses may occur, but they will regreen and regrow under moist soil conditions as effects of this product wear off.

**PRECAUTIONS, RESTRICTIONS:** Do not use ammonium sulfate when spraying dormant rangeland grasses with this product. Do not make more than one application per year.

**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 specified.

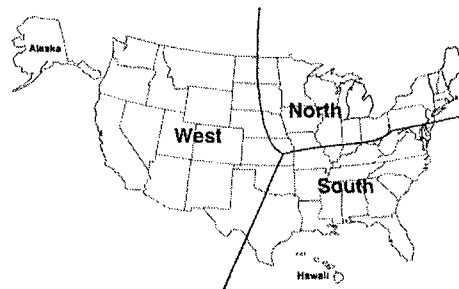
Apply to actively growing annual weeds.

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
		MAXIMUM HEIGHT/LENGTH					
Annoda, spurred		-	1"	2"	3"	5"	8"
Barley		-	18"	18"+	-	-	-
Barnyardgrass	South	-	3"	5"	7"	9"	12"
	North	-	-	6"	12"	-	-
Bassia, fivehook					6"		
Bittercress		-	12"	20"	-	-	-
Bluegrass, annual		-	10"	-	-	-	-
Brome, downy		6"	-	-	-	-	-
Brome, Japanese		-	6"	-	24"	-	-
Browntop panicum		-	6"	8"	12"	-	24"
Burcucumber		-	-	6"	12"	-	-
Buttercup		-	12"	20"	-	-	-
Carolina foxtail		-	20"	-	-	-	-
Carolina geranium		-	-	-	4"	-	9"
Carpetweed		-	-	6"	12"	-	-
Cheat		-	6"	20"	-	-	-
Chervil		-	20"	-	-	-	-
Chickweed		-	12"	18"	-	-	-
Cocklebur		-	12"	18"	24"	-	-



WEED SPECIES	REGION	RATE (FLUID OUNCES PER ACRE)					
		12	16	24	32	40	48
		MAXIMUM HEIGHT/LENGTH					
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 ( <i>Conyza canadensis</i> )	South	-	-	12"	30"	-	-
	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"	12"	-	-	-
Lambsquarters		-	6"	8"	12"	-	20"
Little barley		-	20"	-	-	-	-
London rocket		-	6"	-	-	-	-
Mayweed		-	-	2"	6"	12"	18"
Morningglory ( <i>Lpomoea 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"	-	-

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WEED SPECIES	REGION	RATE (FLUID OUNCES PER ACRE)					
		12	16	24	32	40	48
MAXIMUM HEIGHT/LENGTH							
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"	-	-
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, ladythumb		-	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
MAXIMUM HEIGHT/LENGTH					
Barley	12"	-	-	-	-
Barnyardgrass	6"	-	-	-	-
Bluegrass, annual	6"	-	-	-	-
Bluegrass, bulbous	-	6"	-	-	-
Brome, downy <sup>1</sup>	6"	-	-	-	-
Buttercup	-	12"	-	-	-
Cheat	-	6"	-	-	-

WEED SPECIES	RATE (FLUID OUNCES PER ACRE)				
	12	16	24	32	48
	MAXIMUM HEIGHT/LENGTH				
Chickweed	-	6"	-	-	-
Cocklebur	-	12"	-	-	-
Corn	-	6"	-	-	-
Crabgrass	-	12"	-	-	-
Dwarf dandelion	-	12"	-	-	-
Fall panicum	-	12"	-	-	-
Falseflax, smallseed	-	12"	-	-	-
Field pennycress	-	6"	-	-	-
Flaree	-	-	-	-	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"	-	-	-
Lambsquarters	-	6"	-	-	-
London rocket	-	6"	-	-	-
Morningglory ( <i>Lipomoea 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.

#### 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.

#### Annual Weeds – Tank Mixtures with 2,4-D or Banvel®

12 to 16 fluid ounces of this product plus 0.25 pounds a.i. of Banvel® or 0.5 pounds a.i. of 2,4-D per acre will control the following weeds with the maximum height or length indicated: 6" – prickly lettuce,

marestail/horseweed (*Conyza canadensis*), morningglory (*Ipomoea spp.*), kochia (Banvel® only); 12" – cocklebur, lambsquarters, pigweed, Russian thistle.

16 fluid ounces of this product plus 0.5 pounds 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 pounds a.i. of Banvel® or 0.5 pounds 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 DICAMBA TANK MIXTURES BY AIR IN CALIFORNIA.

**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 specified stages.

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

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

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

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

**Spray Solution**

Desired Volume	Amount of TOMAHAWK™					
	½%	1%	1 1/2%	2%	5%	10%
1 Gal	2/3 oz	1 1/3 oz	2 oz	2 2/3 oz	6 ½ oz	13 oz
25 Gal	1 pt	1 qt	1 ½ qt	2 qt	5 qt	10 qt
100 Gal	2 qt	1 gal	1 ½ gal	2 gal	5 gal	10 gal

2 tablespoons = 1 fluid ounce

Weed Species	Rate (QT/A)	Water Volume	Hand-Held % Solution	Comments
Alfalfa	1	3-10	2%	Make applications after the last hay cutting in the fall. Allow alfalfa to regrow to a height of 6 to 8 inches or more prior to treatment. Applications should be followed with deep tillage at least 7 days after treatment, but before soil freeze-up.
Alligatorweed	4	3-20	1.5%	Partial control. Apply when most of the plants are in bloom. Repeat applications will be required to maintain control.
Anise (fennel)	-	-	1-2%	Apply as a spray-to-wet treatment. Optimum results are obtained when plants are treated at the bud to full-bloom stage of growth.
Bahiagrass	3-5	3-20	2%	Apply when most plants have reached the early head stage.

Weed Species	Rate (QT/A)	Water Volume	Hand-Held % Solution	Comments
Bentgrass	1.5	10-20	2%	For suppression in grass seed production areas. For ground applications only. Ensure entire crown area has resumed growth prior to a fall application. Bentgrass should have at least 3 inches of growth. Tillage prior to treatment should be avoided. Tillage 7 to 10 days after application is specified for best results.
Bermudagrass	3-5	3-20	2%	For control, apply 5 quarts of this product per acre. For partial control, apply 3 quarts per acre. Treat when bermudagrass is actively growing and seedheads are present. Retreatment may be necessary to maintain control.
Bermudagrass, water (knotgrass)	1-1.5	5-10	2%	Apply 1.5 quarts of this product in 5 to 10 gallons of water per acre. Apply when water 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.

Weed Species	Rate (QT/A)	Water Volume	Hand-Held % Solution	Comments
Bindweed, field	0.5-5	3-20	2%	<p>Do not treat when weeds are under drought stress as good soil moisture is necessary for active growth.</p> <p>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.</p> <p>Also for control, apply 2 quarts of this product plus 0.5 pounds 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.</p> <p>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 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.</p> <p>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.</p>
Bluegrass, Kentucky	1-2	3-40	2%	<p>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.</p>

Weed Species	Rate (QT/A)	Water Volume	Hand-Held % Solution	Comments
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.
Dallisgrass	3-5	3-20	2%	Apply when most plants have reached the early head stage.
Dandelion	3-5	3-40	2%	Apply when most plants have reached the early bud stage 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.
Dock, curly	3-5	3-40	2%	Apply when most plants have reached the early bud stage of growth. Also for control, apply 16 fluid ounces of this product plus 0.5 pound a.i. 2,4-D in 3 to 10 gallons of water per acre.

Weed Species	Rate (QT/A)	Water Volume	Hand-Held % Solution	Comments
Dogbane, hemp	4	3-40	2%	Apply when most plants have reached the late bud to flower stage of growth. Following crop harvest or mowing, allow weeds to regrow to a mature stage prior to treatment. For best results, apply in late summer or fall. For suppression, apply 16 fluid ounces of this product 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.
Fescue (except fall)	3-5	3-20	2%	Apply when most plants have reached the early head stage.
Fescue, tall	1-3	3-40	2%	Apply 3 quarts of this product per acre when most plants have reached boot-to-early seedhead stage of development.  Fall applications only: Apply 1 quart of this product in 3 to 10 gallons of water per acre. Apply to fescue in the fall when plants have 6 to 12 inches of new growth. A sequential application of 1 pint per acre of this product will improve long-term control and control seedlings germinating after fall treatments or the following spring.
Guineagrass	3	3-40	1%	Apply when most plants have reached at least the 7-leaf stage of growth. Ensure thorough coverage when using hand-held equipment.
Horsenettle	3-5	3-20	2%	Apply when most plants have reached the early bud stage.
Horseradish	4	3-40	2%	Apply when most plants have reached the late bud to flower stage of growth. For best results, apply in late summer or fall.
Iceplant	-	-	1.5-2%	Iceplant should be at or beyond the early bud stage of growth. Thorough coverage is necessary for best control.
Jerusalem artichoke	3-5	3-20	2%	Apply when most plants are in the early bud stage.



Weed Species	Rate (QT/A)	Water Volume	Hand-Held % Solution	Comments
Johnsongrass	0.5-3	3-40	1%	<p>In annual cropping systems apply 1 to 2 quarts of this product per acre. Apply 1 quart of this product in 3 to 10 gallons of water per acre. Use 2 quarts of this product when applying 10 to 40 gallons of water per acre. In 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.</p> <p>For best results, apply when most plants have reached the boot-to-head stage of growth or in the fall prior to frost. Allow 7 or more days after application before tillage. Do not tank mix with residual herbicides when using the 1 quart per acre rate.</p> <p>For burndown of Johnsongrass, apply 1 pint of this product in 3 to 10 gallons of water per acre before the plants reach a height of 12 inches. For this use, allow at least 3 days after treatment before tillage.</p> <p>Spot treatment (partial control or suppression) – Apply a 1 percent solution of this product when Johnsongrass is 12 to 18 inches in height. Coverage should be uniform and complete.</p>
Kikuyugrass	2-3	3-40	2%	Spray when most kikuyugrass is at least 8 inches in height (3 or 4-leaf stage of growth). Allow 3 or more days after application before tillage.
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.

Weed Species	Rate (QT/A)	Water Volume	Hand-Held % Solution	Comments
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%	<p>Apply 3 quarts of this product per acre or apply a 1 to 2 percent solution for control of nutsedge plants and immature nutlets attached to treated plants. Treat when plants are in flower or when new nutlets can be found at rhizome tips. Nutlets 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.</p> <p>Sequential applications: 1 to 2 quarts of this product in 3 to 10 gallons of water per acre will also provide control. Make applications when a majority of the plants are in the 3 to 5-leaf stage (less than 6 inches tall). Repeat this application, as necessary, when newly emerging plants reach the 3 to 5-leaf stage. Subsequent applications will be necessary for long-term control.</p> <p>For partial control of existing plants, apply 1 pint to 2 quarts of this product in 3 to 40 gallons of water per acre. Treat when plants have 3 to 5 leaves and most are less than 6 inches tall. Repeat treatments will be required to control subsequent emerging plants or regrowth of existing plants.</p>
Orchardgrass	1-2	3-40	2%	<p>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.</p> <p>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.</p>
Pampasgrass	-	-	1.5-2%	Pampasgrass should be at or beyond the boot stage of growth. Thorough coverage is necessary for best control.
Paragrass	3-5	3-20	2%	Apply when most plants are in the early head stage.

Weed Species	Rate (QT/A)	Water Volume	Hand-Held % Solution	Comments
Phragmites	3-5	10-40	1-2%	For partial control. For best results, treat during late summer or fall months or when plants are actively growing and in full bloom. Treatment before or after this stage may lead to reduced control. Due to the dense nature of the vegetation, which may prevent good spray coverage or uneven stages of growth, repeat treatments may be necessary to maintain control. Visual control symptoms will be slow to develop.
Poison hemlock	-	-	1-2%	Apply as a spray-to-wet treatment. Optimum results are obtained when plants are treated at the bud to full-bloom stage of growth.
Quackgrass	1-3	3-40	2%	In annual cropping systems, or in pastures and sods followed by deep tillage: Apply 1 quart of this product in 3 to 10 gallons of water per acre. For 10 to 40 gallons of water per acre, apply 2 quarts of this product. Do not tank mix with residual herbicides when using 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%	For suppression, apply 24 fluid ounces of this product per acre at each of two applications 7 to 14 days apart or a single application of 2 quarts per acre. Apply specified rates in 5 to 10 gallons of water per acre. Apply in late September or early October to plants which are at least 18 inches tall and have been growing 45 to 60 days since the last tillage operation. Make applications at least 1 week before a killing frost.
Reed, giant	-	-	2%	Best results are obtained when applications are made in late summer to fall.

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Weed Species	Rate (QT/A)	Water Volume	Hand-Held % Solution	Comments
Ryegrass, perennial	1-3	3-40	1%	<p>In annual cropping systems apply 1 to 2 quarts of this product per acre. Apply 1 quart of this product in 3 to 10 gallons of water per acre. Use 2 quarts of this product when applying 10 to 40 gallons of water per acre. In noncrop, or areas where annual tillage (no-till) is not practiced, apply 2 to 3 quarts of this product in 10 to 40 gallons water per acre.</p> <p>For best results, apply when most plants have reached the boot-to-head stage of growth or in the fall prior to frost. Do not tank-mix with residual herbicides when using the 1 quart per acre rate.</p>
Smartweed, swamp	3-5	3-40	2%	<p>Apply when most plants have reached the early bud stage of growth.</p> <p>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 in the late summer or fall.</p>
Spurge, leafy	-	3-10	2%	<p>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.</p>
Starthistle, yellow	2	10-40	2%	<p>Best results are obtained when applications are made during the rosette, bolting and early flower stages.</p>
Sweet potato, wild	-	-	2%	<p>Partial control. Apply to plants that are at or beyond the bloom stage of growth. Repeat applications may be required.</p>
Thistle, artichoke	-	-	2%	<p>Partial control. Apply to plants that are at or beyond the bloom stage of growth. Repeat applications may be required.</p>
Thistle, Canada	2-3	3-40	2%	<p>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.</p> <p>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.</p>

Weed Species	Rate (QT/A)	Water Volume	Hand-Held % Solution	Comments
Timothy	2-3	3-40	2%	For best results, apply when most plants have reached the boot-to-head stage of growth.
Torpedograss	4-5	3-40	2%	For partial control. Apply when most plants are at or beyond the seedhead stage of growth. Repeat applications will be required to maintain control. Fall treatments must be applied before frost.
Trumpet creeper	2	5-10	2%	Partial control. Apply in late September or October, to plants which are at least 18 inches tall and have been growing 45-60 days since the last tillage operation. Make applications at least 1 week before a killing frost.
Vaseygrass	3-5	3-20	2%	Apply when most plants are in the early head stage.
Velvetgrass	3-5	3-20	2%	Apply when most plants are in the early head stage.
Wheatgrass, western	2-3	3-40	2%	For best results, apply when most plants have reached the boot-to-head stage of growth.

**WOODY BRUSH AND TREES RATE TABLE 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	Hand-Held % Solution	Comments
Alder	3-4	3-40	1-1.5%	For control
Ash	2-5	3-40	1-2%	Partial control
Aspen, quaking	2-3	3-40	1-1.5%	For control
Bearmat (Bearclover)	2-5	3-40	1-2%	Partial control
Beech	2-5	3-40	1-2%	Partial control
Birch	2	3-40	1%	For control
Blackberry	3-4	10-40	1-1.5%	For control. Make applications after plants have reached full leaf maturity. Best results are obtained when applications are made in late summer or fall. Applications may also be made after leaf drop and until a killing frost or as long as stems are green. After berries have set or dropped in late fall, blackberry can be controlled by applying a 1/4 percent solution of this product. For control of blackberries after leaf drop and until a 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.

Weed Species	Rate (QT/A)	Water Volume	Hand-Held % Solution	Comments
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
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

Weed Species	Rate (QT/A)	Water Volume	Hand-Held % Solution	Comments
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
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

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